



## A literature review on the attractiveness of the teaching career in the mathematics teaching degree and other degrees

Uma revisão de literatura sobre a atratividade da carreira docente na Licenciatura em Matemática e em outras licenciaturas

Una revisión de la literatura sobre la atracción de la carrera docente en la Licenciatura en Matemáticas y en otras licenciaturas

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### Abstract

This study describes and systematizes knowledge on the attractiveness of the teaching career in mathematics teaching degree programs and in other degree programs, based on research defended in Brazilian *stricto sensu* graduate programs. From a bibliographic survey in the Brazilian Digital Library of Theses and Dissertations (BDTD), 167 works on the subject were identified, of which 14 composed the analyzed corpus. The qualitative analysis organized the studies into three groups: research with undergraduates exclusively in mathematics; research with mathematics students and students from other courses; and research with undergraduates from courses other than mathematics. The results show that teaching choices are influenced by monetary factors, such as remuneration, and by non-monetary factors, such as vocation and social recognition, highlighting the scarcity of studies and the need for further investigation.

**Keywords:** Literature review. Teaching career. Attractiveness of the teaching career.

### Resumo

Este estudo descreve e sistematiza o conhecimento produzido sobre a atratividade da carreira docente na Licenciatura em Matemática e em outras licenciaturas, com base em pesquisas defendidas em programas brasileiros de pós-graduação *stricto sensu*. A partir de levantamento bibliográfico na Biblioteca Digital Brasileira de Teses e Dissertações (BDTD), identificou-se 167 trabalhos sobre o tema, dos quais 14 compuseram o *corpus* analisado. A análise qualitativa organizou os estudos em 3 grupos: pesquisas com licenciandos exclusivamente em Matemática; com estudantes de Matemática e de outros cursos; e com licenciandos de diferentes cursos, excetuando-se Matemática. Os resultados mostram que a escolha pela docência é influenciada por fatores monetários, como remuneração, e por fatores não monetários, como vocação e reconhecimento social, evidenciando a escassez de estudos e a necessidade de ampliar investigações.

**Palavras-chave:** Revisão de literatura. Carreira docente. Atratividade da carreira docente

### Resumen

Este estudio describe y sistematiza el conocimiento producido sobre el atractivo de la carrera docente en la Licenciatura en Matemáticas y en otras licenciaturas, basándose en investigaciones defendidas en programas brasileños de posgrado *stricto sensu*. A partir de una revisión bibliográfica en la Biblioteca Digital Brasileña de Tesis y Disertaciones (BDTD), se identificaron 167 trabajos sobre el tema, de los cuales 14 formaron parte del *corpus* analizado. El análisis cualitativo organizó los estudios en tres grupos: investigaciones con estudiantes de licenciatura exclusivamente en Matemáticas; con estudiantes de Matemáticas y otros cursos; y con estudiantes de licenciatura de diferentes cursos, excepto Matemáticas. Los resultados muestran que la elección de la docencia está influenciada por factores monetarios, como la remuneración, y por factores no monetarios, como la vocación y el reconocimiento social, lo que pone de manifiesto la escasez de estudios y la necesidad de ampliar las investigaciones.

**Palabras clave:** Revisión de literatura. Carrera docente. Atractividad docente.

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## 1. Introduction

This study, developed within the scope of a master's research literature review, aims to describe and systematize the knowledge produced on the attractiveness of the teaching career in mathematics teaching degree programs and other degree programs, based on research conducted in Brazilian *stricto sensu* graduate programs. To this end, it is based on data obtained from a bibliographic survey carried out at the Brazilian Digital Library of Theses and Dissertations (BDTD), which identified 167 dissertations and theses related to the theme, of which 14 were selected to compose the *corpus* of analysis of this article. These studies focused on the 2010–2018 period, which yielded the largest number of studies identified in the preliminary searches, indicating greater academic production on the subject.

Given the teacher shortages and the widely recognized low attractiveness of the teaching profession (Helm *et al.* 2025), particularly in areas such as mathematics (Costa Junior *et al.* 2024), it is important to examine how Brazilian academic production has investigated this phenomenon within the context of initial teacher education. Preliminary data indicate that knowledge produced about the attractiveness of the teaching career in mathematics teaching degree programs and other courses is dispersed and often poorly articulated to the specificities of mathematics education (Moreira *et al.* 2012). There is a lack of studies that summarize and identify trends, theoretical approaches, and that investigative gaps in this field (Masson, 2017). Thus, this study seeks to contribute to deepening the debate and strengthening teacher education policies, particularly for mathematics teachers.

