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Articles Section

Written Text Production as a Formative Competence in the Mathematics Licentiate Degree

Written Text Production as a Formative Competence in the Mathematics Licentiate Degree

Produção textual escrita como competência formativa na Licenciatura em Matemática

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Abstract

The study analyzed how written textual production (WTP) is configured as a formative competence in the Licentiate Degree in Mathematics at Unifesspa, Marabá campus, by articulating prescriptions from the Pedagogical Course Project (PCP) and the conceptions of teacher educators. Grounded in sociointeractionist perspectives on language, the study understands writing as a social practice constitutive of teaching. Methodologically, it is a qualitative documentary and empirical research, based on an interpretive reading of the PCP and semi-structured interviews. The results indicate that the normative document recognizes writing as a competence; however, it operationalizes it mainly through academic genres and culminating moments, with little explicitness regarding longitudinal pathways. The interviews confirm disputes over meaning and point to the risk of bureaucratic reduction, reinforcing the need to institutionalize WTP as a continuous cross-cutting axis in teacher education.

Keywords: Mathematics Education. Initial Teacher Education. Licentiate Degree in Mathematics. Written Textual Production.

Resumo

O estudo analisou como a produção textual escrita (PTE) é configurada como competência formativa na Licenciatura em Matemática da Unifesspa, campus Marabá, articulando prescrições do Projeto Pedagógico do Curso (PPC) e concepções de professores formadores. Fundamentado em perspectivas sociointeracionistas da linguagem, compreende a escrita como prática social constitutiva da docência. Metodologicamente, trata-se de pesquisa qualitativa documental e empírica, com leitura interpretativa do PPC e entrevistas semiestruturadas. Os resultados indicam que o documento normativo reconhece a escrita como competência, porém a operacionaliza sobretudo por meio de gêneros acadêmicos e momentos culminantes, com pouca explicitação de percursos longitudinais. As entrevistas confirmam disputas de sentido e apontam risco de redução burocrática, reforçando a necessidade de institucionalizar a PTE como eixo transversal contínuo na formação docente.

Palavras-chave: Educação Matemática. Formação Inicial. Licenciatura em Matemática. Produção Textual Escrita.

Resumen

El estudio analizó cómo la producción textual escrita (PTE) se configura como competencia formativa en la Licenciatura en Matemáticas de la Unifesspa (campus Marabá), articulando las prescripciones del Proyecto Pedagógico del Curso (PPC) y las concepciones de los profesores formadores. Fundamentado en perspectivas sociointeraccionistas del lenguaje, entiende la escritura como práctica social constitutiva de la docencia. Metodológicamente, se trata de una investigación cualitativa documental y empírica, basada en una lectura interpretativa del PPC y en entrevistas semiestructuradas. Los resultados indican que el documento normativo reconoce la escritura como competencia, pero la operacionaliza principalmente mediante géneros académicos y momentos culminantes, con escasa explicitación de trayectorias longitudinales. Las entrevistas confirman disputas de sentido y señalan el riesgo de una reducción burocrática, reforzando la necesidad de institucionalizar la PTE como eje transversal continuo en la formación docente.

Palabras clave: Educación Matemática. Formación Inicial. Licenciatura en Matemáticas. Producción Textual Escrita.

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1. Introduction

Almost as a foreword, the reflections that, in recent decades, have been straining the ways of understanding the initial education of teachers who teach mathematics are evoked. In different academic spaces, such as inaugural classes, scientific meetings and debates within the graduate programs in science and mathematics education, the understanding has been reiterated that teacher education goes beyond the transmission of specific contents, requiring the construction of professional knowledge, critical reflection on teaching, and the constitution of a teaching identity committed to educational processes (Fiorentini; Passos; Lima, 2016; Fiorentini *et al.* 2016).

In this context, one of the discussions that has gained space in the field of mathematics education concerns the linguistic processes that cross the teaching and learning of mathematics. Research anchored in sociocultural perspectives of learning has problematized the understanding that teaching and learning mathematics are processes constitutively mediated by language, understood as the practice of argumentation, signification, communication, and production of meanings (Bronckart, 1999).

In this context, language ceases to occupy a secondary place. It assumes a central role in the formative processes, since it is through it that people produce meanings, organize mathematical thinking, argue, explain, and communicate ideas. It is in this movement that written textual production (WTP) is inserted, understood as linguistic and formative competence that participates in the constitution of the teacher who teaches mathematics, by favoring reflection, the appropriation of communication and mathematical discourse, as well as the construction of a professional discourse within the initial education (Freitas, 2006).

In the field of mathematics education, WTP has historically been associated with instrumental functions, linked to the evaluation, registration of activities, or fulfillment of academic requirements (Barros, 2016). This understanding contributed to the maintenance of writing in many formative contexts, outside the pedagogical project of the mathematics teaching degree courses, and dissociated from a perspective that recognizes it as a formative practice and a professional teaching competence (Piano; Bozelli, 2025).

