



School mathematics and teacher authorship in the Brazilian curriculum production (1929-2019)

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Abstract: The study is part of the project "Mathematics in Basic Education Curricula, its Epistemologies and Policies," which aims to map and analyze the curricular proposals and/or curricula imposed in Brazil from 1929 to 2019, in order to understand how the epistemology of Mathematics supported each movement, as well as its implications for the teaching of the discipline in each historical period. Furthermore, it seeks to comprehend and discuss the production/formulation contexts of each curricular proposal to demonstrate whether or not teacher participation/authorship was implicated in its development. The preliminary findings of the investigation are part of the search for evidence to support a critical assessment of the curriculum field in its interface with Mathematics Education.

Keywords: Mathematics Curriculum. Curriculum. Mathematics Education. History of Curriculum Production.

Matemática escolar y autoría docente en la producción curricular Brasileña (1929-2019)

Resumen: El propósito de este texto es presentar una investigación institucional y discutir los resultados parciales de su desarrollo. La propuesta se sitúa en el contexto de las "Matemáticas en los currículos de la Educación Básica, sus epistemologías y políticas", que tiene como objetivo mapear y analizar las propuestas curriculares y/o los currículos prescritos en Brasil, desde 1929 hasta 2019, para que es posible comprender cómo la epistemología de las matemáticas apoyó cada movimiento, así como sus implicaciones para la enseñanza de la disciplina en cada período histórico. Además, busca comprender y discutir los contextos de producción/formulación de cada propuesta curricular en términos de evidenciar si hubo participación/autoría docente en su elaboración. Los resultados preliminares alcanzados por la investigación forman parte de la búsqueda de subsidiar una mirada crítica al campo del currículo en su interfaz con la Educación Matemática.

Palabras clave: Currículo de Matemáticas. Currículo. Educación Matemática. Historia de la Producción Curricular.

Matemática escolar e autoria docente na produção curricular brasileira (1929-2019)

Resumo: O propósito deste texto consiste em apresentar uma pesquisa institucional e discutir os resultados parciais de seu desenvolvimento. A pesquisa se situa no contexto do projeto "Matemática nos currículos da Educação Básica, suas epistemologias e políticas", que assume como objetivos mapear e analisar as propostas curriculares e/ou os currículos prescritos no Brasil, de 1929 a 2019, a fim de que seja possível compreender como a epistemologia da matemática subsidiou cada movimento, assim como suas implicações para o ensino da disciplina em cada período histórico. Busca-se, além disso, compreender e discutir os contextos de produção/formulação de cada proposta curricular em termos de evidenciar se houve

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participação/autoria docente em sua elaboração. Os resultados preliminares alcançados pela investigação se inserem na busca por subsidiar um olhar crítico para o campo do currículo em sua interface com a Educação Matemática.

Palavras-chave: Currículo de Matemática. Currículo. Educação Matemática. História da Produção Curricular.

1 Introduction²

Experiments in the field of Mathematics Education are currently and substantively intensifying and diversifying, both in relation to research dedicated to Mathematics curricula in its various aspects and dimensions. Palanch's (2016) work, as cutting-edge research, provides evidence for the preceding statement, demonstrating that, from 1987 to 2012, the focus of these studies expanded, as did the theoretical-methodological diversity of investigative paths and trails.

Regarding the stipulated curricula - official curriculum documents whose preparation is typically managed by government agencies responsible for education - Palanch's (2016, p. 147) research indicates that: "the continuous training of teachers for the appropriation, interpretation, and implementation of the curriculum are demands of future studies, as this was a finding pointed out in most of the analyzed works." According to the researcher, the mapped works reveal the existence of "a gap between what the official documents trace and what actually happens in the classroom."

The study conducted by Ball, Maguire, and Braun (2016) aids us in understanding how schools, as community actors, carry out the stipulations, not only for the curriculum, but also educational policies in general. This movement is marked by hybridisms and recontextualizations of different orders in how schools "create" policies, making them concrete in their contexts (BALL, 2001). According to Lopes (2005, p. 55), recontextualizing corresponds to reinterpretation movements that are "inherent in the processes of text circulation." In turn, "the action of multiple contexts in this reinterpretation, identifying the relationships between processes of reproduction, reinterpretation, resistance, and change at the most different levels can be observed" (LOPES, 2005, p. 55).

