

**TRAINING OF MULTIVALENT TEACHERS: BIBLIOGRAPHIC STUDY ON
THESES AND DISSERTATIONS (1999 – 2019)¹**

***FORMAÇÃO DE PROFESSORES POLIVALENTES: ESTUDO BIBLIOGRÁFICO
SOBRE TESES E DISSERTAÇÕES (1999 – 2019)***

***FORMACIÓN DE DOCENTES POLIVALENTES: ESTUDIO BIBLIOGRAFICO DE
TESIS Y DISERTACIONES (1999 - 2019)***

Antonio Anderson Brito do NASCIMENTO²
Emerson Augusto de MEDEIROS³
Giovana Carla Cardoso AMORIM⁴

ABSTRACT: This study textualizes a bibliographic survey whose main objective was to inventory what the Catalog of Theses and Dissertations of the Coordination for the Improvement of Higher Education Personnel (CAPES) has about the training of multipurpose teachers. The period from 1999 to 2019 was used as a time frame. In all, 36 (thirty-six) records of theses and dissertations were found, and only 28 (twenty-eight) dissertation and doctoral productions were available for access, reading and analysis. The analysis was based on four main aspects: a) distribution of theses and dissertations by Higher Education Institution (HEI); b) distribution of theses and dissertations by Federative State; c) chronological distribution of academic productions; and d) investigative themes present in theses and dissertations. In conclusion, among other aspects, it is noted that the number of dissertation and doctoral studies on the training of multipurpose teachers, based on the research carried out, is small, compared to the production of existing knowledge in Brazil in the educational field on the training of teachers. Basic Education teachers.

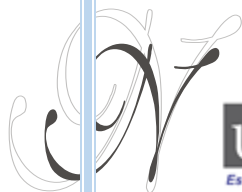
KEYWORDS: Training of versatile teachers. Multipurpose teachers. Teaching from the perspective of versatility.

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² Federal Rural University of Semiarid (UFERSA), Mossoró – RN – Brazil. Master's degree in Teaching in the Graduate Program in Teaching (POSENSINO). Scholarship holder of the Coordination for the Improvement of Higher Education Personnel (CAPES). ORCID: <https://orcid.org/0000-0002-1795-7576>. E-mail andersonb.nascimento@gmail.com

³ Federal Rural University of Semiarid (UFERSA), Mossoró – RN – Brazil. Associate Professor. Permanent Professor of the Graduate Program in Teaching (POSENSINO/UFERSA). PhD in Education. ORCID: <https://orcid.org/0000-0003-3988-3915>. E-mail: emerson.medeiros@ufersa.edu.br

⁴ State University of Rio Grande do Norte (UERN), Mossoró – RN – Brazil. Adjunct Professor. Permanent Lecturer of the Graduate Program in Education (POSEDUC/UERN). PhD in Education. ORCID: <https://orcid.org/0000-0002-6291-3169>. E-mail: giovana_melo@hotmail.com



RESUMO: Este estudo textualiza um levantamento bibliográfico que teve como objetivo central inventariar o que o Catálogo de Teses e Dissertações da Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) dispõe a respeito da formação de professores polivalentes. Utilizou-se como recorte temporal o período de 1999 a 2019. Ao todo, foram encontrados 36 registros de teses e dissertações, estando disponíveis para acesso, leitura e análise apenas 28 produções dissertativas e doutorais. A análise se fez com base em quatro aspectos principais: a) distribuição de teses e dissertações por Instituição de Educação Superior (IES); b) distribuição de teses e dissertações por Estado Federativo; c) distribuição cronológica das produções acadêmicas; e d) temáticas investigativas presentes nas teses e dissertações. Como conclusão, entre outros aspectos, demarca-se que o número de estudos dissertativos e doutorais acerca da formação de professores polivalentes, com base na pesquisa realizada, é tímido, comparando com a produção do conhecimento existente no Brasil no âmbito educacional sobre a formação de professores da Educação Básica.

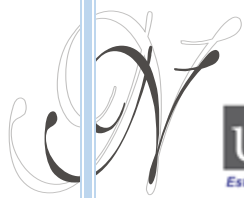
PALAVRAS-CHAVE: Formação de professores polivalentes. Professores polivalentes. Ensinar sob a perspectiva da polivalência.

RESUMEN: Este estudio textualiza un levantamiento bibliográfico cuyo principal objetivo fue inventariar lo que el Catálogo de Tesis y Disertaciones de la Coordinación para el Perfeccionamiento del Personal de Educación Superior (CAPES) tiene sobre la formación de docentes polivalentes. Se utilizó como marco temporal el período de 1999 a 2019. En total, se encontraron 36 (treinta y seis) registros de tesis y disertaciones, y solo 28 (veintiocho) producciones de disertaciones y doctorados estuvieron disponibles para acceso, lectura y análisis. El análisis se basó en cuatro aspectos principales: a) distribución de tesis y disertaciones por Institución de Educación Superior (IES); b) distribución de tesis y disertaciones por Estado Federativo; c) distribución cronológica de las producciones académicas; y d) temas de investigación presentes en tesis y disertaciones. Como conclusión, entre otros aspectos, se observa que el número de disertaciones y doctorados sobre la formación de profesores polivalentes, a partir de la investigación realizada, es pequeño, en comparación con la producción de conocimiento existente en Brasil en el campo educativo sobre la Formación de docentes de Educación Básica.

PALABRAS CLAVE: Formación de profesores polivalentes. Profesores polivalentes. Enseñar desde la perspectiva de la polivalencia.

Introduction

It is not new that many educational theorists have been discussing and researching the training of teachers of Basic Education in Brazil. Aspects that address initial education, continuing education, teaching knowledge, teacher learning, educational policies for teacher education, among others, are objects of study in different researches (ROMANOWSKI, 2013; MEDEIROS, AGUIAR, 2018; MEDEIROS, MEDEIROS, 2020). In this research, we focus



on the training of multipurpose teachers. In this sense, this work raises reflections on teacher education, demarcating our gaze to the formation of multipurpose teachers.

We point out that the research is part of a larger study developed in the Graduate Program in Teaching (POSENSINO)⁵, of the Federal Rural University of the Semi-Arid (UFERSA). As the main objective of the study presented here, we emphasize "inventory what the Catalogue of Theses and Dissertations of the Coordination for the Improvement of Higher Education Personnel (CAPES) provides regarding the training of multipurpose teachers".

We believe that the research will provide a panoramic reading about what has been produced in recent decades (1999 - 2019) about this formative modality (the training of multipurpose teachers). For Cruz, Ramos e Silva (2017, p. 1199) "[...] the term polyvalence and multipurpose teacher, despite some differentiations, reflects conceptions of man, society and socioeconomic relations in a similar way [...]". We understand that, in the historical debate about the professional profile desired to the graduate of the Pedagogy Course, polyvalence became central, as highlighted by Medeiros, Araújo and Santos (2021), an aspect that highlights the need for this research.

The time frame (1999 - 2019) demarcated for this investigation is justified by the changes established via CNE/CP Resolution, no. 2, of December 20, 2019, for undergraduate courses in general, implying the training of multipurpose teachers (BRASIL, 2019). Thus, we have seen it pertinent to inventory the academic production on the training of multipurpose teachers in the last 20 years. We stated that, in a previous study in qualified databases in the area of education, such as *Scielo*, we did not find investigations that reported the production of knowledge about the training of multipurpose teachers.