However, when considering that the teacher who teaches mathematics acts in multiple discursive spheres, such as the elaboration of plans, evaluative records, production of didactic materials and communication of mathematical ideas, in addition to the construction and dissemination of knowledge, it becomes evident that the WTP goes beyond the conception of an auxiliary resource and integrates the very exercise of teaching and the constitution of the teacher who teaches mathematics.

Brazilian educational legislation has repeatedly recognized the centrality of linguistic processes in teacher education, attributing to communicative competence, especially the ability to express oneself, orally and in writing, clearly and with precision, a structuring role in the constitution of the professional profile of the teacher who teaches mathematics. This understanding is reaffirmed by Resolution CNE/CP n. 4/2024 (Brasil, 2024), by explaining that initial education must ensure the development and improvement of the use of the Portuguese language and written and oral communication as constitutive dimensions of pedagogical performance and mediation of teaching and learning processes.

This guideline updates and consolidates guidelines present in previous normative frameworks, such as the Law of Guidelines and Bases of National Education n. 9.394/1996 (Brasil, 1996), the opinions and resolutions of the National Council of Education, the Curriculum Guidelines of mathematics courses, and the National Common Base for Teacher Initial Education. This shows the historical consolidation of language and, in particular, of writing, as a formative requirement within the scope of teaching degrees, even though its curriculum materialization is not uniform.

However, the presence of the WTP in official documents does not guarantee its effective institutionalization in the curricula. Although discussions on language and teacher education have expanded

in the field of mathematics education, there are still few studies that problematize, in a more articulated way, how written production is assumed in the curricula of mathematics degrees and how teacher educators signify it. In many studies, writing appears linked to specific experiences, certain textual genres, or specific practices, while discussion of its place in curriculum organization and in the education of the teacher who teaches mathematics remains underexplored.

It is in this context that the discussion presented in this article is situated, derived from broader research conducted as part of a doctoral thesis that focuses on written textual production as a formative dimension in the mathematics teaching degree.

Given this scenario, the following research question emerges: How is written textual production configured as a formative competence in the mathematics teaching degree, considering the curriculum prescriptions of the PPC and the teacher educators' conceptions? Thus, the objective of the study presented in this article is to analyze how the written textual production is configured as a formative competence in the curriculum of the mathematics teaching degree of the Federal University of the South and Southeast of Pará, campus of Marabá, based on the prescriptions of the Pedagogical Project of the Course (PPC) and the teacher educators' conceptions.

The relevance of the study lies in its potential to contribute to the debate on the curriculum organization of mathematics teaching degree courses by problematizing the limits and potential of written textual production as a formative competence. By highlighting tensions between curriculum prescription and teaching conceptions, the article offers support for reflection on formative policies and curriculum practices that recognize the WTP as a structuring dimension of initial education, reaffirming its role in the construction of more reflective, conscious and socially committed pedagogical practices.

In addition to this introduction, the article is organized into four sections. The first presents the theoretical framework underlying the understanding of written textual production as a social practice and a formative competence. The second section describes the research methodology. The third discusses the results produced from the analysis of the PPC and the interviews with the teacher educators. Finally, we present our considerations, resuming the main findings of the study and their implications for the initial education of teachers who teach mathematics.

Theoretical framework Situating WTP within the initial education of the teacher who teaches mathematics implies adopting a conception of language that spans formative processes and repositions writing as a constitutive dimension of teaching. From this perspective, WTP is no longer understood as a complementary requirement and begins to be analyzed as a formative competence, implied in the constitution of becoming a teacher who teaches mathematics.

To contextualize the discussion, we take as a reference the contributions expressed in Piano (2026), a research which, through a state of knowledge, evidenced how the WTP has been signified, mobilized, and investigated in the academic productions of the field. The results showed that the WTP has occupied space in research in mathematics education, albeit in a non-homogeneous way, sometimes as a didactic resource to favor mathematical learning, sometimes as a formative practice linked to institutional devices, and sometimes as reflective writing and teaching narrative. However, this set of research also revealed that WTP tends to appear as an intermittent practice, dependent on specific initiatives, without consolidating itself as a structuring dimension of the curricula.

Anchored in this panorama, the study presented here adopts a socio-interactionist perspective on language, according to which language is constituted as a social, historical, and interactive practice, produced and resignified in human relations. This conception distances itself from structuralist approaches that reduce language to a formal system of abstract rules, recognizing that its functioning is effective in situated discursive practices, through which people build meanings, organize their thinking, and constitute themselves socially (Bronckart, 1999).

From this perspective, language does not occupy a neutral place in human activities, but acts as a structuring element of social and cognitive life. Meaning is not given in advance but constructed in interaction, shaped by historical, social, institutional, and ideological conditions (Bronckart, 1999). In the field of mathematics education, different studies show that the processes of mathematical signification are mediated by language, argumentation, explanation, and communication of ideas (Sfard, 2008).

It is in this context that the teacher's performance in multiple discursive spheres is understood. Discursive spheres are understood as the social and institutional contexts in which language organizes actions, produces meanings, and mobilizes specific roles, purposes, and genres (Bronckart, 1999). This notion reinforces that teaching is a discursive practice and that writing actively participates in its constitution.

