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Editorial – Special Issue: Studies and research in Curriculum and Mathematics Education

Editorial – Número Especial: Estudios e investigaciones en Currículos y Educación Matemática

Éditorial – Numéro spécial: Études et recherches sur les programmes d'études et l'Curriculum des Mathématiques

Editorial – Número Especial: Estudos e pesquisas em Currículos e Educação Matemática

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This thematic edition of Educação Matemática Pesquisa [*Mathematics Education Research* — EMP], in conjunction with Working Group 3: Curriculum and Mathematics Education, of the Brazilian Society of Mathematics Education (SBEM), brings together studies that discuss the Mathematics curriculum from multiple scales of analysis — political, epistemic, pedagogical, discursive, and sociocultural — highlighting that the curriculum is a place of dispute, a place of power, and a place of meaning production.

The curriculum, when considered in the field of Mathematics Education, cannot be reduced to a list of contents, a course plan, or a normative artifact for distributing topics by year and stage. As Moreira and Tadeu (2013) state, the curriculum is an expression and production of school culture — not just a vehicle for transmitting content, but a way of constructing ways of seeing, classifying, and signifying the world. This understanding breaks with a purely technical reading and calls for recognizing it as a social and cultural production, historically situated, permeated by power relations and politically implicated: every curricular choice is always a choice of the world.

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The emergence of curriculum studies in the 20th century coincides with profound transformations in industrial capitalism, urbanization, and the constitution of the human sciences as a professional field. Apple (2006) highlights that the modern school has been constituted as a mechanism of cultural control, producing socially legitimized forms of knowledge, and therefore, the curriculum operates as a technology of hegemony: it not only organizes teaching but also regulates meanings, selects knowledge, defines norms, and establishes regimes of truth.

Therefore, discussing curriculum implies discussing culture and power. As Sacristán (2000) argues, curriculum is part of the culture that becomes institutionalized — while at the same time being conditioned by it. The curriculum selects knowledge, ways of thinking, and ways of existing that will be legitimized as desirable. Thus, curriculum is always a struggle: a struggle for meaning, for visibility, for recognition, and for authorization; a struggle for what will be considered school knowledge; a struggle for the school form of existence of Mathematics.

Lopes and Macedo (2011) reinforce that these disputes are constitutive of the field of curriculum studies itself: there is no neutral definition of curriculum, but rather tensions, negotiations, and shifts that shape what can be taught and learned in each historical period. When this debate is shifted to Mathematics Education, this dimension intensifies. Mathematics has historically been treated as a universal, objective, and neutral field that tends to obscure the political dimension of its school selection. Discussing curriculum in Mathematics Education therefore means making explicit that mathematical choices are traversed by cultural, ideological, racial, gender, class, territorial, and linguistic interests — and, in this sense, are choices of the world.

It is in this context — which understands the curriculum as a socio-political and cultural device — that this thematic issue is situated. The articles gathered in this special issue demonstrate that curriculum debates permeate policies and prescriptions, teaching practices and negotiations, materials and discourses, initial and continuing education, accessibility, and curricular justice. These are studies that illuminate real and contemporary disputes about school mathematical knowledge and about the ways of teaching and learning mathematics in different contexts, networks, and school cultures.

Thus, this issue is organized into four thematic sessions that, more than organizing articles by approximation, express analytical perspectives that highlight the main research fronts present in the body of work in this thematic issue.

The first session — *Policies, documents, and curricular materials in Mathematics Education* — brings together research that analyzes curricular policies, prescriptions, and normative documents, as well as the consequences of how such materials formalize, guide, and shape meanings for the curriculum.

Opening this session, the first article, *Statements that permeate the elaboration and implementation of the Paraná State Curriculum Guidelines (DCE-PR)*, by Edicléia Xavier da Costa, Lucas Martini, and Elenilton Vieira Godoy, examines statements considered central to the narratives about the elaboration and implementation of the DCE-PR, highlighting how methodological trends and conceptions about Mathematics, teachers, and students operated in the constitution of the state's curricular policies.

