

## Teacher training from the perspective of inclusive education: a systematic review

### A formação de professor na perspectiva da educação inclusiva: uma revisão sistemática

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#### ABSTRACT

##### Keywords:

continuing education, teacher, inclusive education, pedagogical coordinator.

The continuing education of teachers is necessary in view of the complexities and evolution of educational methodologies. In this sense, the pedagogical coordinator plays a crucial role in structuring these training courses, considering the profile of the target audience and the school community. It is important to promote the exchange of experiences and encourage reflection on pedagogical practices. The aim is to train investigative and reflective teachers, building substantial knowledge. The lack of contact with inclusive education in initial training is a challenge, requiring more research to support teacher training. This work aims to identify the main methodologies used in the continuing education of teachers, analyzing individual and collective strategies, aiming at inclusive education. Through a Systematic Review, articles between the years 2012 to 2022, in Portuguese, English and Spanish, contained in the Redalyc and Google Scholar databases were analyzed. Among the 2,813 articles initially found, 14 that met the pre-established eligibility conditions were analyzed. About 46% of the analyzed data show a tendency towards continuous, critical and collective training, with a focus on the development of reflective teachers in which the subjective-interpretive methodology prevails, which favors the relationship between the facets of pedagogical work, the constitution of knowledge and the interference in the exercise of practice. Based on these reflections, continuing education should adopt a critical-reflexive perspective, promoting interaction among professors, sharing experiences and collaborative problem solving. The ideal is to boost educational research and transform the role of the teacher, resulting in more meaningful and effective teaching work.

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#### RESUMO

##### Palavras-chave:

formação continuada, professor, educação inclusiva, coordenador pedagógico.

A formação continuada de professores é necessária diante das complexidades e evolução das metodologias educacionais. Neste sentido, o coordenador pedagógico desempenha um papel crucial na estruturação dessas formações, considerando o perfil do público-alvo e a comunidade escolar. É importante promover a troca de experiências e incentivar a reflexão sobre práticas pedagógicas. Deseja-se formar professores investigativos e reflexivos, construindo saberes substanciais. A falta de contato com a educação inclusiva na formação inicial é um desafio,

exigindo mais pesquisas para embasar as capacitações de docentes. Este trabalho tem como objetivo identificar as principais metodologias utilizadas na formação continuada de professores, analisando estratégias individuais e coletivas, visando a educação inclusiva. Por meio de Revisão Sistemática, foram analisados artigos entre os anos de 2012 e 2022, nos idiomas português, inglês e espanhol, contidos nas bases de dados Redalyc e Google Acadêmico. Dentre os 2.813 artigos encontrados inicialmente, foram analisados 14 que atendiam as condições de elegibilidade pré-estabelecidos. Cerca de 46% dos dados analisados mostram uma tendência a formações continuadas, críticas e coletivas, com foco no desenvolvimento de professores reflexivos nas quais prevalecem a metodologia subjetiva-interpretativa que privilegia a relação entre as facetas do trabalho pedagógico, a constituição dos saberes e a interferência no exercício da prática. Sob estas reflexões, as formações continuadas devem adotar uma perspectiva crítico-reflexiva, promovendo a interação entre os professores, compartilhamento de experiências e solução colaborativa de problemas. O ideal é impulsionar a pesquisa educacional e transformar o papel do professor, resultando em um trabalho docente mais significativo e eficaz.

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## **Introduction**

Provided for in the National Education Guidelines and Bases Law (LDBEN), continuing teacher training is seen as a necessity, especially with the exponential evolution of contemporary methodologies and complexities (Louzada, Martins & Giroto, 2015; Teixeira, Amorim, Lopes & Souza, 2018; Zanellato & Poker, 2012).

There is a great deal of diversity when it comes to higher education, so it is important to have continuing training focused on the needs and contexts of the school where the teacher is based. Therefore, one of the primary functions of the professional pedagogical coordinator is to structure and prepare these training courses considering the profile of the target audience and the school community (Louzada, Martins & Giroto, 2015; Oliveira & Chacon, 2013; Teixeira, Amorim, Lopes & Souza, 2018).

Therefore, the coordinator needs to pay attention to the methodologies and strategies applied during the meetings, allowing participants to question the pedagogical practices used in the classroom. Furthermore, depending on the organization of spaces and times within a training course, the exchange of experiences between peers may or may not be privileged (Louzada, Martins & Giroto, 2015; Teixeira, Amorim, Lopes & Souza, 2018).

Ideally, in order to embrace diversity through inclusive education, we want to build a professional teacher with an investigative and reflective profile. In this way, teachers will create substantial knowledge related to the topic during the training (Oliveira & Chacon, 2013; Zanellato & Poker, 2012).