The centrality of language is also evident when considering the text as a basic unit of human communication. According to Marcuschi (2008), the text involves intentionality, interlocution and conditions of production and circulation, and can materialize both in the oral and in the written modalities. Its textuality stems from pragmatic, discursive, and cognitive properties, such as coherence, cohesion, informativity, situationality and intertextuality, which vary according to the communicative purposes and social practices in which they are inserted.

This understanding is articulated with the concept of textual genre, understood as a form of linguistic action that is socially recognized and historically situated (Bronckart, 1999). Genders organize communication and reflect the social practices in which they circulate. In the context of initial teacher education, the genres mobilized in teaching degree courses express conceptions of education and influence the ways of understanding teaching, learning, and knowledge.

In this scenario, WTP is understood as a social and constitutive practice of teacher education (Piano; Bozelli, 2025). In the mathematics degree, the WTP favors the appropriation of academic, scientific, and pedagogical discourses and contributes to the construction of its own professional discourse. When writing about teaching, learning, and mathematical knowledge, the prospective teacher organizes pedagogical thinking, reflects on practice, and develops communicative skills essential to teaching (Piano, 2026).

Understood as a formative and professional competence, WTP can be analyzed from two articulated axes. The first refers to writing as a practice of reflection, authorship, and construction of teaching identity, mobilizing processes of self-analysis and resignification of the formative experience. The second axis concerns writing as a discursive practice linked to the teaching and learning of mathematics, involving conceptual explicitness, argumentation, communication of ideas, and the production of mathematical narratives that are endorsable in school contexts (Piano, 2026). These axes interpenetrate: reflective writing mobilizes mathematical meanings, and mathematical writing carries formative and identity dimensions when calling the prospective teacher to position themselves and build authorship in professional language.

Although recognized in the legal and pedagogical discourse, the WTP still occupies a secondary place in initial education. Nogaro, Nogaro, Porto e Porto (2019) highlight that the historical privileging of reading at the expense of writing produces gaps that are reproduced in teacher education programs, compromising pedagogical reflection and the communication of teaching knowledge. In mathematics teaching, this fragility is intensified when writing is perceived as a complementary task, dissociated from the demands of teaching.

By defending writing as a social practice, Kleiman (2013) helps shift the WTP from a technical conception to a dialogical understanding, one marked by interaction, authorship, and the circulation of meanings. Writing implies insertion in discursive communities and dialogue with academic, school,

and everyday knowledge. When articulated with the specifics of school mathematics, the WTP can serve as didactic mediation, investigation of practice, and elaboration of pedagogical proposals.

However, the predominance of orality in mathematics courses tends to make the role of writing in the construction of knowledge and in the resignification of formative experience invisible. Parisotto (2011) warns that this trend reinforces the fragmentation between mathematical knowledge and pedagogical knowledge by limiting opportunities for problematization, argumentation, and planning. In this scenario, the absence of regular writing practices can foster insecurity and resistance, leading undergraduates to avoid producing texts.

Nóvoa, Nóvoa, Marcelino e Ramos do Ó (2012) emphasize that fear of writing stems from a lack of incentive and the absence of an institutional writing culture. Without experiencing the WTP as a formative competence, prospective teachers fail to recognize that writing is also a way of thinking and attributing meaning to the lived experience.

Machado (2008) points out that there is no pedagogical knowledge without the systematic use of writing, and reinforces that learning to write requires continuous, situated, and meaningful practices. Recognizing the WTP as a structuring dimension of teacher education implies assuming an institutional commitment to the construction of a writing culture, transversal to the curriculum, present in school subjects, practicum, research, and extension (Nogaro; Porto; Porto, 2019).

Promoting the WTP in the mathematics degree means writing from experience with mathematics and teaching, producing discourses that articulate conceptual understanding, pedagogical mediation, and professional positioning. Thus, to educate teachers also means educating people who act socially through texts, such as planning, records, assessments, reports, explanations, arguments, and narratives, which are typical of the teaching profession (Bronckart, 1999). Consolidating the WTP as a longitudinal and institutionalized practice is a condition for a more reflective, investigative, and authorial formation, capable of moving the prospective teacher from the place of reproducer of prescriptions to that of a person who thinks, writes, means, and transforms.

2. Methodological trajectory

The study is part of qualitative research of a documentary and empirical nature, with an interpretative orientation, derived from a doctoral thesis. The qualitative approach allows for the interpretation of conceptions and formative processes, including curriculum documents and teaching enunciations, as socially and historically situated productions, thereby enabling examination of tensions and displacements between prescribed curriculum and formative practices (Flick, 2009).

The corpus of the study consisted of two complementary sources, articulating the prescriptive curriculum level and the level of teachers' formative conceptions: (i) the Pedagogical Project of the Course (PPC) of the mathematics teaching degree of the Federal University of the South and Southeast of Pará (Unifesspa), campus Marabá, approved in 2024; and (ii) semi-structured interviews with three teacher educators of the course.