Thus, we avoid viewing recontextualization processes as deviations or distortions from the curricular prescription. Instead, we emphasize the importance of

² This text was created in response to comments, inquiries, and recommendations received following the presentation of its preliminary version at the *VIII Seminário Internacional de Pesquisa em Educação Matemática* (SIPEM), in GT03 — *Currículo e Educação Matemática*, in 2021.

recontextualization in expressing how official curricular discourses are confronted with the real possibilities and constraints for their accomplishment. This perspective, by moving away from the acknowledgement of recontextualization as a deviation from the standard, leads us to the possibility of understanding what is officially intended to be built, in terms of curricular policy, and the daily life/diverse contexts, where this discourse is reinterpreted, according to different characteristics.

Based on this understanding, the gap between the content of curricular guidelines and what actually occurs in classrooms can be investigated from at least two distinct and non-exclusive perspectives: that this gap is explained by the recontextualization that characterizes the curricular construction processes, and that this distance is also explained by some level of ignorance, negligence, or even resistance on the part of teachers. According to the study by Palanch (2016, p. 146), part of the resistance to stipulations is justified because, from the perspective of a significant number of teachers, "these implementations and/or curricular organizations are imposed on them without prior consultation and even training and/or didactic guidance."

As we will see below, both of the aforementioned perspectives are related to the notion of teacher authorship in curriculum development processes, for which we argue, and lead us to the selection of two questions formulated at the end of Palanch's research (2016, p. 153) as capable of supporting our understanding of these processes:

- How can formulators assist teachers in taking ownership of curriculum documents as well as underlying teaching and learning theories and concepts? (...)
- How to promote/enhance teacher authorship in the process of curriculum design and development?

This text registers a clipping of the ongoing investigation, titled "Mathematics in Basic Education curricula, its epistemologies, and policies," in order to contribute to the elucidation of possible answers to the questions presented.

To answer the previous questions, we refer to document analysis, bibliographic research and the study of the production contexts of the main curricular proposals or curricula stipulated in Brazil from 1929 to 2019. The selection of this historical clipping is justified for two reasons: first, 1929 was the year in which Arithmetic, Algebra, and

Geometry were integrated under the Mathematics curricular component for the first time (VALENTE, 2002; WERNECK, 2003); and second, 2019 was the year of consolidation of the *Base Nacional Comum Curricular* (BNCC-EM), also in an unprecedented manner, though widely questioned.

In the context of this research, the following objectives guide the study of movements and curricular proposals/curricula stipulated with an emphasis on Mathematics: (1) To map, analyze, and debate the constitutive path of Mathematics in the stipulated curricula and curricular proposals of Basic Education in Brazil, which come from both the Federal and State Governments; (2) To understand how Mathematics epistemology supported each of the mapped and analyzed curricular proposals, as well as the implications for discipline teaching; (3) To determine whether and how teachers were involved in curriculum development processes.

To contribute to a better understanding of how to promote teacher authorship in curriculum development processes, we have outlined a specific objective derived from ones already presented: to understand what role teachers were/have been assigned in the elaboration processes that constituted the main curricular proposals in Brazil.

2 Theoretical-methodological orientation

We situate this research at the crossroads of two of Rico (2013)'s five categories for categorizing research on Mathematics curricula: investigations that focus on disciplinary content and those that focus on innovation and curriculum development processes. The following are common objectives for both types of investigations:

The identification, categorization, and comparison of different movements that serve as the foundation for various curricula or programs designed for the teaching of Mathematics and that have evolved over time within the same country or group of countries. (RICO, 2013, p. 16, our translation)

According to Rico (2013, p. 13, our translation), other issues relevant to research on Mathematics curricula that relate to the scope of this work are: "what does mathematical knowledge consist of? What relevant features distinguish this knowledge from others? Why is this type of knowledge important? What connections do mathematical knowledge have with our society's cultural determinations?" According to the author, these are not utterly trivial issues that "profoundly affect the design and development of the Mathematics curriculum." (RICO, 2013, p. 14).