Outlined in this brief introduction, we organized the rest of the text into three more sections. The first section exposes, in a detailed way, the methodological path for the construction of the research. The second section dialogues on the inventoried findings in the study, considering the distribution of theses and dissertations by the Institution of Higher Education (HEIs), the distribution of theses and dissertations by Federative State, the chronological distribution of academic productions and the investigative themes present in theses and dissertations. At the last moment, we made considerations from the analysis discussed in the previous section.

⁵ POSENSINO is constituted as a graduate program in the area of Education formed by the interinstitutional partnership between three circumscribed institutions in the State of Rio Grande do Norte, which are: the State University of Rio Grande do Norte (UERN), the Federal Rural University of Semi-Arid (UFERSA) and the Federal Institute of Education, Science and Technology of Rio Grande do Norte (IFRN).



Methodological path

As we highlight in a previous moment, this research was constructed considering the academic production in the Capes Theses and Dissertations Catalogue, validating the period from 1999 to 2019, on the theme "training of multipurpose teachers". Thus, we developed the following methodological procedures.

At first, from the central objective of the study, we choose descriptors for the search for investigations, which are: (a) training of multipurpose teachers; (b) multi-purpose teaching; and (c) multipurpose teachers. For each descriptor, we used variants (such as a multipurpose teacher, initial training of the multipurpose teacher, among others), in order to filter the largest number of academic productions. We clarified that all variants used reported polyvalence because it was central in the study.

We emphasize that between descriptors or variants, at the moments of the searches, we insert the previous quotation marks (opening) and at the end of the term (closing). The descriptor was the key term that reflects what we were looking for. It is a word or set of words that synthesizes the object/theme of study (TERRIEN; NÓBREGA-TERRIEN, 2010). On the other hand, the variants, such as the nomenclature itself can help the understanding, are in line with the variations that the descriptor may suffer. They cannot be detonating what one has as object/theme of study, but possibilities of obtaining what is intended to be found (TERRIEN; NÓBREGA-TERRIEN, 2010).

In addition to these aspects, we highlight that we do not refine the searches for a given area, since we understand that research could be produced in different graduate programs, such as in the areas of Human and Social Sciences and Interdisciplinary. The research was built in 2021. With the selected papers, we start for the second moment of the study that corresponds with the reading and selection of the texts. Next, in order to leave no doubt, in methodological terms of the study, we detail the productions found with each descriptor and variant, as well as the exclusions of theses and dissertations that we carried out in the findings.⁶

⁶ Some of the studies found do not indicate the training of multipurpose teachers. However, they were included in the analysis because they refer to the multipurpose teacher, presenting association with the research objective.



First descriptor - training of multipurpose teachers

Our first descriptor was called "Multipurpose Teacher Training". Table 1 shows the selected academic productions:

Table 1 – Training of multipurpose teachers

Authorship/year of publication	Title of academic production	Nature
AGUIAR, Maria Stefani Rocha (2005)	Multipurpose teachers of the initial grades of elementary school: conception of mathematics training and teaching	Thesis
CARVALHO, Andréia Santana de (2008)	Training of multipurpose teachers: a study based on the pedagogical practices of normal são Paulo courses in the 1950s and 1960s	Thesis
VERAS, Claudio Monteiro (2010)	Statistics in the initial grades: a training experience with a collaborative group with multipurpose teachers	Thesis

Source: Prepared by the authors

With the first descriptor we achieved, in an undelimited amount, 11 works. However, based on what we had as our objective of study, only three were in line with the central theme of the research – training of multipurpose teachers. As variants, in our first search, we demarcated the "Formation of the multipurpose teacher". Notice that in this variant we remove the plural (in Portuguese) of "Teacher" and "Multipurpose". In Table 2, we detail the selected texts.

Table 2 – Multipurpose teacher training

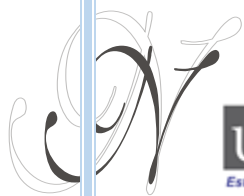
Authorship/year of publication	Title of academic production	Nature
LIMA, Vanda Moreira Machado (2007)	Multipurpose teacher training and teaching knowledge: a study from public schools	Dissertation
SANTOS, Mercedes Bêta Quintano de Carvalho Pereira dos (2009)	Teaching mathematics in pedagogy courses: the training of the multipurpose teacher	Dissertation

Source: Prepared by the authors

With the term used as a variant, "Training of the multipurpose teacher", we seized six papers, however, there was one repeated and three were not compatible with the research objective, resulting in only two academic productions, as recorded in Table 2.

In the second variant, "Training of the multipurpose teacher", we did not find publications. The nomenclature varies because it uses gender differentiation and makes use of the singular. In our third variant, "Training of multipurpose teachers", written in the plural, we also did not obtain papers. As the fourth variant, "Initial training of multipurpose teachers", we add the word "initial". Among three identified studies, two did not approach our study





objective and one was repeated as selected production in one of the previous variants. In the fifth variant, "Initial training of multipurpose teachers", we repeated the term "initial", adding another gender identity (the female), however, no work was found.

Second descriptor - multipurpose teaching

In our second descriptor, "Multipurpose Teaching", we found five studies, however, compatible with the research only one. The following table is our finding:

Table 3 – Multipurpose teaching

Authorship/year of publication	Title of academic production	Nature
CRUZ, Shirleide Pereira da Silva (2012)	The construction of multipurpose professionalism in teaching in the early years of elementary school: the meanings attributed to practices by teachers of the municipal school system of Recife	Dissertation

Source: Prepared by the authors

As performed in the first descriptor, we also used variants to search for productions that were in dialogue with what we inventoried. In the first variant, "Multipurpose Teaching", we find four productions. However, the studies did not approach the objective proposed to the research. In the second variant used, "Multipurpose pedagogical practice", no academic production was found. We emphasize that, with the second descriptor and its variants, as illustrated in Table 3, we find only one text.

Third descriptor - multipurpose teachers

With the third descriptor, "Multipurpose Teachers", we obtained the number of 68 (sixty-eight) papers. From this total, we filtered 21 theses and dissertations because they approach the central objective of the investigation. Table 4 refers to the inventoried academic papers:



Table 4 – Multipurpose teachers

Authorship/year of publication	of	Title of academic production	Nature
RIBEIRO, Raimunda Porfirio (1999)		Process of construction-reconstruction of knowledge of multipurpose teachers in science teaching	Thesis
FREIRE, Cecília Yoshida (2000)		Science teaching: what multipurpose teachers think	Thesis
IGNÁCIO, Renato da Silva (2006)		A study on the conceptions of multipurpose teachers about area and perimeter	Thesis
ARAÚJO, Leticia de Castro (2007)		Conceptions and competencies of a group of multipurpose teachers related to reading and interpreting tables and graphs	Thesis
PEREIRA, Raquel Stilo (2007)		Physical education in the series of the initial phase of elementary school of the municipal public schools of Santo André: the eyes of the multipurpose teachers	Thesis
COSTA, Manoel dos Santos (2008)		Discussing geometry teaching with multipurpose teachers	Thesis
SANTOS, Lucimara dos (2008)		Changes in teaching practice: a challenge of continuing education of multipurpose teachers to teach mathematics	Thesis
CORREIA, Carlos Eduardo Felix (2009)		Continuing education of multipurpose teachers: the potential in the analysis of errors in the teaching/learning process of mathematics	Thesis
FONSECA, Elisabete Bernardes (2010)		Music education: a study from the PCN-art and from the perspective of polyvalent elementary school teachers	Thesis
RODRIGUES, José Maria Soares (2011)		Probability as a curricular component in the initial mathematical training of multipurpose teachers	Dissertation
SILVA, Silvana Holanda da (2011)		Knowledge of multipurpose teachers in geometry: contributions of the theory of semiotic representation records	Thesis
MAGALHÃES, Jamille Mineo Carvalho de (2012)		Resignification of multipurpose teachers' conceptions about their relationship with mathematics and the use of mathematical games	Thesis
PEREIRA, Cristiane Cardoso Maia (2012)		The mathematical training of multipurpose teachers in early career in the early years of elementary school	Thesis
SANTOS, Aparecido dos (2012)		Collaborative training processes focused on the multiplicative conceptual field: a possible path with multipurpose teachers	Dissertation
LAMBERTI, Denise Di Giovanni (2014)		Natural number: knowledge of/for multipurpose teachers in a specialization course	Dissertation
TARGINO, Renata Fernandez (2014)		Education and the multipurpose teacher: considerations from Carl G. Junhög and Hannah Arendt	Thesis
UNGARO, Jose Segundiano (2014)		Science teaching in the early years of elementary school: dilemmas and possibilities in the view of multipurpose teachers	Thesis
KASSIS, Renata Nassralla (2015)		The training of multipurpose teachers and teachers in pedagogy courses in private higher education institutions	Thesis
CURILLA, Rosemeire Aparecida Trebi (2016)		Curricular activities of teaching, research and extension integration (ACIEPEs) as a continuing education strategy: a case study with mathematical training of multipurpose teachers in the city of São Carlos	Thesis
INNOCENTI, Thamirys Desiree (2016)		Htpc's formative possibilities: a look from multipurpose teachers	Thesis
MINGARELLI, Katia Tramontano (2016)		(dis)courses of multi-purpose teachers in training: the English language in question	Thesis

Source: Prepared by the authors

Table 4, presented above, contains our highest result of the research findings. We found 21 academic papers related to our research object. With regard to the variants, in the

first one, "Multipurpose Teachers", 27 academic productions appeared, however, only four were associated with the objective of our research. The following are the findings in Table 5:

Table 5 – Multipurpose teachers

Authorship/year of publication	Title of academic production	Nature
GOMES, Celia Maria Siqueira (2011)	Artistic languages in education: dilemmas and challenges of multipurpose teachers	Thesis
BOULITREAU, Paula Roberta Paschoal (2017)	Body practices in early childhood education: analysis of the methodological procedures of the multipurpose teachers of a School of the Municipality of Recife - PE	Thesis
MONTENEGRO, Vanda Luiza dos Santos (2017)	The development of pedagogical knowledge of the content of multipurpose teachers in science teaching: a look at the influence of a continuous training course on argumentation	Dissertation
ALVES, Luana Leal (2019)	The role of training and beliefs in the development of the teacher skills of multipurpose teachers for the teaching of mathematics	Thesis

Source: Prepared by the authors

With the first variant, as we explained earlier, we were able to identify four academic productions that have as date of publication the years 2011 to 2019. Regarding the second variant, "Multipurpose Professor", we found 37 dissertation and doctoral works, but many of them were repeated in previous searches. Thus, we selected five academic productions. In the following table, we detail the findings.

Table 6 – Multipurpose Teacher

Authorship/year of publication	Title of academic production	Nature
BARROS, Kelly Cristina da Silva (2016)	Initial training of elementary school teachers I: from polyvalence to interdisciplinarity	Thesis
ANDRADE, Leticia Raboud Mascarenhas de (2017)	The multipurpose teacher of the early years of elementary school of the municipal network of Natal/RN: work, experience and mediations	Thesis
SILVA, Jaqueline Ferreira da (2017)	Mathematical training of the multipurpose teacher: a metanalytical study	Thesis
VALADARES, Talita (2017)	Retrospective view of the initial training of the multipurpose teacher who teaches mathematics in the early years in the municipality of Ouro Preto	Thesis
SILVA, Ana Claudia da Silva and (2018)	The training process of the multipurpose teacher: contributions of PIBID Pedagogy to the teaching of mathematics	Thesis

Source: Prepared by the authors

According to Table 6, filtering from the research objective, only five new results remained. With the explanation of the findings about this variant, we finalize the details of our searches in the Capes Catalogue of Theses and Dissertations. In the third moment of the research, after downloading the texts, we started the most comprehensive reading of the

academic productions found, as well as the analysis of the data produced. We clarified that some of the works mentioned above were not possible to access, since they were not available, only the titles and abstracts that allowed us to read and select the texts.

In the last table presented in this section, there is the quantity of theses and dissertations accessed (the downloaded text, with conditions for reading and analysis) and not accessed (the academic papers that could not download the files for reading and analysis).

Table 7 – Quantitative of theses and dissertations accessed and not accessed

Nature of academic productions	Quantitative
Dissertations accessed	5
Theses accessed	23
Dissertations not accessed	2
Theses not accessed	6
Total works accessed	28
Total works not accessed	8
Total works accessed and not accessed	36

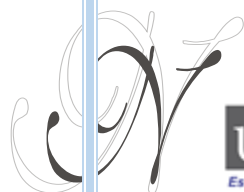
Source: Prepared by the authors

In general, we obtained a total of 36 academic papers, including theses and dissertations. However, only 28 theses and dissertations were found on the platform for reading and analysis. We emphasize that eight of them were not possible to access, because publications were not authorized or the files were unavailable.

For analysis purposes, we validated the academic papers accessed, in a total of 28 academic productions – 23 theses and five dissertations. The analysis is detailed in the following section. For its construction, we consider four analytical thematic axes, which are: a) distribution of theses and dissertations by Higher Education Institution (HEI); b) distribution of theses and dissertations by Federative State; c) chronological distribution of academic productions; and d) investigative themes present in theses and dissertations.

Training of multipurpose teachers - analyzing the findings

In this section, we will present the analysis constructed from the data produced on the material available in the Capes Theses and Dissertations Catalogue. In total, 28 dissertation and doctoral productions were analyzed and had access to the documents. To start the exhibition of the analysis, we built Table 8 that specifies the institutions of higher education



in which the graduate programs (mostly in the area of Education) are linked, in which the research was developed and published. See:

Table 8 – Distribution of theses and dissertations by higher education institution.