The PPC, prepared in light of CNE/CP Resolution n. 2/2019 (Brasil, 2019), in force at the time of its construction, was submitted to a full and repeated reading, focusing on the fundamentals of teacher education, course objectives, graduate profile, and expected skills, especially communicative ones. Explicit mentions of written textual production were considered—such as writing, textual production, written communication, reports, records—and implicit mentions, identified in enunciations that presuppose textual practices in the exercise of teaching—systematizing, elaborating, investigating, producing materials, recording. This procedure made it possible to examine the place assigned to the WTP in the prescribed curriculum, distinguishing stated formative expectations from its effective curriculum explicitness.

At the empirical level, ten teachers were invited, of whom three agreed to participate, resulting in a sample through voluntary participation, compatible with the interpretative qualitative approach (Flick, 2009). The participants work in different nuclei of the course—mathematics, mathematics education, and education—which made it possible to apprehend different conceptions about WTP. To ensure anonymity, fictitious names were used: *Professor João, Professor Paulo, and Professor André.*

The interviews were conducted individually, recorded with consent and fully transcribed. Although the complete script integrates the doctoral research that gave rise to this article, in this excerpt, questions 2 and 6 were mobilized exclusively, as they dialogue directly with the objective of the study, as systematized in Chart 1.

Chart 1 – Interview questions mobilized in the article

Code	Question
Q2	Among the competencies listed in the PPC, one of them is "knowing how to communicate in writing with clarity and precision". What do you understand by this competence and how has it guided the planning and development of the subjects under your teaching?
Q6	In your view as an educator of teachers who will teach mathematics, to what extent does writing play a formative role and to what extent is it exercised as a bureaucratic requirement provided for in the PPC?

Source: Prepared by the authors.

The constitution of the data was based on triangulation between the curriculum document and teaching conceptions, allowing for the interpretation of the meanings attributed to written textual production in initial education and the analysis of tensions between curriculum prescription and possible formative practices.

Data analysis was conducted according to interpretative qualitative guidance (Flick, 2009), comprising the WTP as a situated formative competence, crossed by conceptions of teacher education and curriculum rationalities. We did not seek to quantify occurrences, but to interpret the meanings attributed to written textual production, considering the tensions between the prescribed curriculum and the teacher educators' conceptions.

The analytical process involved three articulated movements: (i) in-depth reading of the PPC and the interviews; (ii) identification of utterances and nuclei of meaning related to the WTP; and (iii) interpretive organization of these nuclei within the analytical category mobilized in this article. The thematic analysis showed convergences, displacements, and tensions between curriculum prescription and teaching conceptions.

In dialogue with the understanding that the formative processes are not reduced to normative readings of the curriculum (Fiorentini; Lorenzato, 2006), we built the matrix presented in Chart 2, explaining the articulation between the category of analysis, the aspects examined in the PPC and the questions of the interview.

Chart 2 – Analysis matrix

Category of analysis	Aspects analyzed in the PPC	Focus of interview questions
WTP as a formative competence: curriculum prescriptions and conceptions assigned by teachers	i) Writing as a competency prescribed in the PPC; ii) Writing as a desired formative dimension; iii) Writing as a constituent of the teaching professional identity.	Q2: Mobilization of the "writing"competence in the planning of school subjects; Q6: Writing as a formative practice or bureaucratic requirement in the PPC.

Source: Prepared by the authors.

This articulation guides the analysis presented in the following section, in which we discuss how written textual production is configured as a formative competence, or reduced to a bureaucratic requirement, in the context investigated.

The study observed the ethical principles of the human and social sciences. The documentational analysis involved an institutional document in the public domain, not requiring submission to the Ethics Committee, according to CNS Resolution No. 510/2016 (Brasil, 2016), although it was conducted with interpretative rigor (Gil, 2008).

The interviews were conducted with the approval of the Ethics Committee and with the signing of the Term of Free and Informed Consent, ensuring voluntariness, anonymity, and confidentiality. The interpretation of the testimonies considered them situated discursive productions, seeking to problematize formative tensions without exposing the participants individually.

3. Results and discussions

This section presents the results of the analytical approach developed in this article, which focuses on written textual production (WTP) as a formative competence in the initial education of the teacher who teaches mathematics. The section is organized around the analytical axis WTP as a formative competence: curriculum prescriptions and conceptions assigned by teachers, built through the articulation between the Pedagogical Project of the Course (PPC) and the interviews with teacher educators.

This axis guides the reading of two complementary movements: (a) the curriculum prescriptive level, in which the PPC states expectations of teacher education and gives place to the WTP as a formative competence; and (b) the level of teacher conceptions, in which teachers signify writing in the daily life of the teaching degree, evidencing disputes of meaning and different understandings about their role in the constitution of the teacher who teaches mathematics.

3.1 WTP: curriculum prescriptions and conceptions assigned by teachers

The empirical field of the research is the mathematics teaching degree course of the Federal University of the South and Southeast of Pará (Unifesspa), campus of Marabá/PA, whose origin is linked to the process of internalization of higher education in the Amazon and the creation of the university in 2013. The course was consolidated on the Marabá campus, initially linked to the Federal University of Pará (UFPA), playing a strategic role in teacher education for the south and southeast of Pará, regions marked by educational inequalities and a lack of qualified teachers.