According to this viewpoint, this research is theoretically grounded on works that thematized: a) a conception of curricular proposal that allowed us to define the scope of research (BARRETO, 1995; PIRES, 2000, 2005; PIRES & SILVA, 2011); b) teacher authorship and teacher authorship in curriculum development processes (ALVES et al, 2002; OLIVEIRA, 2012; MATTAR, 2013); c) the conceptions and trends of Mathematics and its teaching - school Mathematics - brought about/consubstantiated in each proposal (FIORENTINI, 1995).

According to Pires's works (2000, 2005), we understand "curricular proposals" as curricular documents specified by government agencies, the official curricula, and also documents produced by curricular reform movements, such as the *Movimento da Matemática Moderna* (MMM) in recent Brazilian history.

Based on the analysis of the most recent Brazilian curricular proposals by Barreto (1995, p. 3), we add as a foundation for this research the need to study these proposals because they "become important references in education networks, even when disseminated only through in-service teacher training or textbooks." According to the author, "the curricular proposals have been the object of ideological debate among groups seeking hegemony in the definition of values, attitudes, and knowledge that should be part of our children's and adolescents' formation." (BARRETO, 1995, p. 4). Furthermore,

According to the study of curriculum development in Brazil, curricular decisions have historically been marked by government actions rather than movements born in schools, carried out by teachers, or the civil society. One of the defining features of Brazilian public policies on curricular issues is the lack of curricular implementation actions, as if new ideas were suddenly transformed into practice. In addition to the lack of implementation actions, there is a lack of monitoring/evaluation of the proposed innovations, which prevents an adequate evaluation, counting successes and errors. (PIRES; SILVA, 2011, p. 58)

The statement about the absence of teacher participation in curricular elaboration processes, of movements born and carried out in/by schools, to which the authors refer in the preceding excerpt, motivates and underpins our perspective on understanding how Brazilian curricular proposals, particularly those of Mathematics, are constituted in terms of authorship and teaching participation. We believe that understanding processes, obstacles, limits, and potentials can lead to ideas about how to improve teacher authorship in curriculum development processes.

In this regard, we understand that "the concept of authorship ensures the subject's active dimension in the production of knowledge and social practices" (OLIVEIRA, 2012, p. 9). We mobilized this concept to consider teaching authorship from the author's point of view that "the author is the originator; they are the subject." We also include Mattar's (2013, p. 272) belief in this last topic:

Teachers are increasingly treated as incapable of dealing responsibly and competently with the exercise of their profession, particularly in decision-making involving curricular organization and teaching planning, which frequently leads to the exhaustion of the ability to perform an authorial work through which they recognize themselves. This situation must be gradually overcome, allowing for a true appreciation of their full capacities to organize and manage their performance with autonomy, albeit always relative, and competence.

Indeed, "a substantial portion of our curricular proposals have been unable to incorporate these experiences, intending to hover above the daily practical activity of the subjects that make up the school" (ALVES et al, 2002, p. 41). Recognizing and enhancing teacher authorship entails accepting the assumption that "consistent curricular practice can only be found in the knowledge of subjects who follow the curriculum" (p. 41). Assuming it, in turn, implies treating teaching work differently, particularly teaching participation in curriculum development processes.

Finally, on the conceptions and trends of Mathematics and its teaching, we base ourselves on the work of Fiorentini (1995), and on some ways of seeing and conceiving the teaching of Mathematics in Brazil, to systematize some of his perceptions.

The work of mapping and identifying mathematical conceptions/trends and their teaching contributes to our understanding of curricular proposals based on how they conceptualize and mobilize school Mathematics. Retrieving them will allow us to relate and confront them with current curricular perspectives.

Methodologically, this study is based on qualitative research that is exploratory and descriptive in nature. We used a multimethod framework to consider the different productions and specificities of each historical moment over a long period of time, that is, nine decades of Brazilian Mathematics curriculum production.