Following this, the second article, *The transversal character of argumentation in the Mathematics curriculum*, by Aitzol Lasa and Jaione Abaurrea, discusses the presence of argumentation as a transversal object in the Spanish Secondary Education Mathematics curriculum, analyzing proposals for learning situations developed with pre-service teachers and the dimensions of didactic suitability evidenced in the arguments present in these situations.

The third article, *Articulating Combinatorics and Probability — modeling the curriculum for Middle School*, by Ewellen Tenorio de Lima and Rute Borba, presents the construction of didactic material structured in blocks of articulated problems for the development of combinatorial and probabilistic reasoning in Middle School, based on the Theory of Conceptual Fields, from analyses of curricular documents and textbooks.

Continuing, the fourth article, *An approach from the curriculum dimension of vector algebra*, by Jany Santos Souza Goulart and Claudiano Goulart, investigates how official documents and classes in Mathematics Licentiate courses deal with the vector approach, from the perspective of the Anthropological Theory of Didactics, revealing discrepancies between what is prescribed and what is actually taught.

Closing this session, the fifth article, *Curriculum materials as a discursive genre in Mathematics Education*, by Gilberto Januario, Ana Paula Perovano, and Katia Lima, proposes a theoretical-methodological analysis that characterizes and discusses curriculum materials as discursive genres, highlighting that the way content is presented in these materials shapes ways of saying, addressing, and responding pedagogically.

Following the debate on curriculum documents and prescriptions, the second session — *Tensions and disputes in the lived curriculum / Teaching practice in Mathematics Education* — focuses on articles that examine the contradictions between the prescribed and the lived, highlighting how teachers interpret, negotiate, and transform the curriculum in the daily

practice, making it clear that implementation is not mechanical, but traversed by choices, contexts, and disputes.

The session begins with the sixth article, *The influence of the professional environment on the power of action of Mathematics teachers in the use of textbooks*, by Ayla Carvalho and Rúbia Amaral, which discusses how the context of the New High School shapes possibilities and limitations in the use of textbooks, showing that, despite the pressures of policies and external evaluations, which tend to make textbooks obsolete, teachers still reaffirm their power of action by resorting to these materials when they consider them relevant to curriculum development.

Also in this session, the seventh article, *"But there's another way to do it, right?": curriculum documents and teaching practice in the context of rural schools*, by Damares Cristina Fatima Silva and Carla Pompeu, analyzes narratives of rural teachers, showing that the prescribed curricular proposal and the Political-Pedagogical Project have little dialogue with rural social practices, and that teachers seek alternatives to bring the prescribed curriculum closer to the reality experienced by students.

The eighth article in this session, *Challenges in implementing the BNCC in Mathematics: teacher perceptions and the role of continuing education*, by Sheila Gilsiane Mühl, Eduardo Vinicius Costa, and Clarissa de Assis Olgin, presents research results with teachers from Middle School and highlights that the implementation of the National Common Curriculum Base is not linear, being traversed by doubts and tensions that reinforce the role of continuing education as a space for curricular re-signification.

Finally, in this session, the ninth article, referring to the essay *"What does Mathematics have to do with it?": Notes against the curriculum injustice of the right to justification*, by Flavio Augusto Leite Taveira and Deise Aparecida Peralta, problematizes, based on Forst and Habermas, processes of curricular injustice in Mathematics Education, drawing attention to conceptual obstacles that compromise the emancipation and legitimacy of formative processes.

The third session — *Curriculum, subjects, power, and curriculum justice* — shifts the focus from teaching practice, highlighting research that analyzes the relationships between curriculum, identities, and power relations, taking gender, disability, race, and mathematical neutrality as axes that demonstrate that there is no neutral curriculum.

At the beginning of this session is the tenth article, *The Silenced Insurrection: gender, field, and power in Mathematics textbooks*, by Danusa Nunes de Menezes and Marcio Antonio Silva, which analyzes collections approved in the 2020 National Textbook and Didactic

Material Program and highlights the predominance of male representations and the systematic erasure of women in the rural context, showing how textbooks function as gender technologies.

Next, the eleventh article, *Processes of (in)visibility and construction of normalities: power relations and the constitution of people with disabilities in Mathematics textbooks*, by José Wilson dos Santos and Tatiane da Silva Alves, analyzes, from a Foucauldian perspective, how textbooks produce restricted representations of disability, reinforcing normalizations and making diversities invisible.