According to Louzada, Martins and Giroto (2015), in terms of initial training, Brazilian teachers complain about the decontextualization of curricula and 70% say they had no contact with inclusive education during the course. It is therefore crucial to increase research based on the subject in order to support training professionals in the development of ongoing teacher training.

From this perspective, the research line Initial and Continuing Teacher Training is adopted. The research problem aims to find out which are the main methodologies used in continuing teacher training by pedagogical management, to work on issues related to inclusive education. The initial hypothesis is that pedagogical coordination tends to apply content exposition strategies to present topics related to inclusive education.

The aim of this work is to identify the main methodologies and strategies used during continuing teacher training applied by the pedagogical management, both individually and collectively. To this end, the basic types of training that exist will be characterized by creating categories of the methodologies found in the studies analyzed and describing the characteristics of the teachers as a result of the strategies applied.

## **Method**

Originating in the medical sciences, a Systematic Review (SR) is a type of secondary study that aims to combine, evaluate and synthesize the results of independent studies. A question is used to define the data collection strategies (Cordeiro, Oliveira, Rentería & Guimarães, 2007). Thus, this approach makes it possible to verify in the published articles a linearity that promotes reflective and inquisitive teacher training.

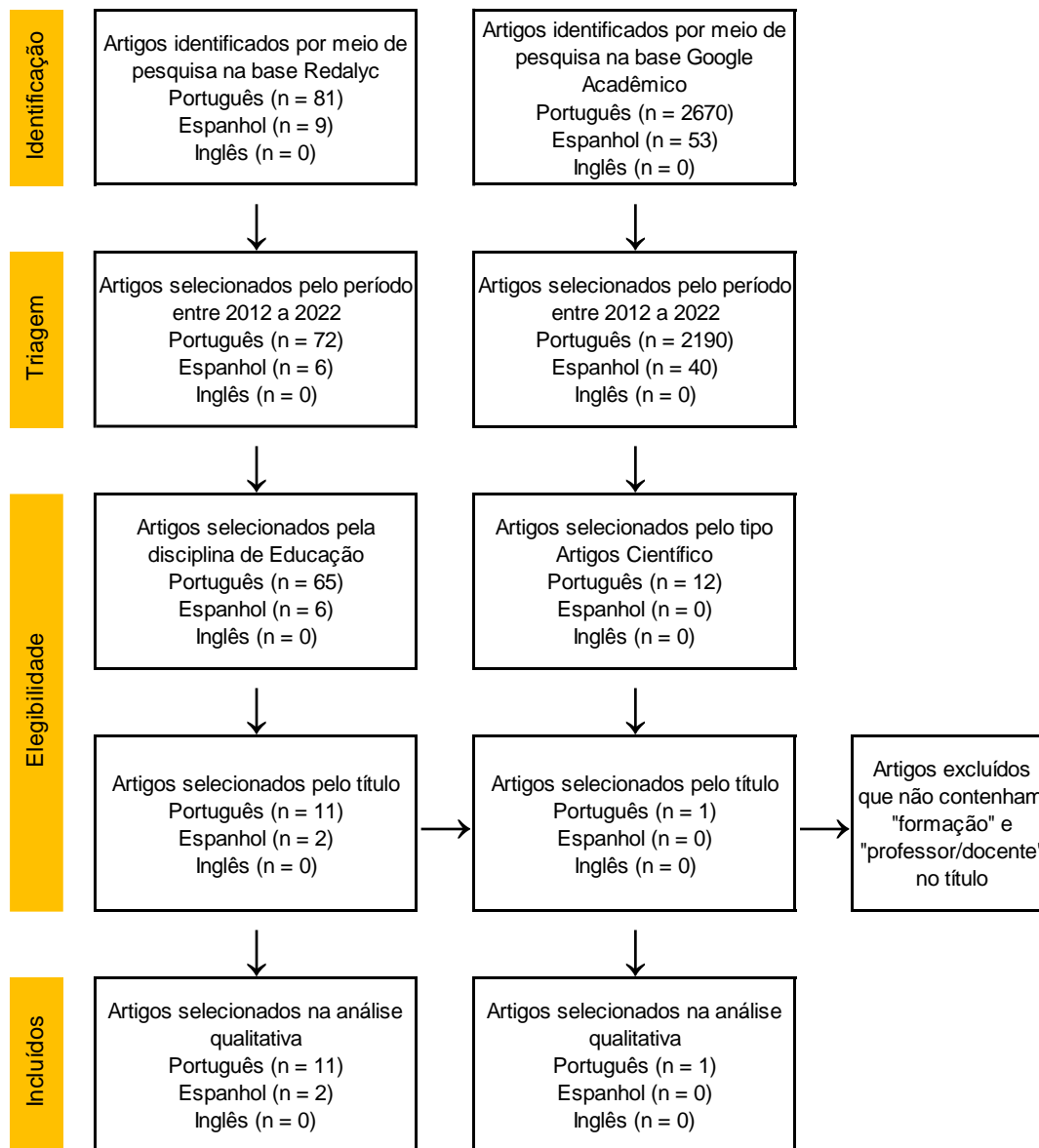
To this end, the method called Principal Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) will help systematize and analyze the data in order to produce estimates. The PRISMA recommendation consists of a checklist containing 27 items (Galvão, Pansani & Harrad, 2015). The data collection process and list will be analyzed based on main