Before delving into the implications of this decision, it should be noted that multimethod research articulates different approaches, strategies, and methods in research in both human sciences (FERREIRA, 2009; SOBRINHO & ROMEIRO, 2014) and natural and biological sciences (LINS et al, 2021). As Sobrinho and Romeiro

argue, this articulation of different approaches, strategies, and methods responds well to the complexities and heterogeneity of the realities studied (2014, p. 94),

Multimethodology is rooted in the idea of different paradigms, which emphasizes the desire to combine methodologies based on different assumptions, but which can go beyond the limits of the paradigms in which they were conceived. Adopting a way of seeing the world is similar to seeing it through the optics of a specific instrument, such as an X-ray, microscope, or telescope. Each instrument will provide a unique perspective on various aspects of the world, but due to its limitations, it will not capture other aspects. As a result, adopting a single paradigm results in only a limited view of a specific situation in the real world.

The existence of multiple real dimensions revealed by different approaches justifies the use of multimethodologies as different ways of understanding the same observed phenomenon. Given the complexity of the factors that interfere in the characterization of this phenomenon, simulations on the spread of the coronavirus are a recent illustrative example of the mobilization of multimethodologies, as demonstrated by Lins et al (2021). Ferreira's (2009) work stems from the use of multimethodologies in theater and education research.

In this research, we were inspired by the aforementioned authors to characterize a multimethodological perspective in which the bibliographic survey and the literature review are articulated, using the available technological means, interviews and oral history, with document analysis and the study of production contexts/influence, with the objective of mapping, identifying and analyzing the Brazilian trajectory in terms of how Mathematics has been historically treated in curricular proposals/stipulated curricula, as well as the teaching authorship in its elaboration processes.

We considered the *Portal de Periódicos* of the *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* (CAPES) for the initial stage of bibliographic research due to its institutionality and data reliability guarantee. The searches were conducted in April 2021, using only the connective "AND," which selects articles at the intersection of the search terms. We began by identifying as "relevant results" those texts that contained the search terms in the title and/or abstract of the article, restricting ourselves to articles in Portuguese published in peer-reviewed journals (Table 1).

Table 1: Search results by category and terms used

Search terms	Total results	Articles written in Portuguese	Peer reviewed Journals	Relevant results
"Curriculum" AND "Mathematics"	1923	1482	640	16
"Math Curriculum" AND "Reform"	84	61	23	15
"Curricular Proposal(s)" AND "Mathematics"	455	377	153	02
"Movement of Modern Mathematics"/ "MMM"	141	79	57	03
"National Curriculum Parameters" / "PCN" AND "Mathematics"	787	605	310	06
"National Curriculum Guidelines"/ "DCN" AND "Mathematics"	542	426	201	03
"Common National Curricular Base"/ "BNCC" AND "Mathematics"	354	251	117	02

Source: Elaborated by the Author

The articles identified as relevant results gave us a better understanding of academic production, studies, and research on each of the moments and historical landmarks under consideration. According to this interpretation, there is also a higher density of scientific production on reforms and curricular movements contextualized in the first half of the twentieth century - an important factor for the use of multimethodologies.

In this regard, we highlight the existence of academic works resulting from research conducted specifically within the scope of the History of Mathematics Education, which thematize a significant portion of the curricular proposals that characterized the Brazilian educational scenario during the twentieth century. Understanding the period from the Francisco Campos Reform, with which we began our historical approach, to the period following the decline of the Modern Mathematics Movement, we refer to the works of Valente (2002; 2004), Werneck (2003), Tavares (2002), Rocha (2001), Dassié (2001), Dassié & Rocha (2002), Carvalho (1988), Soares (2001), and Bertoni & Valente (2016).

Although there has been an increase in the number of works dedicated to the study of curricular prescriptions and proposals, as attested by Palanch (2016), there are still few that discuss, in the field of Mathematics Education, the most recent

Brazilian curricular proposals in the period referring to the last few years. To complement the bibliographic study of this period, we use document analysis, as proposed by Ludke and André (1986), to organize, systematize, and study official curricular documents - curricular proposals and/or the stipulated curricula.

Methodologically, document analysis also contributed to the elucidation of contexts, actors, and procedures related to recent curriculum development processes, as stated by Cellard (2008), allowing us to assess whether there was teacher authorship in these processes and how it occurred - in terms of the dimension of production contexts addressed by Ball (2001). According to Ball (2001), interviews and oral history resources are also mobilized to complement the study of such contexts of production and influence, with a focus on the production of curricular policies brought about by such movements and reforms. This methodological choice allows us to approach the *Parâmetros Curriculares Nacionais* (PCN), *Diretrizes Curriculares Nacionais* (DCN), and *Base Nacional Comum Curricular* (BNCC) identified in Brazil (2017).