To systematize knowledge on the subject, we will focus on our results, organizing the work into three categories: (i) research carried out exclusively with participants from a mathematics degree; (ii) research carried out with subjects from a mathematics degree and other courses; (iii) studies carried out with undergraduate students, without being from a mathematics degree. In the end, we will make some considerations regarding trends, shifts in emphasis, and discernible orientations in the analyzed studies.

We present below the assumptions that guided this work; subsequently, we detail the identification and analysis of the selected studies. We sought to characterize them by providing an overview of production conditions and selected methodological aspects in the section on research trends.

## 2. The attractiveness of the teaching career

Research on the attractiveness of the teaching profession can inform the development of policies and curricula that are better aligned with the profession's real demands. In the current context, this importance is underscored by the global crisis of teacher shortages affecting several countries, as evidenced in studies by Helm *et al.* (2025) and Symeonidis, Guberman e Cooper (2025).

According to Helm *et al.* (2025), this shortage is not a new challenge; it is a persistent and growing problem, driven by factors such as demographic changes, pensions, increased student enrollment, unfavorable working conditions, and a negative image of the profession. Symeonidis, Guberman e Cooper (2025) further note that the unequal distribution of qualified teachers, particularly in disadvantaged areas, also contributes to widening educational equity gaps.

In view of this problem, the attractiveness of teaching has been the subject of research, especially with regard to the factors that influence the choice and permanence in the profession (Gatti; Barretto, 2009; Masson, 2017). In this study, it is understood as the set of factors that influence an individual's perceptions and, thus, their choice to enter and remain in this career. This decision is influenced by multiple factors, including vocation, working conditions, social recognition, and prospects for professional growth (Britto; Waltenberg, 2021; Nóvoa, 2017).

In a study on the attractiveness of the teaching career in Brazil from the perspective of high school graduates, Gatti e Barretto (2009), examined the factors they cited to justify their attraction to or aversion to teaching. The research was motivated by concerns about declining demand for teaching and the shortage of well-trained teachers. According to the author, the attractiveness of the teaching career lies in its ability to arouse young people's interest; its absence is perceived as a rejection of the profession. This attractiveness (or its absence) is influenced by young people's perceptions of "being a teacher" and teaching work, which can be contradictory.

Masson (2017) addresses the appreciation of teachers in Brazil as a complex and comprehensive theme. It relates attractiveness to adhering to the profession. For Masson (2017), valorization (which encompasses attractiveness and permanence) is a right that is realized through a legal mechanism called career, involving teacher education, working conditions, and wages, to guarantee the quality of education and the worker's life. Attractiveness and permanence depend on essential requirements, such as wages. The professional choice, linked to the first factor, extends beyond subjective decision-making and encompasses economic and sociocultural conditions. Permanence, on the other hand, is justified by affective aspects (approval of the profession, belief in education, personal fulfillment), and is linked to professional appreciation through better salaries, since, according to the author, remuneration has a relevant weight for these aspects, as well as identification with the profession and its social recognition.

The Instituto Península report (Instituto Península, 2021) also discusses the attractiveness of the teaching career in Brazil, focusing on Brazilian students' views of teaching, similar to those developed by Gatti e Barretto (2009). Attractiveness is related to how young people perceive the work environment and teachers' social role, as well as to a salary that would convince them to follow the profession.

Souto e Paiva (2013) carried out research on the profile and attractiveness of the teaching career among graduates of the mathematics teaching degree course at UFSJ. They define the phenomenon of attractiveness—or, more precisely, low attractiveness—as the ability of a career to attract and retain professionals. Also within the scope of mathematics teacher education, Costa Junior *et al.* (2024, p. 12) argue that the "expansion of the number of courses, formative institutions, and the creation of programs to strengthen undergraduate degrees (Prodocência, PIBID, and Pedagogical Residency) in the last decade was important to minimize, but did not solve the problem of the lack of teachers in the country."

Research by Helm *et al.* (2025) and Symeonidis, Symeonidis, Guberman e Cooper (2025) portrays the global challenge of teacher shortages, focusing on how different countries and educational systems address the situation, particularly in Europe. In addition, they discuss the causes of this problem, such as demographic changes, working conditions, and the attractiveness of the teaching pro-

fession (Helm *et al.* 2025). Given this scenario, policymakers seek urgent answers, which sometimes involve the reassessment of traditional formative pathways, such as the creation of shorter programs or hiring professionals from other areas (Symeonidis; Guberman; Cooper, 2025).