Higher Education Institution	Quantitative dissertations	Quantitative theses	Total
Moura Lacerda University Center	0	1	1
Pontifical Catholic University of São Paulo	2	5	7
Catholic University of Santos	0	3	3
Don Bosco Catholic University	0	1	1
University of São Paulo	1	2	3
São Paulo State University “Júlio de Mesquita Filho”	0	1	1
State University of Ceará	0	1	1
Federal University of Pelotas	0	1	1
Federal University of Pernambuco	1	0	1
Federal University of São Carlos	0	1	1
Federal University of São Paulo	0	1	1
Federal University of Paraná	1	0	1
Federal University of Rio Grande do Norte	0	1	1
Federal University of Triângulo Mineiro	0	1	1
Lutheran University of Brazil	0	1	1
Metodist University of São Paulo	0	1	1
University San Francisco	0	1	1
São Judas Tadeu University	0	1	1
Total productions	5	23	28

Source: Prepared by the authors

The institutions in which research has been most developed regarding the training of multipurpose teachers are in line with the Pontifical Catholic University of São Paulo (PUC/SP), with seven academic productions; the University of São Paulo (USP), with three studies; and the Catholic University of Santos (UNISANTOS), with three investigations. At PUC/SP and USP there are dissertations and theses developed, while at UNISANTOS we find only dissertations. In the other 15 institutions, we found only the total of a dissertation or doctoral work.

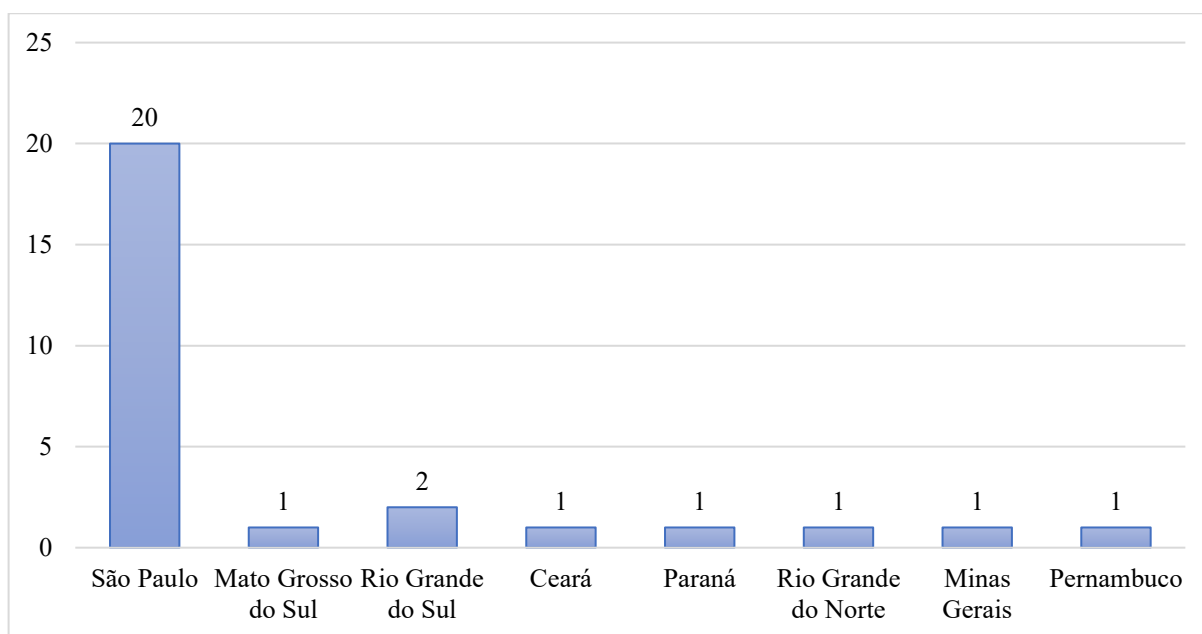
We seized work from 18 higher education institutions, of which 17 are universities and one is a university center. With regard to the type of institution, we found that the productions were developed in ten public universities (state and federal) and eight in private institutions, highlighting with this aspect the predominance of academic production, *at the stricto sensu level, in public institutions* in the country, a characteristic pointed out by other researchers in the area of education (MEDEIROS; DAYS, 2015). When academic productions are added between institutions, we see that there are more works published in private HEIs.



In relation to public institutions, we found that research is predominant in federal universities. Of the ten institutions in the public sphere in which we find theses and dissertations, seven refer to federal universities. State public institutions are represented by the State University of Ceará (UECE), USP and UNESP. As previously in research produced in the area of Education on teacher education, we see that federal HEIs have the highest number of productions, given that factors such as investments from federal levels (such as CAPES) and, mainly, the tradition of graduate programs in Education in these institutions imply the number of researches carried out (MEDEIROS; DAYS, 2015).

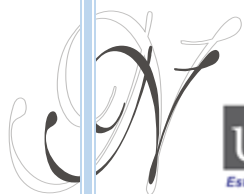
By checking the data, we detail the distribution of theses and dissertations by Federative State. In this sense, we were able to point out the territorial dimension in which the researches are concentrated. Graph 1 records:

Graph 1 – Distribution of Theses and Dissertations by Federative State



Source: Prepared by the authors

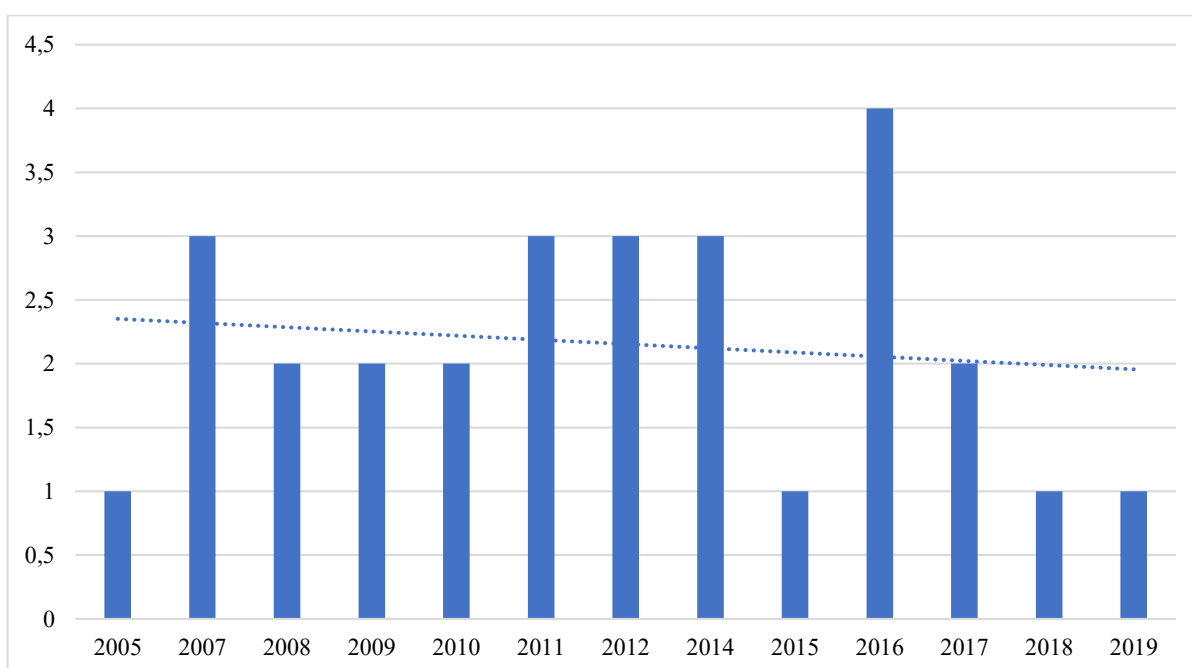
In the graph under discussion, we note that 20 productions are circumscribed in the State of São Paulo - SP, a considerable quantity in front of the 26 States and the Federal District - DF that we have in our country. Then, we noticed the State of Rio Grande do Sul - RS, with two investigations, and the others (six States) with a thesis or dissertation. In addition, it is worth noting that 18 States do not have in their graduate programs or have not provided information of productions that contemplate our discussion, which are published on the CAPES platform.