3 School Mathematics and teacher authorship in the Brazilian curriculum production

The preliminary findings of the study were presented and discussed during a workshop given by the author at the *VIII Encontro Brasiliense de Educação Matemática* (EBREM), titled "Mathematics Curriculum under the Sociocultural Perspectives of Mathematics Education." The academic productions identified in the first stage of the bibliographic survey, as well as the main works to which such productions refer, were discussed during the workshop.

To define the sociocultural perspectives of Mathematics Education, as mentioned in the workshop title, we refer to a possible systematization of Fiorentini's (1995) work, in which the author identifies the different conceptions and tendencies of teaching Mathematics in Brazil over a period similar to that of this work:

Table 2: Conceptions/trends in Mathematics teaching in Brazil

Conception/Trend and respective historical moment	How it approaches Mathematics and its teaching
Classical Formalist Prevailed until the 1950s in Brazil	It is made up of the Euclidean model and the Platonic view of Mathematics: The Euclidean model is defined as "the logical systematization of mathematical knowledge from primitive elements (definitions, axioms, postulates)" (p. 5). Platonic conception of Mathematics: "it is characterized by a static, ahistorical and

	dogmatic view of mathematical ideas, as if they existed independently of men. According to this innate conception, Mathematics is not invented or constructed by man." (FIORENTINI, 1995, p. 6)
Empiricist-activist It arrived in the country around the 1920s, but took a while to consolidate	"It does not contradict the idealist conception of knowledge, (...) mathematical ideas are obtained through discovery. The difference is that they exist in the natural and material world in which we live, rather than in an ideal world. Thus, mathematical knowledge emerges from the physical world and is extracted by man through senses, according to empiricist-activists." (FIORENTINI, 1995, p. 9)
Modern Formalist Corresponds to the Modern Mathematics Movement (1960-1980)	"The MMM would advocate for a return to mathematical formalism, but on a new foundation, the algebraic structures and formal language of modern Mathematics." According to Kline, this emphasizes the internalist approach of Mathematics to Mathematics itself, which is self-sufficient. The emphasis is on the precise application of mathematical language, the rigor and justification of algebraic transformations via structural properties." (FIORENTINI, 1995, p. 14)
Technicist (and its variations) Corresponds to the moment of the Brazilian Military Dictatorship	"Mechanistic technicism attempts to reduce Mathematics to a set of techniques, rules, and algorithms with little regard for substantiating or justifying them." Indeed, this mechanistic technicality will seek to emphasize doing at the expense of other critical aspects such as understanding, reflecting, analyzing, and justifying/proving. According to this pedagogical trend, Mathematics learning consists primarily in the development of skills and attitudes, as well as the establishment of concepts or principles." (FIORENTINI, 1995, p. 17)
Constructivist 1960s and 1970s	"Constructivism regards Mathematics as a human creation made up of abstract structures and relationships between real or possible forms and magnitudes." Hence, this current emphasizes the process over the product of knowledge. In other words, Mathematics is viewed as a construct that emerges from man's dynamic interaction with their surroundings. The child's apprehension of these structures occurs in an interactionist manner, particularly through reflective abstractions, which are carried out through the construction of relationships between objects, actions, or even already constructed ideas. This abstraction is a mental construction created interactively/operatively." (FIORENTINI, 1995, p. 20)
Socio-ethnoculturalist 1980s and 1990s	"Mathematical knowledge is no longer viewed as ready, finished, and isolated from the world, as formalist tendencies once did. On the contrary, it comes to be regarded as a practical, relative, non-universal, and dynamic knowledge, generated historically and culturally in various social practices that may or may not appear systematized. Ethnomathematics' cultural-anthropological way of seeing and conceiving Mathematics and its production/dissemination has also brought about profound changes in the way we think about and treat Mathematics Education." (FIORENTINI, 1995, p. 26)

Source: Elaborated by the author based on the work of Fiorentini (1995)

The workshop's goal, as part of the activities centered on multimethodologies, also included the validation of the historical landmarks chosen for the development of the research, for which this framework proved quite useful. As shown in Table 3, the validation of the historical landmarks considered for the purposes of this study allowed us to better adapt the articulated research methodologies for the study of each moment.