In this context, the Pedagogical Project of the Course highlights the need to articulate mathematical education, pedagogical foundations, and social commitment, while facing challenges in mathematics teaching through contextualized methodologies and the use of digital technologies. Among the expected formative skills, communicative competence stands out, especially written expression, whose effectiveness depends on how textual production is incorporated and valued in the course's formative practices.

The analysis of the PPC reveals that written textual production occupies a place simultaneously recognized and little operationalized in the formative proposal of the teaching degree in mathematics at Unifesspa. The document makes writing explicit as both a desirable competence and an institutional requirement. However, it tends to link it primarily to formal academic products associated with research, assessment, and documentation of the formative path. This configuration shows a double inscription of writing in the curriculum, in which it appears as a stated formative principle, but predominantly materializes as a product to be delivered, reviewed, or certified.

From a normative point of view, the PPC makes explicit that, among the competencies and skills of the prospective teacher, they require "the ability to express themselves in writing and orally with clarity and precision" (Universidade Federal do Sul e Sudeste do Pará, 2024, p. 16). This formulation attributes professional competence to writing ability and suggests its constitutive character in

the education of the teacher who teaches mathematics. However, although recognized as a structuring competence, writing is not accompanied, in the document, by more detailed indications about curriculum devices, systematic practices, or pedagogical strategies that ensure its longitudinal development throughout the teaching degree.

This tension between enunciation and operationalization becomes more evident when examining, in an articulated way, the different structuring elements of the PPC. Writing appears to be associated with the declared competences, the evaluation instruments, the investigative processes, and the elaboration of the final paper (end-of-course paper), but predominantly within the scope of formal products. To highlight this configuration, we present Chart 3, which systematizes the main references to written textual production in the analyzed document.

Chart 3 – PPC prescriptions related to WTP

Dimension in the PPC	Excerpts from the document
Competencies and skills	"Having the ability to express themselves in writing and orally with clarity and precision." (p. 16)
Course objectives	"To qualify research mathematicians, providing them with a solid background in mathematics and mathematics education, preparing them for continuing education and postgraduate studies." (p. 15)
Assessment	"Reports, research, written essay test, observation as an investigative tool, reflective diary, theoretical production." (p. 45)
End-of-Course Paper	"The End-of-Course Paper will be prepared in the form of a monograph or complete article [...] the assessment will include an oral presentation to a board constituted by professors." (p. 24)

Source: Prepared by the authors.

As shown in Chart 3, writing appears recurrently in the PPC, especially linked to one's ability to express oneself in writing and orally with clarity and precision, to academic production and to formal assessment instruments. Although announced as a graduate competence, this formulation is not accompanied by pedagogical guidance explaining how this competence will be developed throughout the course.

In the objectives, when proposing to *educate researcher-mathematicians*, the document implicitly associates writing with the academic-scientific dimension and the continuity of postgraduate studies, without directly explaining pedagogical, reflective, or didactic practices articulated to the education of the teacher who teaches mathematics. In the evaluation processes, writing is mobilized through reports, research, written essay tests, reflective diaries, and theoretical production, predominantly assuming an instrumental and evaluative character.

WTP acquires greater concreteness in the End-of-Course Paper, defined as an opportunity for "situations of investigation, reflection and theoretical and practical deepening on mathematics and/or mathematics teaching" (Universidade Federal do Sul e Sudeste do Pará, 2024, p. 24), materializing as a monograph or article. Similar movement occurs in the supervised practicum, structured in stages that culminate in the preparation of a scientific article and final report, with submission to events and journals. Thus, the WTP is recognized in the curriculum, but concentrated in academic genres and culminating moments of the formative path, as systematized in Chart 4.

Chart 4 – WTP in the supervised practicum according to the PPC

Stage of the Practicum	Writing requirement
Planning and research	Instrument development (scripts, interviews, questionnaires)
Systematization	Partial and research reports
Assessment and culmination	Scientific article and final practicum report
Disclosure	Submission to events and journals

Source: Prepared by the authors.

Although this architecture attributes centrality to WTP in the Practicum, the prioritized genres are predominantly academic, especially articles and reports, reinforcing the association of WTP with formal and culminating products of the formative path. It is at this point that the data from the interviews expand the analysis, by showing how the teacher educators mean writing beyond what is prescribed.

3.2 Analysis of teacher educators' statements

The statements produced by the participants help us understand how the written textual production is signified, mobilized and implemented in the formative practices in the context of the teaching degree in mathematics. Thus, the analysis presented below broadens the investigative look by revealing conceptions, tensions, and intentionalities that do not always appear explicitly in institutional documents.

Professor João understands WTP as a structuring practice of education, stating that "*the entire educational process is largely anchored in textual construction*". For him, written communication "*is capable of socializing knowledge, building new knowledge, transmitting information*"and, even in an exact science, "*Mathematics cannot do without the full mastery of written and clear language*". Such a statement challenges a strictly instrumental view of writing and repositions it as a constitutive dimension of the very production and communication of mathematical knowledge, thereby attributing a relevant role to textual production in mathematics as well.