We affirm that the number of jobs per State is very small, if we validate that the training of multipurpose teachers, historically predominant in the Pedagogy Course, has been carried out for a long time. Moreover, in the graduate programs in Education, according to Medeiros and Dias (2015) and Romanowski (2013), teacher training (in various perspectives) is the prominent area in the list of research developed over time.

In the continuous analysis, we will allude in the next graph an explanation about the time frame identified from the publications of the dissertation and doctoral studies found.

Graph 2 – Chronological distribution of theses and dissertations



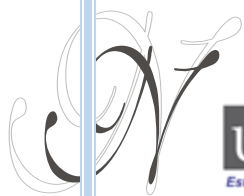
Source: Prepared by the authors

As we can see, Graph 1 textualizes that academic productions are available from 2005, following until the year 2019. In the above, we were able to verify, looking from the largest to the smallest, that in 2016 we had the highest number of productions available – four academic papers.

Soon after, we have the years 2007, 2011, 2012 and 2014 with three dissertation or doctoral productions published on the central theme of this study. Continuing, we find 2008, 2009, 2010 and 2017, with two investigations each year. Next, we find papers published in the years 2005, 2015, 2018 and 2019 – each year there is a publication.

From the analysis, we point out that, although at the time of the searches we found productions from 1999, the works were not found or were not authorized for publication. We





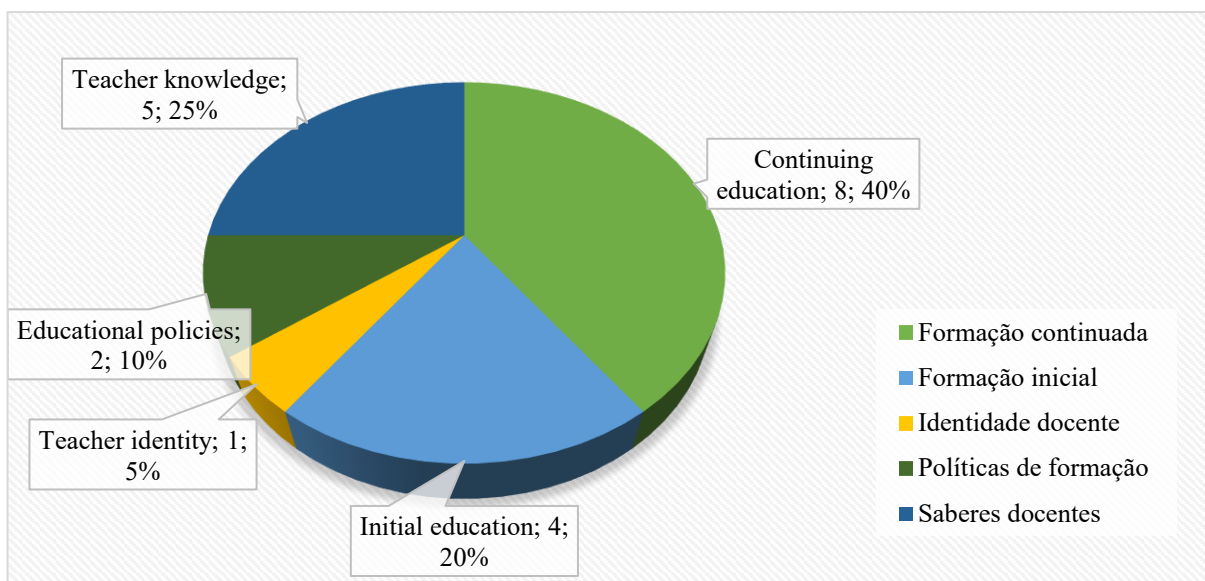
understand that this aspect impairs the dissemination of knowledge in the area of teacher education, given that reading the productions, in total, would help us to perceive advances or limitations about the training of multipurpose teachers, as well as identify trends or models of teacher training.

Regarding the distribution per year, we do not understand that there is a significant concentration of works in a given period of time. Regardless of the growth of graduate studies in Brazil, according to Medeiros, Araújo and Fortunato (2021), especially in the last ten years, this aspect has not weighed on the growth of investigations on the training of multipurpose teachers.

With the end of the discussion of the previous graph, we will begin the analysis of the investigative themes present in theses and dissertations. To expand the understanding of what the productions were about, we listed two categories for analysis, consistent with our study objective. In the first, we approach *the training of multipurpose* teachers (central category of the study) and in the second we discuss *the multipurpose teaching in Basic Education*. The second category was created because we realized that many studies found on the training of multipurpose teachers emphasized the study not for teacher education itself, but for teaching (polyvalent) in the perspective of the multipurpose teacher (or teaching in a specific area, such as teaching mathematics, among others).

We emphasize that, estimating the scope of what was being proposed as a central objective to the research, we started the analytical process of abstracts, abstracts, introductions and conclusions of the texts. Only after this procedure, we include the work in one of the categories created. In the procedure, we organized the academic productions in the two categories developed in thematic groups that were formed from what the dissertation and doctoral works indicated. Graph 3 refers to the investigative themes of our first category - training of multipurpose teachers. Let's note:

Graph 3 – Themes on the training of multipurpose teachers in theses and dissertations⁷



Source: Prepared by the authors

In the first category (training of multipurpose teachers), we organized the analysis from five thematic groups. In children, 40% (eight studies) of the studies addressed the "continuing education" of multipurpose teachers. This thematic group expresses the highest percentage of productions found. With 25% (five studies) of the studies, there is the theme "teaching knowledge", followed by the "initial training" that holds 20% (four studies). With less expressive values, we found studies about the "policies of teacher education", 10% (two researches), and the "teacher identity", 05% (one study).

From the perspective of entering into the more detailed analysis of the academic productions found, we consider it fundamental to present some considerations regarding the dissertations and theses inventoried in the bibliographic survey. We organized the discussion from the thematic groups mentioned in the previously dialogued graph.

⁷ Light green: Continuing education; Light blue: Initial education; Yellow: Teacher identity; Dark green: Educational policies; Dark blue: Teacher knowledge.



Continuing education

The first work to be presented is in the thematic group continuing education. The research conducted by Santos (2012, p. 24) (our translation), sought

[...] to understand the contributions that a formative process based on the action-reflection-planning-action spiral can bring to reflection on and on the practice of these [of] [polyvalent] teachers within the scope of the multiplicative conceptual field.

Counting on the collaboration of 14 multipurpose teachers from circumscribed schools in the State of São Paulo, the author brings in his reflection that the teacher's training on the multiplicative conceptual field, held in 16 meetings, brought contributions of a quantitative-qualitative, didactic, conceptual and resignification of the practice of the professors who participated in the research.

The study by Montenegro (2017, p. 25), which also composes this thematic group, sought to "investigate the development of Pedagogical Knowledge of the Content of polyvalent teachers in teaching the topic water cycle from the contributions of a formative intervention on argumentation". The research had two teachers as participants. In conclusion, it was highlighted that the training contributed to the teaching practice generating more autonomy and power of argumentation with its students.