categories (teacher, methodology, research, learning and training) and subcategories created from different authors.

The databases used were Redalyc and Google Scholar, since they have a vast presence of relevant articles in the languages covered: Portuguese (PT), the author's mother tongue, and English (ING) and Spanish (ES) in order to increase the scope of the research. The keywords selected were searched in the three languages mentioned.

**Figure 1**

*PRISMA flowchart of the selected articles*



Note. Prepared by the author (2024)

The time frame considered was the last five years, from 2012 to 2022, because despite the compulsory nature of subjects dealing with inclusive education in initial teacher training, the diversity of contexts requires continuous training. To achieve the purpose of the research, the terms “inclusive education”, “pedagogical coordination”, “continuing education” and “teacher” were used, extracted from the focus field of this study with the help of the Boolean operator AND.

In Portuguese, we used the terms "formação continuada" AND "professor" AND "educação inclusiva" AND "coordenador pedagógico", em inglês utilizou-se "continuing training" AND "teacher" AND "inclusive education" AND "pedagogical coordinator" e, em espanhol, "formación continua" AND "profesor" AND "educación inclusiva" AND "coordinador pedagógico" In addition, language filters have been added to searches.

Initially, 90 articles were found on Redalyc in December 2022 and, after screening and meeting the eligibility criteria, 71 articles remained. In Google Scholar, the search resulted in 2723 review articles published in the pre-established period, leaving 12 in Portuguese and 2 in Spanish (Figure 1).

The 14 articles included in the meta-analysis prioritized the keywords previously described. Based on these results, the articles were checked against the initial question and hypothesis. The final selection criteria began with (1) analysis of the title, excluding those that did not contain "training" and "teacher", (2) the incidence of keywords in the text and (3) the presence of the theme of inclusive education (Table 1).

**Table 1**

*Articles included*

<b>Article</b>	<b>Base</b>	<b>Author</b>	<b>Year</b>	<b>Title</b>
1	Redalyc	Miriam Santana Teixeira, Antonio Amorim, Mariana Moraes Lopes, Amilton Alves de Souza	2018	O coordenador pedagógico como articulador da formação de professores e de sua identidade profissional
2	Redalyc	Daniella Zanellato, Rosimar Bortolini Poker	2012	Formação continuada de professores na educação inclusiva: a motivação em questão
3	Redalyc	Rayssa Maria Anselmo de Brito, Eduardo Jorge Lopes da Silva	2021	A interseccionalidade dos estudos da EJA, Educação Inclusiva e Formação Docente: um estado do conhecimento
4	Redalyc	Karlane Holanda Araújo, José Melinho de Lima Neto	2017	O pacto nacional pelo fortalecimento do ensino médio: limites e possibilidades da formação e atuação docente no campo da educação inclusiva
5	Redalyc	Danúsia Cardoso Lago, Dulcéria Tartuci	2020	Consultoria colaborativa como estratégia de formação continuada para professores que atuam com estudantes com deficiência intelectual
6	Redalyc	Anna Augusta Sampaio de Oliveira	2018	Encontro entre Educação Especial e Educação Inclusiva: a formação de professores-mediadores na área da deficiência intelectual
7	Redalyc	Ana Paula Zerbato, Enicéia Gonçalves Mendes	2021	O desenho universal para a aprendizagem na formação de professores: da investigação às práticas inclusivas
8	Redalyc	Anna Augusta Sampaio de Oliveira, Miguel Claudio Moriel Chacon	2013	Formação em educação especial no brasil: retrospectiva e perspectiva contemporânea
9	Redalyc	Aline Tamires Kroetz Ayres Castro, Andrea Cristiane Maraschin Bruscato, Denice Aparecida Fontana Nisxota Menegais, Elizabeth Diefenthaler Krahe	2014	A formação continuada de professores e a prática da sala de aula
10	Redalyc	José Mendes Fonteneles Filho, Francisca Geny Lustosa	2018	Inovação pedagógica, inclusão e interculturalidade na formação de professores em pedagogia e magistério indígena na Universidade Federal do Ceará
11	Redalyc	Evani Andreatta Amaral Camargo, Maria Inês Bacellar Monteiro, Ana Paula de Freitas	2016	Trabalho docente no contexto da inclusão: formação continuada com enfoque colaborativo
12	Redalyc	Sandra González Miguel, Cristina Mayor Ruiz, Elena Hernández de la Torre	2019	Obstáculos y necesidades en la trayectoria formativa y profesional del profesor mentor principiante
13	Redalyc	Juliana Cavalcante de Andrade Louzada, Sandra Eli Sartoreto de	2015	Formación de profesores en la perspectiva de la educación inclusiva en Brasil