In order to systematize these conceptions, we present Chart 5, in which the main dimensions mobilized by Professor João when dealing with writing in his practice and in relation to the PPC are organized.

Chart 5 – Conceptions attributed to WTP – Professor João

Dimension	Statements
Writing as a formative basis	"The entire educational process is largely anchored in textual construction."
Mathematics and language	"Mathematics [...] cannot do without the full mastery of written and clear language."
Pedagogical practice	"Students are led to produce articles, experience accounts, reports, reflective records, and essays."
Writing in the PPC	"In PPC, writing is [...] in the construction of reports and the End-of-Course Paper."

Source: Research data, 2025.

As shown in Chart 5, WTP is conceived as the formative basis of the educational process, understood by Professor João as a structuring element of learning. By emphasizing the inseparability between mathematical knowledge and mastery of written language, he recognizes it as a necessary condition for mathematics itself. In pedagogical practice, he states that licensees are expected to produce "*articles, experience accounts, reports, reflective records, and essays*"(Professor João, 2025).

The mention of such textual production evidences the circulation of different genres in the formative process, reinforcing writing as a social, authorial, and situated practice (Kleiman, 2013), and as a means of systematizing and reflecting on the teaching experience (Freitas, 2006). That diversity points to writing as a pedagogical and discursive action through which the licensee organizes meanings and positions themselves in their own formation (Bronckart, 1999).

By recognizing that, in the PPC, writing appears formally linked to the preparation of reports and to the Final Paper, the teacher evidences its prescriptive and academic character, confirming the tendency of the curriculum to situate it as a bureaucratic and evaluative requirement, more associated with compliance with institutional protocols than with a transversal practice (Parisotto, 2011). However, by mobilizing writing as a space for reflection and formative follow-up, Professor João stresses this delimitation, approaching the understanding of WTP as a procedural and constitutive practice of

teacher education (Freitas, 2006), showing that the educator's action can expand the restricted place assigned to writing in the curriculum document. This displacement shows that although the PPC assigns writing a restricted place, the teacher educator's action can expand it, resignifying writing beyond its bureaucratic and evaluative functions.

Professor Paulo, in turn, attributes to writing a conception linked to the logical organization of thought. He believes writing means structuring ideas, introducing a problem, developing the resolution and concluding the reasoning, establishing a direct analogy between textual writing and mathematical problem solving. This approach reveals a conception aligned with the rationality of the exact sciences, in which the text is understood as a logical chain, akin to a mathematical path.

To explain these conceptions, we present Chart 6.

Chart 6 – Conceptions attributed to WTP – Professor Paulo

Dimension	Statements
Writing and logic	"Writing is seeing how the person organizes their ideas."
Writing and mathematics	"Solving a problem is like writing a text."
Formative gap	"In graduation [...] in the written question, the textual, I did badly."
Writing as a social basis	"Textual production is at the heart of our social formation."

Source: Research data, 2025.

As shown in Chart 6, WTP is initially conceived as an expression of the organization of ideas and an indicator of clarity of thought. By stating that "*solving a problem is like writing a text*", Professor Paulo establishes a direct association between writing and logical-mathematical procedures, bringing it closer to a linear argumentative model typical of mathematics and physics, areas in which he works.

This understanding reinforces writing as an instrument for ordering reasoning and for explaining procedures, and it is strongly linked to the formalism of these areas. In this context, textual production tends to function as a support for conceptual systematization, with a lower incidence on its broader reflective and formative dimension, an aspect problematized by Nogaro, Nogaro, Porto e Porto (2019) and Antiqueira and Machado (2019).

When recalling his academic trajectory, Professor Paulo, however, notes a formative gap: despite mastering mathematical content, he "*did badly*" in undergraduate textual production. Such recognition strains the association between logical mastery and written competence, showing that initial education did not ensure continuous and systematized writing practices. Although Professor Paulo recognizes that "*textual production is at the heart of our social formation*", this understanding did not materialize consistently in his initial education, that is, in his teaching degree, being moved to graduate school, in which he claims to have begun to develop such competence. The testimony thus indicates a critical point of the analysis. By privileging writing as an expression of logic, Professor Paulo's initial education did not explore his pedagogical and discursive dimension, reinforcing the hypothesis of the fragility of systematized WTP practices in the initial education of the teacher who teaches mathematics.

Professor André associates writing with continuing education, academic insertion and professional recognition of the teaching degree student. For him, allowing the licensee to write for publication and presentation at events generates a feeling of fulfillment of the formative role, as it evidences authorship and appropriation of the mathematical, academic and pedagogical discourse. By highlighting the practicum report as a formative milestone, the teacher emphasizes WTP as a space for articulation between oral and written discourse, signalling an advance in the teacher education process.

To explain the conceptions attributed to WTP by Professor André, we organized Chart 7, systematizing the main dimensions mobilized in his statements.

Chart 7 – Conceptions attributed to WTP – Professor André

Dimension	Statements
Writing and authorship	"Enabling the student to write to publish [...] gives a feeling of fulfilling the role of educator."
Writing and theory	"Writing must be with a theoretical contribution. Otherwise, it remains in the guessing."
Practicum and writing	"The report [...] shows that he can combine oral and written speech."
Writing and professional career	"It makes it possible to graduate with a master's degree and a doctorate in the future."