Table 3: Landmarks considered for characterizing the study on Mathematics curriculum production in Brazil

Landmarks considered	Content / Curriculum production with an emphasis on Mathematics	Methodological resource adopted
Before the emergence of sociocultural perspectives of Mathematics Education	Euclides Roxo's experiences at Colégio D. Pedro II, with the curricular component "Mathematics" (1929). Francisco Campos Reform (1931). Gustavo Capanema Reform (1942-1946). Emergence of the first Mathematics textbooks, bringing together and articulating arithmetic, algebra and geometry. Conceptions and trends in Mathematics teaching expressed in the period.	Emphasis on the bibliographic survey, mapping and state-of-the-art research, based on the works of Valente (2002; 2004), Werneck (2003), Tavares (2002), Rocha (2001), Dassie (2001), Dassie & Rocha (2002), Carvalho (1988), Soares (2001), as well as Bertoni & Valente (2016).
	Modern Mathematics Movement, 1960s to 1980s. Conceptions and trends in Mathematics teaching expressed in the period.	
Emergence and consolidation of sociocultural perspectives in Mathematics Education	Federal Constitution of 1988; <i>Lei de Diretrizes e Bases da Educação</i> , 1996, and its impacts on curriculum policies. <i>Parâmetros Curriculares Nacionais</i> (PCN, 1996). <i>Diretrizes Curriculares Nacionais</i> (DCN, 2013). Conceptions and trends in Mathematics teaching expressed in the period.	Document analysis. Production context study. Interviews and oral history.
After the consolidation of the sociocultural perspectives of Mathematics Education	<i>Base Nacional Comum Curricular</i> (2017). <i>Base Nacional Comum Curricular do Ensino Médio</i> (2019). Conceptions and trends in Mathematics teaching expressed in the period.	Document analysis. Production context study. Interviews and oral history.

Source: Elaborated by the Author

On the occasion of the workshop, it was also highlighted and supported the need to consider Federal Laws 10,639 of 2003 and 11,645 of 2008 in order to limit the research corpus. This requirement was justified based on a broader concept of the curriculum proposal as a reform or teaching movement of various types but guided by the goal of presenting and proposing guidelines and alternatives to existing pedagogical practices.

Both amended Article 26-A of the *Lei de Diretrizes e Bases da Educação Nacional* (BRASIL, 1996): "§ 2 The contents referring to the history and culture of Afro-Brazilian and Brazilian indigenous peoples will be taught within the scope of the entire school curriculum, particularly in the areas of artistic education and Brazilian literature and history." Although the text focuses on artistic education and Brazilian literature and history, the curricular documents developed later demonstrate the need for all areas to engage in dialogue with this theme.

According to the *Diretrizes Curriculares Nacionais para a Educação das Relações Étnico-raciais*, which resulted from these policies:

The inclusion, while respecting the autonomy of Higher Education establishments, in the contents of subjects and curricular activities of the courses that it teaches, of Ethnic-Racial Relations Education, of knowledge of African origin and/or that concern the black population. For example, in Medicine, the study of sickle cell anemia and the problem of high blood pressure; in Mathematics, contributions of African roots identified and described by Ethno-Mathematics; and in Philosophy, the study of traditional African philosophy as well as contributions from contemporary African and Afro-descendant philosophers. (BRASIL, 2004, p. 24)

In this sense, our research considers both of the aforementioned federal laws because it sees them as a requirement for future curricular proposals, including Mathematics.

The definition of a standard for the study of the production contexts of the various curricular policies analyzed was an important design that emerged from the analysis of teacher authorship in curriculum development processes. We asked whether there was teacher authorship, as we previously defined it, in each stage of the Brazilian curriculum development process, that is, the participation and representation of groups of teachers who work in Basic Education and directly with the teaching of Mathematics. When it exists, i.e., when teacher authorship is present in such processes, we begin to wonder: How and to what extent? Which production dynamics are involved? What conditions and contexts encouraged/promoted participation? For what reasons?