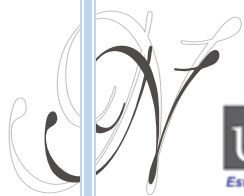
In the same line of reasoning, we would invent the work of Veras (2010) that was performed with 16 teachers. In the research, the author intended,

[...] to investigate the contribution of a group of multipurpose teachers in a collaborative group, which teaches mathematics in the initial grades, in relation to statistical activities, considering the Chevallard Praxeological Organization (1992) and to follow their evolutions within this group (VERAS, 2010, p. 20).

According to the author, the training with the collaborative group showed the good performance with what was proposed and made it visualize the efficiency of the formative action in the field of mathematics teaching. For Veras (2010), the collaborative group was the main exponent of success of the work promoted.

Innocenti (2016) also circumscribed his study in the context of continuing education. In the investigation, he sought "[...] understand how the formative possibilities are constituted in the HTPCs, in the context of a public school in Baixada Santista, having, as research subjects, multipurpose teachers from the early years of elementary school I" (p. 3). According





to the author, through the Collective Pedagogical Work Hour (HTPC) there is a continuous teacher training that despite needing some improvements is a "[...] important space/time for the collective and participatory construction of the school's Political-Pedagogical Project, teaching planning and learning of teachers/students, all the time" (INNOCENTI, 2016, p. 182).

In his research, Magellan (2012, p. 12) (our translation) established as a

[...] to investigate the resignification of the conceptions of multipurpose teachers regarding the use of mathematical games for learning and on their relationship with mathematics, based on continuing education activities.

To achieve this investigative objective, he carried out activities with 09 (nine) teachers of a school in the municipality of São Leopoldo - RS, managing to identify that teachers have difficulties related to mathematics teaching. It was also concluded "[...] that the proposed continuing education provided, for most participants, the beginning of reflections for positive changes in relation to the use of mathematical games and in their personal and professional relationship with mathematics" (MAGALHÃES, 2012, p. 93).

In the santos research (2008), 25 teachers from the municipality of Barueri - SP participated. The author defined as the objective of the study,

[...] to investigate what are the contributions that a continuing education course, which proposes to trigger a reflexive approach on practice, can bring to the development of the multipurpose teacher who teaches mathematics, and what impacts can be observed in his actions in the classroom as a result of his reflections in this training process (SANTOS, 2008, p. 20).

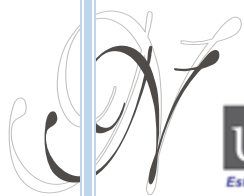
The researcher highlighted the success of continuing education, as well as the good involvement of teachers who materialized during a year of research, based on illustrated and well-articulated statements of the teachers who participated in the dissertation research.

In the analysis we also find Lamberti's work (2014). The author investigated,

[...] knowledge related to the natural number, opportunistic and achieved by the student teachers in the discipline construction of logical-mathematical knowledge, of a specialization course, semi-face-to-face, 'Psychopedagogy focused on the classroom', held for the first time in 2011, in the city of Regente Feijó - SP (LAMBERTI, 2014, p. 09).

The research demonstrated the characteristics of the course and the discipline. After the investigation, the author suggested a stretching of the discipline to contemplate the





necessary subjects, as well as to deepen topics related to the knowledge of mathematics teaching.

Finally, in this thematic group, we have the work of Curilla (2016). In the research, the author aimed,

[...] discuss the contributions of the Curricular Activities of Integration Teaching, Research and Extension (ACIEPEs), offered by the Federal University of São Carlos (UFSCar), for the training of teachers promoted by this institution and for the professional development of teachers of Basic Education (CURILLA, 2016, p. 31).

The interviews were conducted with educational managers in the city of São Carlos - SP. According to the researcher, training should provide and encourage the teacher to be subject of his own practice, contributing to his professional development.

Teaching knowledge

The creation of this thematic group was based on works such as the study of Rocha (2005, p. 05), which aimed,

[...] research the mathematical knowledge acquired by the 'multipurpose' teacher in the training courses – High and Higher Education, to teach such contents in Cycles I and II of Elementary School, as well as their conception of the training received and the teaching developed in these Cycles.

In this research, a questionnaire was applied with 15 teachers. The author shares with the need for the curriculum and, consequently, the practice of the multipurpose teacher to have the duty to be corresponding to the content of the discipline in question (mathematics), to a didactic that overcomes the weaknesses generating teaching knowledge proper to the teaching of Mathematics, arising from the training.

In this investigative path, we also found Silva's (2011) research, in which the author sought "[...] to analyze the contributions of the use of different semiotic representations for the elaboration of geometric concepts by multipurpose teachers", producing teaching knowledge of different nature (SILVA, 2011, p. 21). In view of the objective of the study, the author reports that there is resistance to work with geometry, on the part of teachers in their teaching practice, due to the absence of teaching knowledge that should be built on the teaching of Mathematics. The researcher worked with six elementary school teachers, in the early years, and as an analysis methodology used didactic engineering that aims to "[...]



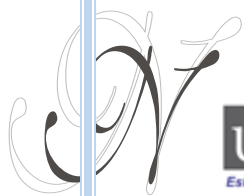


analyze didactic situations, investigating the different relationships between teacher, students and knowledge [...]" (SILVA, 2011, p. 20).

Mingarelli's (2016) research had the participation of three teachers from the municipality of Sumaré - SP, working in Early Childhood Education. The investigation was intended to "[...] to raise the discourses of multipurpose teachers on the English language" (MINGARELLI, 2016, p. 08), together with the teaching knowledge they have about the theme. In the research are addressed the clashes that exist between teachers who have their training in the area and multipurpose teachers, in addition to the developments present in their pedagogical practices and the need to adapt to the demands of contemporaneity.

In Araújo's text (2007), the author signals the claim of "[...] to investigate the teacher's understanding regarding the construction, reading and interpretation of tables and graphs in addition to the concept of arithmetic mean" (p. 05). The study was attended by 81 teachers divided into two large groups. The first group consisted of teachers who had up to 11 years of experience and the second with more than 11 years of teaching in elementary school. In the text, Araújo (2007) reports that there are challenges in the interpretation of tables, graphs, conceptual introduction on average, fashion and median.

Another research that is part of this thematic group is that of Lima (2007) that sought "[...] resignify the importance of the role of the multipurpose teacher of the early years of elementary public-school in the current conjuncture of Brazilian society, highlighting the teaching knowledge and problems in their formation" (p. 07). The author conducted the interview with 20 teachers from public schools in the state of São Paulo. In relation to teaching knowledge, it was pointed out that they are produced in the various experiences that come from the school environment and through the processes of initial and continuing education.



Initial training

In the analysis of the work of this thematic group, we initially have the study by Barros (2016), which sought "[...] understand the initial university education of elementary school teacher I in the Pedagogy Course, considering the perspective of polyvalent proportionality" (p. 15). The research had a close look at the training of the multipurpose teacher, identifying the weaknesses of the course and emphasizing the need for interdisciplinary work of this professional, emphasizing that the initial training for the multipurpose work in Basic Education needs to distance itself from the action of multitasking.