Source: Research data, 2025.

As shown in Chart 7, writing is initially understood as a practice of authorship and academic legitimation, as it is linked to publication, participation in events, and the circulation of knowledge produced by the licensee. In this sense, WTP appears as a symbolic and institutional recognition device, capable of inserting the prospective teacher in the formal spaces of scientific production, an aspect already pointed out as formative by Machado (2008) and by Nóvoa, Nóvoa, Marcelino e Ramos do Ó (2012), as they highlight writing as mediation for authorship and for the constitution of the teacher's academic trajectory.

By stating that "*writing must be based on a theoretical contribution. Otherwise, it is just guessing*", Professor André reinforces a conception of writing anchored in scientific rationality and academic normativity, highlighting the appreciation of theoretical rigor as a condition for textual production. If, on the one hand, this perspective helps avoid superficial productions, on the other hand, it can limit writing to specific academic formats. By restricting its legitimacy to the criteria of scientific validation and formal theoretical contribution, an institutionally recognized standard is consolidated, but the plurality of writing practices with formative potential is reduced, especially those aimed at pedagogical reflection and the elaboration of the teaching experience (Freitas; Fiorentini, 2008).

Regarding the Supervised Practicum, Professor André points out that the report is evidence of formative maturity, as it allows the licensee to "*combine oral and written discourse*". Such understanding broadens the meaning of writing by recognizing it as an articulating element of different ways of saying and understanding teaching practice, approaching a more integrative conception of the formative process. However, by explicitly associating writing with the possibility of "*graduating with a master's degree and a doctorate in the future*"and "*competing strongly for public notices, competitions, external selections after completing the course*", Professor André attributes a prospective and academic sense, projecting its centrality beyond the degree.

Thus, Professor André's statements reveal a simultaneously valued and selective conception of WTP, valued for its role in authorship, continuing education and professional recognition; selective because it is primarily associated with academic insertion and postgraduate studies. This configuration reinforces the need to problematize the place of WTP in teacher education, not only as preparation for future trajectories but also as a constitutive formative dimension of the teacher who teaches mathematics since their initial education.

3.3 Discussion

In summary, at the documentational level, the PPC establishes writing as a competence by defining, among the licensed's skills, the "ability to express themselves in writing and orally with clarity and precision". However, by detailing where this competence takes place, the text anchors it mainly in academic and evaluative products, such as end-of-course papers in the form of monographs or full articles, practicum reports and scientific articles at the end of their paths, in addition to instruments such as reports, research, written essay assessments, reflective diaries, and theoretical production. Thus, WTP is foreseen as a transversal axis, but operationalized, above all, in culminating moments and in historically legitimized genres in the university.

The interviews corroborate this finding and make it more complex. Professor João supports WTP as the basis of the educational process and recognizes its appearance in the PPC, producing a convergence between prescription and practice, in which writing is defended as formative, but gains visibility especially when it takes the form of an academic product. Professor Paulo, when associating clarity and precision with the logical organization of mathematical thinking, explains a formative gap by admitting that, in undergraduate studies, he mastered "*mathematical formality*" but was "*did bladly in terms of textual production*", in addition to recognizing that he uses few aspects of more general textual production in his practice. Professor André, on the other hand, attributes to WTP a formative and identity sense, linked to authorship and academic legitimation, but also explains the institutional ambivalence in: "*it is a bureaucratic requirement. But [...] the possibility of effectively expressing the thought*".

The triangulation between documents and interviews indicates that the PPC does not silence writing, but prescribes it as a competence and materializes it in curriculum devices. However, by privileging academic genres and culminating moments, it tends to leave open how writing will be built as a continuous, situated, and professional practice throughout education. Teachers, from different perspectives, recognize its relevance as the basis of the educational process, as the organization of mathematical reasoning, and as academic-professional authorship, but also admit that, in the absence of a systematic path of formative practices and genres, it can be reduced to bureaucratic demands.

The implications of this category lead to the need to deepen the analysis at the level of the lived curriculum, examining whether and how the PPC prescriptions materialize in the pedagogical school subjects and practices of the teaching degree. If at the normative level writing is a competence and a formative requirement, and if at the level of conceptions it is recognized as a relevant dimension, it is essential to investigate whether it remains concentrated on specific components or whether it is configured as a transversal axis that continuously contributes to the constitution of the licensee as a person linked to teaching.

In this sense, it is pertinent to articulate the elements evidenced in the documentational analysis and in the interviews. Chart 8 explains the convergences and tensions identified between the PPC prescriptive plan and the meanings attributed by the teacher educators to the written textual production, highlighting the displacements that emerge from this triangulation.

The systematization presented in Chart 8 allows us to affirm that there is no absence of writing in the PPC, but a specific form of presence. Written textual production is recognized as a competence and is legitimized institutionally, especially through consolidated academic genres. However, the analysis shows that its materialization as a continuous formative practice remains conditioned by teaching choices, the evaluative cultures of the subjects, and the curriculum spaces in which written genres are mobilized.