When it doesn't exist, that is, when teacher authorship is missing, we incorporate a reference from Boaventura de Sousa Santos's (2007) *Sociology of Absences and Emergencies*, which states that all absence is actively produced as an absence. From this vantage point, we ask ourselves in these situations: How did this omission come about during the curriculum development process?

In this regard, the study by Valente (2020), titled "Curricular production, teaching Mathematics, and experts," was presented at the 5^o *Encontro Nacional de Pesquisa em História da Educação Matemática* (ENAPHEM). In this work, the author considers "official curriculum documents as a systematization of a teaching Mathematics at a given period" and teaching Mathematics as "the production that articulates the Mathematics that must be present in teaching with the Mathematics of teacher

education." (VALENTE, 2020, no page).

Thus, Valente's work (2020) provides us with relevant subsidies to investigate: a) the perspective of teacher authorship in curriculum development processes in relation to the concept of expert mobilization mobilized by the author; and b) the conception of school Mathematics underlying each curricular proposal in light of the conception of teaching Mathematics. We intend to return to documentary analysis from the articulation of both topics in the next stage of this investigation.

Another important outcome of the research is the creation of a video-documentary as an audiovisual educational material that can be incorporated into the initial and continuing education of teachers who teach Mathematics as a didactic resource. The project, titled "A Brief History of Mathematics Curriculum Production in Brazil (1929-2019)," was funded by the 7th FUSP-Santander of the *Pró-Reitoria de Cultura e Extensão da Universidade de São Paulo* (PRCEU-USP). The documentary's³ four episodes each focus on one of the four lines presented in Table 3.

We refer to the works of Valle (2020; 2021) to illustrate the approach taken for one of these specific moments in which the study of the context of curricular policy production is emphasized, referring to the case of the BNCC of Mathematics, for which this study mobilized different approaches. These works systematize the theoretical-methodological path of mobilization of Santos's Sociology of Absences (2007) to understand teaching authorship in this process of curricular elaboration, based on notes and letters sent to the *Ministério da Educação* (MEC) during that time period by the associations sciences in education, namely the *Associação Brasileira de Currículo* (ABdC) and the *Associação Nacional de Pesquisa e Pós-graduação em Educação* (ANPEd).

The absence of this curricular policy is evident in these works, which focus on the context of document production, the plurality of pedagogical conceptions, and the sociocultural perspectives of Mathematics Education. This consideration positions the aforementioned curricular policy in the opposite direction of what has been configured as a trend in Brazilian curricular production, both in terms of greater incorporation of

³ The documentary episodes can be accessed via the following link on the CAEM website while a final stage of refinement is carried out before the videos are finally published on CAEM's YouTube channel.: <https://www.ime.usp.br/caem/documentario.php>

sociocultural perspectives of Mathematics Education in Mathematics curricula, and, more importantly, in terms of greater permeability of these policies to authorship and teaching participation.

4 Final considerations

In this text, we present an ongoing institutional research and discuss some of the preliminary findings. The proposal is situated within the context of the project "Mathematics in the Basic Education Curricula, its Epistemologies and Policies," which aims to map and analyze the curricular proposals and/or curricula stipulated in Brazil from 1929 to 2019, in order to understand how Mathematics epistemology supported each proposal, as well as its implications for the teaching of the discipline in each historical period.

Furthermore, we seek to understand and discuss the production/formulation contexts of each curricular proposal in order to demonstrate whether teacher participation/authorship was involved in its development. The preliminary findings of the investigation are part of the effort to fund a critical assessment of the curriculum field in its interface with Mathematics Education.

In summary, we highlight the results achieved so far in the investigation: a) the recognition that, in general, Brazilian curricular proposals can render existing teaching practices invisible by treating them as homogeneous, thereby limiting opportunities for interaction with the classroom; b) the identification of curricular policies' procedures and methods that have recognized/promoted teacher authorship to the detriment of the near exclusivity of experts; c) an understanding that the university-school relationship is an important factor in the successful implementation of policies in this recognition/promotion of teacher authorship; d) the publication of two texts on the BNCC of Mathematics production context (VALLE, 2020; 2021); and e) the production of a documentary on the history of Brazilian curriculum production.

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