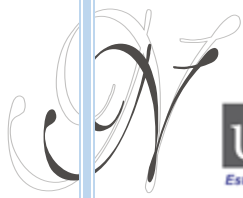
Another study that was linked to initial formation was silva's study (2018). In the research, it was intended "[...] to analyze the contributions of the actions developed in the field of mathematics by PIBID, for the training of the multipurpose teacher at FFCL/Ituverava" (SILVA, 2018, p. 21). For this, an interview was developed with 04 (four) professors in the performance, members of FFCL and PIBID. The author notes, from her research, that there are problems in relation to the training of polyvalent teachers to work with mathematics teaching, which relate to the little study on mathematics teaching in initial teacher education.

Rodrigues (2011) intended to "indicate knowledge necessary to make up a proposal for the teaching of probability-like stakes in the initial mathematical training of multipurpose teachers" (p. 21). The author carried out theoretical research, presenting the need to expand the didactic material to be used in the initial training courses of multipurpose teachers.

Another work that was woven into this line of research, focused on initial teacher training, is that of Kassis (2015). The author tried,

[...] understand to what extent the teaching practice of students graduated from pedagogy courses of private higher education institutions in the municipality of São Paulo, who act as multipurpose teachers of Cycle I of Elementary School in public schools, is impacted by their initial training and, consequently, verify whether these initial higher education courses prepare in line with the need to train teachers in the perspective of polyvalence (KASSIS, 2015, p. 25).

A focus group with 13 teachers and multipurpose teachers was used, among other data production techniques. The author records the existence of a distance between the training of pedagogues in the private institution and the needs of the public school. In addition, it refers to the importance of a teacher education curriculum that develops a closer look at



interdisciplinary practice and also articulates the conduction of internships to the public educational scope.

Teacher training policies

As the first work of this thematic group, Fonseca (2010) had the "[...] intention to show how PCN-Art presents pedagogical work with music and how this work has been developed in elementary school" (p. 09). As a finding, the author reports that teachers are unaware of the orientation of the curricular document in question, do not work with music in an experiential, creative way and even art teachers do not have specific training in music. Fonseca (2010) reports that the PCN-Art, understood as curricular policy, demand and promise teachers "techniques" that are detonators of their training.

In the Ungaro (2014) survey, conducted with six teachers from the first to the third year of elementary school, it was intended "[...] to analyze the curricular process aimed at the teaching of Sciences in the initial years of elementary school developed from the implementation of curricular policies in the municipality of Bauru" (UNGARO, 2014, p. 19). Ungaro (2014) concluded, among other aspects, that curricular policies need to emphasize science teaching in the early years of elementary school, from a critical and contextual approach.

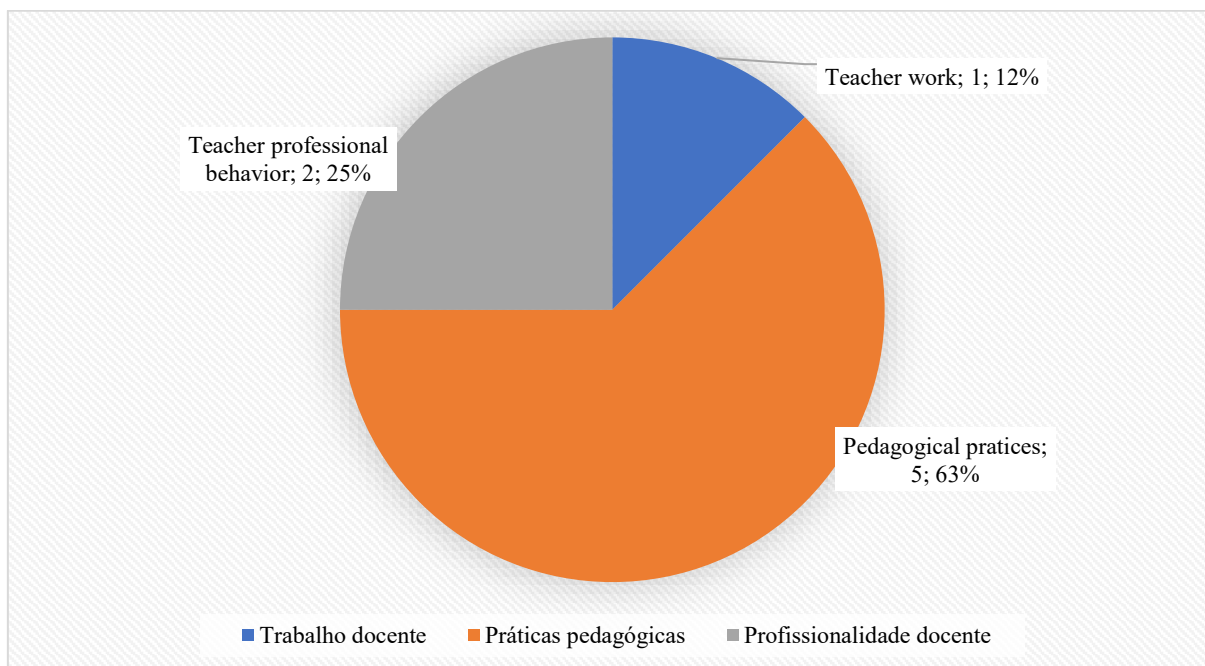
Teacher identity

The last thematic group comprises only the study by Targino (2014). This research was conducted with 06 (six) teachers from the initial years of elementary school, using interviews and requesting a drawing expressing what it is to be a teacher, in the intent of "[...] broaden the understanding of how multipurpose teachers dignify their own teaching experience today" (TARGINO, 2014, p. 72). In textual production, the author records that, by the positioning of teachers, exercising the role of teacher has its influences of times lived in the past, as a student. Being a teacher in the early years of elementary school is also one to become responsible for the other. It is a way of rescuing and welcoming your personal ewe, as a child. In addition, the author points out that teachers often become submissive to the model of educating for the labor market, for approval in external evaluations, for example, which are demands required and tied to modern society.



Finishing the analysis and discussion of the first category about the investigative themes present in theses and dissertations, from this moment on we will dialogue about the second category established in the analysis of the texts, namely: multipurpose teaching in Basic Education. We organized Graph 4 with the data produced in the study.

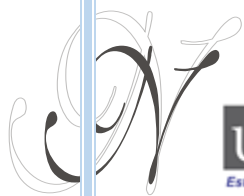
Graph 4 – Themes on multipurpose teaching in Basic Education in theses and dissertations⁸



Source: Prepared by the authors

In the dialog chart, we recorded only three thematic groups. The first represents the "Pedagogical Practices", with 63% (five studies) of the studies. In addition to this, we found research addressing other themes related to teaching (from a multi-purpose perspective), which allowed the creation of thematic groups entitled "Teacher Professionality", 25% (two investigations), and "Teaching work", 12% (one study). As performed in the previous category of dialogue (training of multipurpose teachers), we produced brief considerations about the data illustrated in Graph 4, from each thematic group.

⁸ Orange: Pedagogical practices; Blue: Teacher work; Grey: Teacher professional behavior.



Pedagogical practices

The first work of the thematic group under discussion aimed to "[...] understand the pedagogical practices of the discipline of Teaching Practices in normal courses in the State of São Paulo in the decades [of] 1950 and 1960" that formed multipurpose teachers (CARVALHO, 2008, p. 08). From a historiographical study, the author included the difficulties, advances, memories and records of former normalists, pedagogical practices experienced, as well as other issues characteristic of normal courses in this time frame.