Article	Base	Author	Year	Title
14	Google Scholar	Oliveira Mar, Claudia Regina Mosca Giroto Bárbara Amaral Martins, Miguel Claudio Moriel Chacon	2019	Autoeficácia docente e Educação Especial: revisão da produção de conhecimento nacional e internacional com ênfase na formação de professores

Note. Prepared by the author (2024)

Through bibliographic research, categories and subcategories of the main actors found in the process of continuing teacher training were created in order to detect regularities in the selected studies.

**Table 2**

*Categories for analysis*

Category	Subcategory	Indicators	Authors
Professor	Teacher behavior manager	Traditional learning	Borges, 2001
	Reflective teacher	Cognitive learning	Fagundes, 2016
	Research professor	Contextualized learning	
Methodology	Psycho-cognitive	Structuring knowledge Contextualization	Borges, 2001; Ferreira, Santos and Costa, 2015
	Subjective-interpretive	The relationship between the facets of pedagogical work The constitution of knowledge Interference in the exercise of practice	
	Curriculum	The influence of the curriculum on teaching practice	
	Professional	Teacher producer of knowledge	
Research	Process-product	Teacher knowledge Teacher behavior management	Borges, 2001; Ferreira, Santos and Costa, 2015
	Cognitivist	Teacher thinking Reflective teacher	
	Interactionist-subjectivist	Teaching history Teacher researcher	
Learning	Individual	Self-training lecture	Ferreira, Santos and Costa, 2015
	Press conference	Workshop Seminar Study groups	
Training	Classic	Self-training lecture	Ferreira, Santos and Costa, 2015
	Review	Workshop Seminar Study groups	

Note. Prepared by the author (2024)

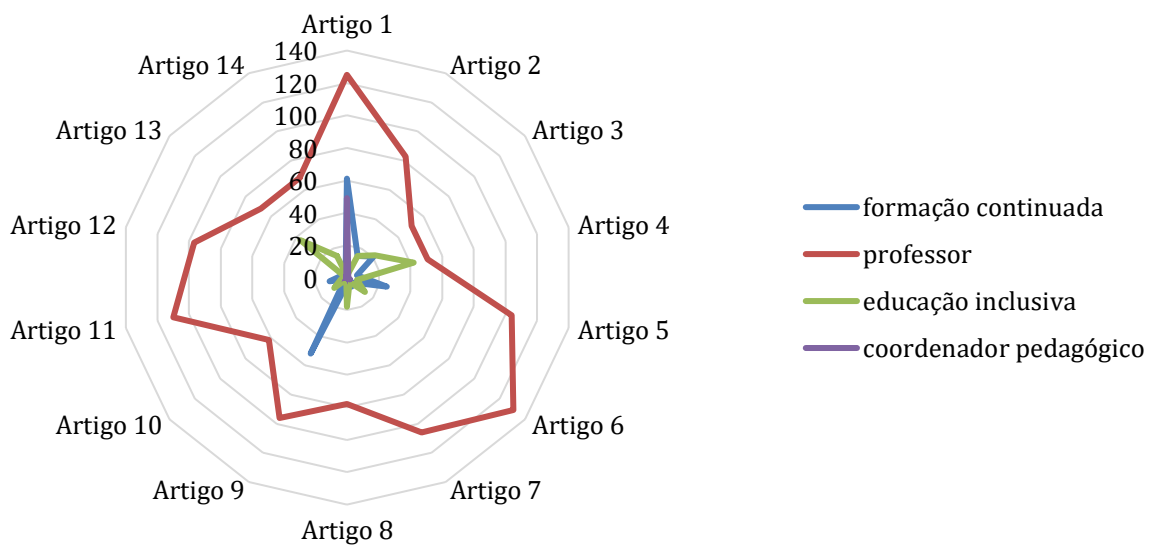
## Results

The initial interest is in checking the methodologies applied during continuing teacher training. It is hoped that the studies analyzed will show a preponderance of training courses aimed at preparing reflective-researcher teachers, where teachers' thinking and history are taken into account.