Beyond the quantitative shortage of teachers, we observed a qualitative shortage, characterized by the absence of professionals with adequate preparation for the subjects they teach (Gatti; Barretto, 2009). The *Resumo Técnico do Censo Escolar da Educação Básica 2024* (Brasil, 2025) shows that, at different levels and in several curriculum components, a significant proportion of classes are conducted by teachers without the required specific qualification. This scenario is assessed by the *Indicador de Adequação da Formação Docente* [Indicator of Adequacy in Teacher Education], which identifies critical situations, such as Religious Education in the final years of elementary school, in which only 12.9% of classes are taught by teachers with adequate education. Equally concerning results are observed in Sociology in high school (37.1%) and in Foreign Language in the initial years of elementary school (38.5%). In addition, the document notes that the proportion of subjects taught by duly qualified professionals is lower in the final years of elementary school than in the initial years, a pattern exacerbated in the North and Northeast regions, as well as in parts of the Midwest of Brazil.

In this study, we turn our gaze to academic production on the attractiveness of the teaching career, in the form of theses and dissertations developed in Brazilian *stricto sensu* graduate programs, seeking to delimit the factors that impact the attractiveness of the teaching career, considering both the reasons that motivate undergraduates to enter and remain in the profession and the challenges that lead to withdrawal from teaching.

### 3. Constitution of the *corpus*

This study aims to establish a state of knowledge (Romanowski; Ens, 2006) on the attractiveness of the teaching career, seeking to understand the factors that influence the choice for and adherence to the profession. To this end, we conducted a bibliographic survey in the *Biblioteca Digital Brasileira de Teses e Dissertações* (BDTD) [Brazilian Digital Library of Theses and Dissertations] to identify research addressing this theme. The number of searches totaled eight, due to the different terms and their combinations used to locate theses and dissertations that addressed the attractiveness of the teaching career, as well as those that identified factors influencing the teaching career or its abandonment. The searches yielded 167 works, including dissertations and theses. In Table 1, we present a summary of the searches, including the number of results obtained for each.

After excluding the duplicate works identified by their titles, we began the selection process by reading the respective abstracts. We sought those that (1) addressed the attractiveness of the teaching career, as well as those that (2) pointed out influencing factors in the choice of the teaching career or its abandonment. Studies that did not meet these two criteria were excluded.

Fourteen works resulted from this process; together, they make up the *corpus* analyzed in this literature review: nine dissertations and five theses. Studies that focused on degrees other than mathematics were also included. This decision was made due to the limited number of works that addressed the context of the teaching degree in mathematics: Rodrigues (2012), Silva (2012) and Pucetti (2016). Mo-

**Table 1** – Terms used in searches and results obtained

Search number	Search field	Term(s) used	Number of jobs
1	Title	<i>Mathematics</i>	5
	Other fields	<i>degree, attractiveness, career</i>	
2	all fields	<i>math, degree, attractiveness, and career</i>	14
3	all fields	<i>career, teacher, degree student, and future</i>	32
4	all fields	<i>career, teacher, degree student, future, and teaching degree.</i>	23
5	all fields	<i>teaching, dropping out, and teaching degree.</i>	22
6	all fields	<i>teaching, dropping out, teaching degree, and student</i>	13
7	all fields	<i>teaching, dropping out, teaching degree, and student</i>	20
8	all fields	<i>initial teacher education, career, mathematics, and teaching degree</i>	38

**Source:** Prepared by author (2025).

reover, understanding the attractiveness of the teacher's career in other curricular components beyond mathematics can contribute to a broader examination of this phenomenon across all basic compulsory education teachers in the Brazilian context, including those of the specific subject in this spectrum.

The works that composed the *corpus* of this study were organized according to the course in which the participants were enrolled or from which they graduated, namely:

1. Research carried out exclusively with participants from a mathematics degree: [Rodrigues \(2012\)](#), [Silva \(2012\)](#) and [Pucetti \(2016\)](#), totaling three studies.
2. Investigations carried out with participants from a mathematics degree and other courses: [Souza \(2010\)](#), [Leme \(2012\)](#), [Portela \(2018\)](#), [Melo \(2018\)](#) and [Tarábola \(2018\)](#), a total of five studies..
3. Studies developed with undergraduate students, outside the teaching degree in mathematics: [Kussuda \(2012\)](#), [Martin \(2016\)](#), [Souza \(2015\)](#), [Coelho \(2017\)](#), [Silva \(2018\)](#) and [Souza \(2018\)](#), encompassing six studies.