Concluding this section, the twelfth article, *There is no neutrality: what kind of Mathematics are we using?*, by Thays Alves Oliveira, Daniele Costa Silva, and Vanessa Neto, problematizes, in a critical theoretical discussion, the imperialist character of Mathematics, based on narratives from Black female teachers, denaturalizing meanings and highlighting the need to imagine other mathematics and other possible curriculum.

Closing the edition, the fourth session — *Teacher training, tasks and curriculum accessibility in Mathematics Education* — focuses on discussions involving the curriculum in teacher training, analyzing the constitution of mathematical tasks, the uses that future teachers make of them and the challenges of building curricular accessibility, highlighting the potential of Universal Design for Learning as a guide for inclusive practices.

The opening of this session is with the thirteenth article *Mathematics(es) in face-to-face Pedagogy courses in Minas Gerais*, by Rejane Siqueira Julio and Vanessa Nogueira Oliveira, which analyzes the Pedagogical Projects of Pedagogy courses in that state, highlighting the low number of hours dedicated to Mathematics and the persistence of restricted conceptions about what Mathematics is in the curriculum for training pedagogues.

Next, the fourteenth article, *Transformation of mathematical tasks: from teacher training to the classroom*, by Daniela Santa Inês Cunha and Andreia Maria Pereira de Oliveira, discusses how undergraduate students in supervised internships transform mathematical tasks in school practice, highlighting that the way they explore and develop these tasks can broaden student participation and promote learning, emphasizing task management as an important part of teacher training.

The fifteenth article in the session, *Educational accessibility in Mathematics Education under the Principles of Universal Design for Learning*, by Priscila Regina Gonçalves de Melo Giamlourenço and Renata Cristina Geromel Meneghetti, presents the results of a training activity in initial teacher training, guided by the assumptions of special education, bilingualism, and the principles of Universal Design for Learning. This activity sought to develop accessible

lesson plan proposals considering students with disabilities and neurodivergent conditions, highlighting the importance of a culture of collaboration between teachers and specialists.

To conclude this set of discussions, the sixteenth article, *The act of planning school Mathematics through Universal Design for Learning: a formative episode in initial teacher education*, by Rodiney Marcelo Braga dos Santos and Tatiana Cristina Vasconcelos, discusses a formative episode implemented in the initial training of Mathematics teachers, guided by Universal Design for Learning, highlighting its potential to promote accessible, flexible, and original school Mathematics teaching planning, articulated with the competencies of the National Common Curriculum Base.

To make this organization explicit, this edition reaffirms Mathematics Education as a field that produces theory, criticism, and propositions about curriculum — and that understands the curriculum as a living, situated, and politically implicated device.

Finally, we thank *Educação Matemática Pesquisa* (EMP), the journal of the Postgraduate Studies Program in Mathematics Education at PUC-SP, for the opportunity to disseminate studies and research in Curriculum and Mathematics Education by researchers affiliated with GT03 of the Brazilian Society of Mathematics Education (SBEM), as well as those who investigate and problematize curriculum theories and policies in the field of Mathematics Education. We also thank the ad hoc reviewers who rigorously, carefully, and committedly read and issued opinions on the articles submitted to this thematic edition, contributing decisively to the academic quality of this volume.

May this edition strengthen the curriculum debate in our field, provoke new investigations, and foster necessary theoretical and methodological destabilizations. We hope that the articles gathered here will inspire situated, critical, and engaged readings — and broaden ways of thinking about the Mathematics curriculum as a field of knowledge production and as a social practice.

We wish you an excellent reading experience.

Dedication

We dedicate this thematic edition to the memory of professor Dr. Marcio Antonio da Silva, from the Federal University of Mato Grosso do Sul, who passed away this year. His departure constituted a profound loss for the field of Mathematics Education and for the research community of GT03 of SBEM. Professor Marcio contributed in a unique and consistent way to the consolidation of curriculum discussions in Mathematics Education in

Brazil and to the training of researchers who continue to produce and expand this debate. His work remains an ethical, political, and epistemological reference for thinking about curriculum as a dispute over meanings and as a space for confronting injustices.

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