In the same thematic group, Gomes's (2011) research, developed with nine elementary school teachers, aimed to:

To analyze how the actions of producing, appreciating and contextualizing tripods of the Triangular Art Proposal were worked by the teachers of the initial grades of elementary school of the Vila Zilda Natel State School, in the municipality of Guarujá in the 80s and 90s [of the last century] (GOMES, 2011, p. 08).

With an analytical view of pedagogical practices in arts teaching, Gomes (2011) realized that there are problems with the training of multipurpose teachers, given that there is no specific training for work in the teaching of the arts. Almost always, arts teaching is taken from a generalist perspective. This implies in the pedagogical practices developed by the multipurpose teachers in Basic Education.

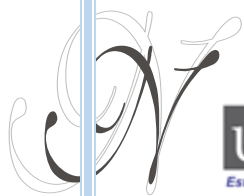
The third work of this thematic group highlighted the

[...] to verify how physical education classes are organized in the series of the initial phase of elementary school, of the municipal public schools of Santo André, described from the view of the multipurpose teachers (PEREIRA, 2007, p. 03).

To carry out the research, the author had the participation of 143 multipurpose teachers, noting a deficit both in teacher education and in pedagogical practices about the teaching of Physical Education.

Composing the thematic group, Correia's study (2009, p. 04) aimed to "Analyze the possibility of re-signification [and reflection] of the teaching activity [pedagogical practice] from the 'mistakes' of the students" in mathematics teaching. The author concluded that

[...] the analysis of the errors of its students is important for reflection on their practices [...] [pedagogical] and that such errors can play a constructive role in the teaching/learning process of Mathematics (CORREIA, 2009, p. 06).



The last work of this thematic group reflected "[...] on the learning process of students in the discipline of Mathematics in basic education and mathematics teaching in the Pedagogy Course" (SANTOS, 2009, p. 18). The research was characterized as a case study conducted in four institutions, with participants who aroused interest in improving their pedagogical practices with regard to mathematics teaching.

Teacher professionalism

Among the works that are in our penultimate thematic group, of the second category, we have the study of Cruz (2012). The author intended "[...] understand the constitution of multipurpose teaching professionalism, highlighting the issue of the mastery of knowledge of reference disciplines and their relationship with didactic-pedagogical knowledge" (CRUZ, 2012, p. 28). The study is located in teaching in the early years of elementary school and its research included 48 teachers from the municipal school system of Recife - PE.

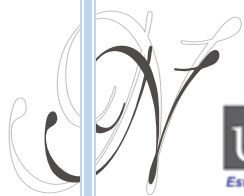
The second and final work of this thematic group showed research that had the participation of 05 (five) teachers from the initial years of elementary school. The study envisioned "[...] to identify the development of the teaching characteristics of multipurpose teachers, specifically, with regard to the teaching of mathematics in the early years" (ALVES, 2019, p. 16). The author identified that teacher essence is part of the experiences and experiences of training and the teaching reality. According to Alves (2019), the initial and continued training of the research teachers is in deficit with regard to the study of mathematical concepts.

Teaching work

In the last thematic group, we have only the study of Andrade (2017). The author's investigation aimed to "[...] to analyze the teaching work in the early years of elementary school of the municipal network of Natal - RN from different perspectives, recognizing its complementarities" (ANDRADE, 2017, p. 23 – 24).

In the research, considerations focused on the work of the multipurpose teacher are elucidated. Among the main aspects, we highlight the loneliness that often surrounds them in the teaching profession. The study highlights the need to strengthen the collective work of teachers. The author also draws attention to the discontent about weekly meetings, given that





there were, on occasions, no focus on teaching work and the study of the profession and demands of the school, such as the study of the Political Pedagogical Project (ANDRADE, 2017).

After the analysis of the texts, we conclude the present research. From a panoramic look we would invent the productions that focus as object of study the training of multipurpose teachers. We understand that the investigation adds to the other studies that investigate teacher education in Brazil. In our context, research on the training of multipurpose teachers is necessary, since there is, as we visualize, many studies with emphasis on the theme, in general.

Final considerations

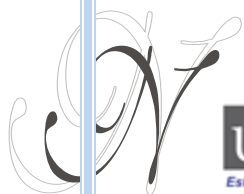
Through the proposed objective of inventorying what the Catalogue of Theses and Dissertations of the Coordination for the Improvement of Higher Education Personnel (CAPES) provides on the training of multipurpose teachers, we did the reading and analysis of 28 dissertation and doctoral texts available for access, of the total of 36 records found. As main considerations, we listed:

From 1999 to 2019, a total of 28 studies on the training of multipurpose teachers are available, which were developed in 18 Brazilian higher education institutions. The productions were woven in ten public universities (state and federal) and eight private institutions. In the public sphere, most of the research is designed in graduate programs in the area of education of federal universities. In addition, we saw that it is in the State of São Paulo the territorial context in which research is concentrated. We did not find investigations developed in institutions in the Northern Region, which points to the need for further research, based on this territorial context.

Although we demarcated 1999 as the initial time frame for the research, we situated texts available for reading and analysis only from 2005. In the searches, academic papers were found before that year, however, we could not access the documents, since they were not authorized for publication or were not available. In this respect, we emphasize that we do not perceive an expressive concentration of academic works in a given period of time. In 2016 we found four texts; the largest number of studies published in a year.

With regard to investigative themes, we understand that the training of multipurpose teachers has been the object of research from different perspectives. There are studies on





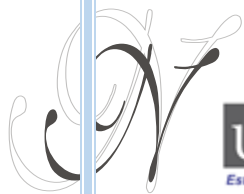
continuing education, initial training, teaching knowledge, pedagogical practices of multipurpose teachers, among others, but there is a greater tendency about the continuing education of multipurpose teachers, being the most investigated theme in the list of academic papers analyzed. We have also seen that the training of multi-purpose teachers with a view to teaching mathematics is a topic of interest by many researchers. Of the 28 studies analyzed, 12 demarcated the training of multipurpose teachers or the multipurpose teaching in Basic Education with emphasis on mathematics teaching.

From the analysis, we also learn that the number of studies that evidence the panorama constructed with research on the training of multipurpose teachers, supported by the Capes Catalogue of Theses and Dissertations, is timid. We understand that there is a considerable period of time in which the Pedagogy Course in Brazil has been training teachers from the perspective of polyvalence. There is a wide production of teacher education in Brazil, according to the study by Medeiros and Aguiar (2018). From what we can see from the bibliographic survey produced, this production on teacher training in the country is not designed with emphasis on the training of multipurpose teachers. Thus, we demarcation the demand for new research.

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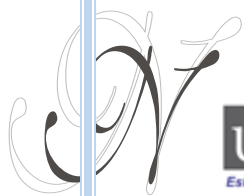
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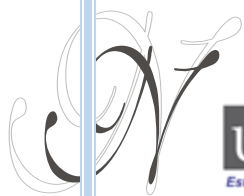
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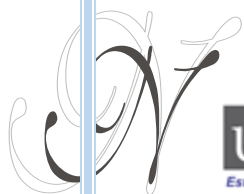
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