We will present below an overview of the production conditions of these 14 works. In the later section, there will be a summary of the results of these studies with regard to the attractiveness of the teaching career.

#### 4. Research trends on the attractiveness of the teaching career in Brazil

Taking as reference the 14 studies (nine academic master's dissertations and five doctoral theses) that make up the *corpus* of this research, it is possible to affirm that, despite the relevance of the theme, the attractiveness of the teaching career is not central to Brazilian academic investigations in the field of education. The focus is on other themes related to teacher education, such as professional

identity, as explored in studies relacionadas à formação docente, como a identidade profissional, explorada no estudo de Souza (2015), and the supervised practicum, as addressed in Pucetti (2016).

According to Romanowski (2013), research on teacher education reflects an apprehension about evaluating the work produced in both local and international contexts, thereby making it possible to identify contemporary trends, priorities, and problems. This movement aligns with the demands of the field, without nullifying the particularities of each context. Teacher education is understood as the basis for the professionalization and improvement of practice, guiding research toward effective change rather than merely serving as a theoretical foundation. Among the common points highlighted by Romanowski (2013), are the characterization of teachers' profiles, research on professional practice and working conditions, studies of teacher development and professionalization, and systematic analyses of the theoretical and methodological assumptions that underpin the field.

Thus, research on the attractiveness of the teaching career in Brazil, although still underdeveloped in teacher education, is part of the broader trends in teacher education, as described by Romanowski (2013). The 14 studies analyzed present aspects of teachers' profiles, working conditions, and motivations for entering and remaining in teaching, reflecting, in part, the contemporary priorities of the field. At the same time, the limitation of the theme as far as centrality is concerned demonstrates the persistence of gaps in Brazilian research, highlights the need to expand and deepen studies that consider both contextual factors and structural and subjective dimensions of the teaching profession, and aligns with Romanowski (2013) concerns about the synchronicity between local and universal demands in teacher education.

Regarding production conditions, the studies analyzed were conducted in graduate programs at seven Brazilian higher education institutions, distributed across three states, São Paulo (SP), Minas Gerais (MG), and Paraná (PR), and the Federal District (DF). Among these institutions, we observed a concentration of research in universities in the Southeast region, which houses 10 of the 14 works analyzed, a distribution that may be related to the greater presence of *stricto sensu* graduate programs in this region (Brasil, 2022). The research was guided by 11 professors, and only two supervised more than one study in the *corpus*. This suggests that research on the attractiveness of the teaching career remains dispersed across institutions, without a consolidated thematic focus within academic centers.

The analyzed works were completed from 2010 to 2018; the period had not been previously defined, but emerged from the selected studies, according to the search criteria, i.e., they should: (1) address the attractiveness of the teaching career, and (2) point out influencing factors in the choice of the teaching career or its abandonment. While we noted a concentration in 2018, when five works were defended, we did not identify productions between 2012 and 2015. The studies are located in the second decade of this century, which can be interpreted as an indication of the academic community's concern with factors related to the attractiveness of the teaching career, in response to the lack of interest in the profession, as discussed by Gatti e Barretto (2009). However, this movement has not yet been established, as we did not locate studies in the present decade, although the problem of a shortage of teachers remains persistent in Brazilian education.

The 14 analyzed studies had, as participants, mostly students in teaching degree courses, but some also included graduates (Coelho, 2017; Rodrigues, 2012; Silva, 2012). In total, the analyzed works

involved students and graduates from 11 public and private universities. Most studies were conducted within a single institution, reinforcing the trend toward localized analyses and the absence of larger investigations into the attractiveness of teaching in regions or across the country (Gatti; Barretto, 2009).

For data collection in the analyzed studies, questionnaires and interviews were the most commonly used instruments, in seven and ten studies, respectively. The authors' methodological choice reflects their concern to understand participants' experiences and perceptions. It enables detailed analysis of the factors that influence the decision to pursue (or not) a teaching career, as recommended by Yin (2016).

In summary, the analysis of the 14 studies indicates that the attractiveness of the teaching profession is not yet a central theme in Brazilian education research. The concentration of studies in institutional and regional contexts, as well as the predominance of localized investigations, suggests that academic production on the subject remains fragmented, lacking greater articulation across the scope of knowledge construction (between programs and research groups) and a broader view of the phenomenon, particularly at the national level. However, the recurring participation of undergraduate and graduate students, combined with the predominant use of interviews and questionnaires, indicates a sustained effort to understand perceptions, expectations, and experiences directly linked to the choice and permanence in teaching. These trends indicate a discreet but significant movement toward incorporating teaching attractiveness as a relevant factor for understanding the profession's challenges in Brazil, while reinforcing the need to broaden the scope of inquiry to encompass both subjective and structural factors that shape the teaching career in the contemporary context.