Chart 8 – Summary of the triangulation between PPC and teaching conceptions

Axis of analysis	PPC (prescription)	Teachers (assigned conceptions)	Identified tension
Writing as a competence	Express themselves in writing and orally with clarity and precision.	Recognized as a formative and organizing basis of thought.	Declared competence, but little detailed as to the modes of development.
Writing as a curriculum practice	Final paper, reports, scientific article, evaluative instruments.	Mobilized according to the style and area of teaching.	Concentration on culminating moments and academic genres.
Writing as a desired formative dimension	Linked to legitimate academic products.	Viewed as authorship, logic, identity, and professional projection.	Risk of reducing bureaucratic requirements without a systematic path.
Writing and teacher education	Provided for in the curriculum document.	Recognized as relevant, but not always continuously explored.	Distance between prescription and effective transversal practice.

Source: Prepared by the authors.

Thus, it is confirmed that WTP occupies a place simultaneously visible and tensioned in the mathematics teaching degree, being visible because it is prescribed and required and tensioned because its consolidation as a transversal pedagogical practice is not fully structured in the curriculum document. This result reinforces the need to advance the analysis of the prescribed curriculum and the conceptions underpinning the examination of the lived curriculum, investigating how and to what extent writing is effectively configured as a formative competence of the teacher who teaches mathematics.

4. Final considerations

The study presented in this article posed the following research question: How is written textual production (WTP) configured as a formative competence in the mathematics teaching degree, considering the prescriptions of the Pedagogical Project of the Course (PPC) and the teacher educators' conceptions? In line with this question, the objective was to analyze how WTP is configured as a formative competence in the curriculum of the mathematics teaching degree at Unifesspa, Marabá campus, articulating the PPC's prescriptive plans to the conceptions attributed by the teachers of the course.

At the documentational level, the analysis showed that the PPC formally recognizes writing as a competence of the licensed, especially when enunciating the ability to express themselves clearly and accurately in the written and oral modalities, in addition to linking it to evaluative, investigative practices, and to the end-of-course paper. However, this presence assumes a specific configuration in which WTP is declared as a formative principle, but little is detailed about the strategies, paths, and devices that ensure its longitudinal development. When materialized, it appears predominantly associated with formal academic genres—article, monograph, report—and culminating moments of the formative path, reinforcing its certifying and evaluative dimension.

At the level of teaching conceptions, the interviews confirm and, at the same time, tension the curriculum design identified in the PPC. Written textual production is understood as the basis of the educational process and a condition for the communication of mathematical knowledge, but it is also associated with the logical organization of thinking, approaching the rationality of the exact sciences. The triangulation between documents and interviews thus indicates that WTP is present, but in tension; that is, it is enunciated as a competence and materialized in curriculum devices, but still concentrated in academic genres and dependent on teaching initiatives, without fully consolidating itself as a transversal, continuous, and professionalizing practice.

Given this scenario, proposals emerge to consolidate WTP as a transversal axis of the initial formation. The first consists of explaining, in the PPC itself, a longitudinal writing plan, with articulated progression of genres, purposes, and levels of complexity throughout the course, shifting writing from the place of the final product to that of a continuing formative process. Another proposition refers to the systematic integration of WTP with the subjects of the specific and pedagogical nucleus, ensuring that writing is mobilized as a practice of conceptual explicitness, argumentation, didactic reflection, and communication of mathematical ideas. It is also recommended to create institutional monitoring devices, such as permanent writing workshops, shared formative rubrics, and feedback spaces, thereby contributing to the construction of a writing culture in the course.

It is noteworthy that the results presented must be understood in the light of the specific conditions of research production. The study focused on the analysis of a single CPP and the statements of three teacher educators, which does not allow broad generalizations about mathematics teaching degree courses. However, rather than producing statistical generalizations, the research sought to build analytical interpretations of the meanings attributed to written textual production in the investigated context. In addition, although the analytical path has been based on interpretative reading and triangulation between documents and interviews, we recognize that the detailing of certain movements of

the analysis can be deepened in future work, especially about the criteria for constructing the nuclei of meaning and the forms of interpretation of teachers' utterances.

Finally, the study opens the way for further investigations. The following stand out: the need to analyze the lived curriculum, examining how writing is effectively mobilized in the subjects; conducting intervention research that implements transversal writing paths and evaluates their effects on identity and professional knowledge; studies on the articulation between WTP and school mathematical discourse; comparative analyses between PPC from different institutions; and investigations on the education of teacher educators regarding the teaching and evaluation of writing.

By highlighting the tensions between curriculum prescription and teaching conceptions about written textual production, this research contributes to the field of mathematics education by placing language— specifically WTP—at the center of the initial education of the teacher who teaches mathematics. By problematizing WTP not as an instrumental resource, but as a formative competence constitutive of teacher identity and professionalism, the study expands the debate on the curriculum organization of teaching degrees. Thus, the understanding that educating mathematics teachers means educating individuals capable of producing, communicating, and transforming knowledge through writing is reinforced, strengthening knowledge production within mathematics education.

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