## 5. Research trends on the attractiveness of the teaching career in Brazil

The analysis of the studies comprising the corpus was conducted by reading the selected texts, with particular attention to the chapters presenting the results, analyses, and final considerations. We sought to identify the main research findings on the attractiveness of the teaching career, considering factors such as motivation for career entry, challenges faced by undergraduates, working conditions, and reasons for remaining in the profession or for avoiding it. Given the qualitative approach of this study (Yin, 2016), the analysis does not aim to generalize the results but rather to understand the trends and specificities of the knowledge produced on the subject.

Aiming to focus on the attractiveness of the career from the point of view of mathematics teaching and potentially identify relationships between factors that influenced the choice of teaching career and the degree course in which the participants were enrolled when conducting the analyzed studies, the 14 works were organized according to the course in which the participants were enrolled or from which they graduated. In three (Pucetti, 2016; Rodrigues, 2012; Silva, 2012), the context was the mathematics teaching degree. Among the others, six (Leme, 2012; Melo, 2018; Portela, 2018; Souza, 2010; Tarábola, 2018), had participants from other degrees, including mathematics, and six (Coelho, 2017; Kussuda, 2012; Martin, 2016; Silva, 2018; Souza, 2015; Souza, 2018) did not have students and/or graduates of the mathematics degree as participants. This result indicates that Brazilian studies on the attractiveness of the teaching profession do not focus on prospective mathematics teachers.

## 5.1 Research carried out exclusively with mathematics teaching degree students

The three studies performed exclusively with mathematics degree students involved students who were part of the Mathematics subproject of the Programa Institucional de Bolsa de Iniciação à Docência (PIBID) [Institutional Teaching Initiation Scholarship Program]. According to Pucetti (2016), they were completing their degrees, including practicum completers (Rodrigues, 2012), and graduates (Silva, 2012).

As for the reasons pointed out by the participants to choose the teaching career, in the study by Silva (2012), some graduates decided to teach after the completion of the course because they sought more time for the family or because they perceived a vocation and identification with the classroom during the practicums, although the desire to be a teacher was not the first reason for most to have chosen the mathematics teaching degree. In Rodrigues (2012), the option for the course was generally motivated by a liking for mathematics and a sense of connection to it; moreover, six of the seven graduates aspired to a teaching career. Another reason for adherence to teaching, highlighted by the participants, was the shortage of teachers in the area. Pucetti (2016) points to PIBID as positive in the professional education and degree students' performance in the school environment, as suggested by the justifications for the contribution of the meetings with coordinators and supervisors, although the researcher did not directly investigate whether the participants would follow the teaching career after the completion of the degree. This interest was further enhanced by formative opportunities in the course, such as supervised practica (Pucetti, 2016), which can encourage participants to pursue teaching by providing support, guidance, and experiences related to the school environment.

In contrast, the research also addresses the reasons that lead undergraduates not to choose to be mathematics teachers: wages, one of the main reasons for not following the teaching career; the lack of social appreciation, which involves the image of the profession and social prestige; inadequate working conditions, encompassing the condition of students and schools; and the absence of identification of participants with the teacher profile (Silva, 2012). In Rodrigues (2012), some consider the teaching career unattractive due to inadequate working conditions and remuneration.

Silva (2012) and Rodrigues (2012) point to the low attractiveness of the teaching career, a finding reinforced by the first author's data, which indicates that most participants (12 out of 21) did not pursue a teaching career. Silva (2012) even argues that a good teacher education is not sufficient to motivate entry into and adherence to teaching. Rodrigues (2012) results point in the same direction: they indicate that the research subjects sought or would like to pursue other professional possibilities, although these were always linked to mathematics, demonstrating a retreat from the teaching career.

## 5.2 Research carried out with mathematics degree students and other courses, whether degrees or not

The five studies that comprise the second category involved mathematics teaching degree students, as well as students from other courses. The study participants are newcomers to courses in Pedagogy, Physics and Mathematics (Leme, 2012), undergraduates in the areas of Visual Arts, Biological Sciences, Physical Education, Physics, Geography, History, Letters (with a qualification in Portuguese-English), Mathematics, Music, Pedagogy, and Chemistry (Melo, 2018), students of face-to-face under-

graduate courses, covering Pedagogy, Arts, Social Sciences, History, Philosophy, Geography, Letters (with several qualifications) and Computing (Portela, 2018), students of Mathematics and Pedagogy courses (Portela, 2018), students of face-to-face undergraduate courses, covering Pedagogy, Arts, Social Sciences, History, Philosophy, Geography, Letters (with several qualifications) and Computing (Portela, 2018), students of Mathematics and Pedagogy courses (Souza, 2010), and degree students of the last year of Pedagogy, Geography, Mathematics, and Letters courses (Tarábola, 2018).

Regarding the reasons participants cited for choosing a teaching career, the research identified personal factors and other conditions linked to the organization and functioning of the educational system. In Leme (2012), the most influential factors for predisposition to teaching were salary and personal factors, such as positive school experiences, altruism, a liking for education, social engagement, and a connection with children. In Melo (2018), the primary motivation for entering the teaching profession was “vocation,” understood as the desire to be a teacher. Additionally, reasons such as the possibility of reconciling work and studies and the rapid entry into the labor market were mentioned, which are elements that also reveal the influence of contextual and socioeconomic factors on professional choice. In Portela (2018), a significant proportion of undergraduate students (85.4%) at the University of Brasília (UnB) expressed the intention to pursue a career in teaching, which the author attributes to formative experiences, personal values, and perspectives on future performance. Souza (2010), when gathering data from different contexts, indicates that the choice to pursue a teaching career arises from degree students’ desire to become teachers and, thus, to improve education, thereby changing the reality of schools in Brazil. Tarábola (2018) points out that degree students at USP cited personal satisfaction as their primary reason for choosing the profession, as evidenced by a preference for teaching, studying, and living with children. Moreover, factors such as the regularization of teaching practice through the diploma, the desire for professional stability, and more flexible labor-market conditions were mentioned.

The research also addresses the reasons that lead degree students not to choose the teaching career or to express doubts about this option. In Leme (2012), the most recurrent factors concern the image of the teaching profession and the conditions in which it is exercised, including the school precariousness, social discredit, and low remuneration. These aspects discourage students in Physics and Mathematics courses; 52% and 48%, respectively, reported that they did not want to work in basic compulsory education or were doubtful about it. The research also revealed these students’ interest in continuing their graduate studies, indicating a preference for academic trajectories that move away from teaching in basic compulsory education.

In Melo (2018), work, the difficulty of reconciling study and work appears to be a significant reason for giving up, or possibly for giving up on graduation and, according to our interpretation, on teaching. In Portela (2018), the decline in enrollment in teaching degree courses is interpreted as indicative of a growing disinterest in the area, especially among students of Exact Sciences courses. One factor cited for this disinterest is the perception of teachers’ precarious working conditions, such as low salaries and social status, and the devaluation of the profession. The study also notes that among students in areas such as Mathematics, Physics, and Chemistry, a high proportion of degree students do not intend to pursue teaching, reinforcing its low attractiveness.

### 5.3 Studies developed with students from teaching degrees other than the teaching degree in mathematics

The six researches carried out exclusively with students from other degrees, not including the degree in mathematics, involved graduates of the degree in Geography (Coelho, 2017), graduates in Physics (Kussuda, 2012), students of the degrees in Biological Sciences, Physics, and Chemistry (Martin, 2016), young physics teachers who graduated from the degree in Physics (Silva, 2018), students of the Pedagogy course (Souza, 2015) and students of Chemistry (Souza, 2018).

As for the reasons the participants in the six works pointed out for choosing the teaching career, in Kussuda (2012), some graduates in Physics mentioned the desire to help students in vulnerable situations and offer educational opportunities as one of the reasons, others reported liking for teaching, and one participant pointed out that the course contributed to consolidating his identity as a teacher educator. In Martin (2016), interest in teaching manifested as a desire to become a teacher, curiosity about the profession, and family influence and admiration for the teaching career. PIBID was identified as an important factor in career decisions, particularly through classroom experiences.

In the study by Silva (2018), only two of the six physics teachers interviewed reported having chosen teaching as their first professional option; their reasons differed: one cited outstanding teachers, and the other cited a personal dream and family influence. In Souza (2015), undergraduate students in Pedagogy identified the following factors in their choice of teaching: family influence, labor market conditions, the search for professional fulfillment, and, in some cases, the absence of another formative alternative.

Souza (2018) identified that the four undergraduate students in Chemistry followed throughout the research showed, from the beginning of the course, the intention to work in basic compulsory education, motivated by the liking of the course, teaching, chemistry, the teaching profession, and the level of education, in addition to the family influence and the desire to continue their studies. Specific subjects and projects, such as PIBID, were also cited as relevant to strengthening interest in teaching. In Coelho (2017), study, the reasons identified by participants in the Pedagogy course for choosing the degree are strongly linked to characteristics of the teaching career itself: a preference for the field of Education, a connection with children, and social engagement.

In Kussuda (2012), research, the main factors identified as contributing to withdrawal from the teaching profession were low remuneration, social devaluation, and students' disrespect and disinterest. Some graduates reported frustration with high school, citing difficulties interacting with young people, an unsatisfactory salary, and a lack of support in addressing classroom challenges. One of the Physics undergraduates mentioned in Kussuda (2012) expressed disappointment with both teaching in Brazil and his own education, criticizing the limited emphasis on Modern Physics and Pedagogy and the absence of guidance during the practicum. Also cited in Kussuda (2012), another participant reported seeking other professional areas for salary issues and personal fulfillment, describing the school reality as "a twisted path."

Silva (2018) addresses the tension between dropout and permanence in teaching, indicating that working conditions and low wages are important factors that fuel this contradiction and affect the

decisions of young teachers. The data from Souza (2018) reveal that students who did not participate in PIBID demonstrated little practical knowledge of teaching. The work also highlighted undergraduates' concerns about the devaluation of the profession, including low wages, social disrespect, and poor working conditions.

## 6. Discussion of the results on the attractiveness of the teaching career in Brazil

Silva (2012), Rodrigues (2012) and Pucetti (2016), exclusively focusing on students of the mathematics degree, point out that, although academic education is necessary for the exercise of the profession and the mastery of mathematical knowledge for teaching or content knowledge, as highlighted by Patrono e Ferreira (2021) and Pinto e Neves (2025),, respectively, this education is not sufficient to guarantee entry and permanence in the teaching career. This indicates that the attractiveness of the teaching career, and especially that of the mathematics teacher, is crossed by monetary and non-monetary factors (Britto; Waltenberg, 2021). With regard to the former, low wages, the absence of financial valuation throughout the career, and poor working conditions are documented in Silva (2012), Rodrigues (2012) and Silva e Santos (2022). These results corroborate the analysis of Britto e Waltenberg (2021), who identify salary as a primary deterrent, particularly among undergraduates who do not wish to pursue teaching, although financial considerations are not always the initial motivator for choosing the teaching degree. Non-monetary factors, which cover aspects such as identification with teaching during practicums (Silva, 2012), the perception of social vocation or mission, and the positive impact of formative experiences such as supervised practicums (Rodrigues, 2012) and PIBID (Pucetti, 2016) strengthen the decision for teaching, as described by Britto e Waltenberg (2021).

The analysis of the five studies involving mathematics teaching degree students and other teaching degree courses shows that the attractiveness of the teaching career, also in these cases, can be explained by an interaction between monetary and non-monetary factors, in line with the approach proposed by Britto e Waltenberg (2021), as identified in the first category studies of this analysis, which involve only students and graduates of mathematics teaching degree. In this category, which includes prospective teachers from other curriculum components, the results indicate that the decision to enter or not to enter the teaching profession goes far beyond a rational and individual choice: it is immersed in social, institutional, and symbolic conditions that directly impact the appreciation (or devaluation) of the profession.

Non-monetary factors, such as the liking for education, rapport with children, the desire to contribute socially, family influence, vocation, and positive school experiences are mentioned by the subjects who show interest in teaching (Leme, 2012; Melo, 2018; Souza, 2010; Tarábola, 2018) and seem to represent a good part of the arguments that support the desire for a teaching career. These elements represent forms of attraction to the teaching profession and are often grounded in personal identification with teaching.

Therefore, monetary factors, such as low remuneration, the precariousness of schools, and the lack of prospects for professional advancement, emerge as the main obstacles to career attractiveness,

especially among students in the Exact Sciences (Leme, 2012; Portela, 2018; Tarábola, 2018). The comparison with other professions perceived as valued and financially more advantageous reinforces the distancing from teaching as a priority choice, a pattern also observed in the intentions of students who choose to pursue graduate studies, seeking alternatives to basic compulsory education (Leme, 2012), which was verified among students of degrees in the area of Exact Sciences.

The six studies (Coelho, 2017; Kussuda, 2012; Martin, 2016; Silva, 2018; Souza, 2015; Souza, 2018) carried out with participants from degrees other than Mathematics, reinforce that the attractiveness of the teaching career is markedly affected by multiple components that are articulated between monetary and non-monetary factors, as discussed by Britto e Waltenberg (2021) and observed in the two previous categories. Regarding non-monetary factors, Martin (2016), Souza (2015) and Coelho (2017) indicate that many undergraduates express interest in teaching driven by a connection with children, a desire for social transformation, family influence, and identification with teaching. The strengthening of this interest, as shown by Souza (2015) and Souza (2018), is linked to experiences during initial education, particularly in supervised practica and programs such as PIBID. However, studies also show that these motivations often do not withstand the realities of professional practice. More specifically, Coelho (2017), Kussuda (2012) e Silva (2018) identify factors contributing to divestment from the teaching profession, revealing that more than half of the graduates in these studies chose not to teach. The reasons for such leave are strongly linked to the profession's financial aspects, such as low wages and poor working conditions. In Silva's research (2018), these difficulties were conditioning factors for the migration of teachers from public to private school networks, in search of better working conditions and professional security. In addition, the absence of significant formative experiences or the distance between theoretical education and school reality, as reported in Souza (2018) and Kussuda (2012), contributes to divestment in the teaching career.

## 7. Final Considerations

The analysis of the 14 research studies on the attractiveness of the teaching career reveals that the decision to enter and remain in the profession is conditioned by factors that go beyond individuality and, although it reveals that some undergraduates are motivated by the commitment to education and social transformation, structural challenges faced by teaching, such as low remuneration, precarious working conditions and lack of institutional support, all monetary (Britto; Waltenberg, 2021), often result in disinterest or career evasion, especially in the areas of Exact Sciences, such as Mathematics and Physics.

On the one hand, non-monetary factors stand out, including subjective and symbolic motivations such as the desire to teach, social engagement, vocation, family influence, personal satisfaction, and positive formative experiences. These elements proved to be central to the option for the teaching career and, in many cases, are driven by programs such as PIBID (Pucetti, 2016), the supervised practicum (Souza, 2015) and other significant experiences throughout the degree, such as specific subjects (Souza, 2018) and formative experiences (Portela, 2018). However, these factors are fragile when isolated, especially in the face of a challenging and undervalued professional reality (Rodrigues, 2012).

On the other hand, monetary factors, such as low remuneration, lack of career plans, precarious working conditions, lack of institutional recognition, and professional instability, appear as the main discouragers of choosing teaching (Kussuda, 2012; Portela, 2018; Rodrigues, 2012; Silva, 2012; Silva, 2018), especially among students in areas such as Mathematics, Physics, and Chemistry (Portela, 2018). Such aspects are unappealing due to factors external to the career, making it less competitive than other professional options that offer higher financial returns and greater social prestige.

The results of the 14 surveys also converge on the conclusion that the teaching career is not an option due to social or remuneration devaluation. Other factors related to working conditions are also present and are associated with the low attractiveness of the teaching career. Despite this, studies point out that contexts experienced in initial education, such as PIBID, supervised practica, and other formative experiences, can contribute to entry into teaching.

Although the analyzed research has identified factors influencing the attractiveness of the teaching career and the tension between monetary and non-monetary aspects, it is possible to further delimit the specific factors of attractiveness for mathematics teaching. The studies that make up this *corpus* reinforce that the choice for teaching is multifactorial, but the consideration that these studies did not discriminate the particular nature of these factors in the context of the teaching degree in Mathematics remains valid, nor did they indicate to what extent the weight and interaction between them differ from the factors for teachers in other areas, such as Pedagogy or Letters.

From these results, we can conclude that research on the attractiveness of the teaching profession remains underexplored in the Brazilian context. Understanding the multiple dimensions that affect this choice is fundamental not only for the strengthening of teaching, but also for the development of more effective public policies, capable of guaranteeing quality education and teachers who are more motivated, valued and prepared to face the challenges of contemporary education.

In short, the attractiveness of the teaching career in Brazil is crossed by monetary factors, such as salaries and professional progression, and by non-monetary factors, such as vocation, social recognition, and working conditions. Facing these challenges requires integrated public policies that address salary appreciation, ensure consistent career paths, improve conditions for teaching practice, and promote initial and continuing education, to make teaching a viable and socially recognized profession.

Addressing the crisis of this career's attractiveness in Brazil requires integrated public policies that simultaneously address monetary and non-monetary factors. It is necessary to ensure fair wages, decent working conditions, consistent career paths, and institutional recognition, while strengthening educational tools that cultivate interest, belonging, and a sense of teaching identity. This dual appreciation can help reverse the growing disinterest in teaching and foster an attractive, sustainable, and socially recognized career.

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