In this way, learning allows the student to play a leading role, enabling the content presented in the classroom to be given meaning and context and forming subjects in an integral way. This is also true of the articles studied, as they emphasize the importance of the teacher in the learning process itself (Figure 2).

**Figure 2**

*Incidence of keywords in articles*



Note. Prepared by the author (2024)

The aforementioned factor is observed when searching for keywords (Figure 3) in the length of the articles. The term teacher appears in 1230, which represents 72.5% of the overall sum. Followed by "continuing education" with 12.9%, "inclusive education" with 11.11% and "pedagogical coordinator" with 3.5%.

**Figure 3**

*Number of keywords*



Note. Prepared by the author (2024)

The surveys had a sample of 425 people, divided into teachers (93.2%), pedagogical coordinators (4.2%), undergraduate students (1.6%), scientific initiation scholarship holders (0.2%) and researchers (0.7%). Among the articles based on bibliographic research, the sample included articles (40.7%), theses (0.5%), dissertations (1.6%) and course syllabuses (57.1%) (Table 3).

**Table 3**  
*Characteristics of the articles included*

Article	Title	Instrument	Sample	Population
1	The pedagogical coordinator as an articulator of teacher training and professional identity	Field research with semi-structured interviews	16	Pedagogical coordinators from Salvador's municipal education network working in Youth and Adult Education (EJA)
2	Continuing teacher training in inclusive education: motivation in question	Questionnaire	105	Regular school teachers from the São Paulo municipal school system
3	The intersectionality of YAE studies, Inclusive Education and Teacher Training: a state of knowledge	Bibliographical research	4	Articles, theses and dissertations
4	The national pact to strengthen secondary education: the limits and possibilities of teacher training and action in the field of inclusive education	Bibliographical research	-	-
5	Collaborative consultancy as a continuing education strategy for teachers working with students with intellectual disabilities	Collaborative research	6	Goiás state school teachers
6	Encounter between Special Education and Inclusive Education: the training of teacher-mediators in the field of intellectual disability	Questionnaires, descriptive comments and field diary entries	220	Specialist teachers from the São Paulo Municipal Education Network
7	Universal design for learning in teacher training: from research to inclusive practices	Collaborative research	17	Basic education teachers and undergraduate students
8	Special education training in Brazil: retrospective and contemporary perspective	Historical retrospective	-	-
9	Continuing teacher training and classroom practice	Qualitative descriptive research using a questionnaire	24	Teachers from the municipal public elementary school system in the city of Porto Alegre in Rio Grande do Sul
10	Pedagogical innovation, inclusion and interculturality in teacher training in pedagogy and indigenous teaching at the Federal University of Ceará	Bibliographical research of ethnographic notes	-	-
11	Teacher work in the context of inclusion: continuing education with a collaborative approach	Meetings with filming and field diary reports	27	Elementary school teachers from a public school, pedagogical coordinators, scientific initiation scholarship holders and researchers
12	Obstacles and needs in the training and professional path of the novice mentor teacher	Self-presentation guides, biograms and critical incidents	10	Beginning mentor teachers
13	Teacher training from the perspective of inclusive education in Brazil	Consult curriculum matrices	104	Degree courses in the humanities, biological and exact sciences at Brazilian public universities
14	Teacher self-efficacy and Special Education: a review of national	Systematic review	74	Articles



Article	Title	Instrument	Sample	Population
	and international knowledge production with an emphasis on teacher training			

*Note.* Prepared by the author (2024)

When studying the selected publications, one can see a concern related to the initial or continuing training of teachers to meet the demands arising from school spaces due to the diversity of student profiles, as can be seen from the data shown in the table (Table 4).

**Table 4**

*Relevant data*

#	Authors	Relevant data
1	Teixeira, Amorim, Lopes and Souza, 2018	Educational managers need to recognize the importance of their role as facilitators of continuous teacher development, prioritizing the school as the ideal space for this training. It is essential to look for strategies to involve the school community, building an environment of positive relationships and contributing to an emancipatory and autonomous pedagogical practice.
2	Zanellato and Poker, 2012	The results showed that the teachers enrolled in the specialization course have motivation related to their career stage, professional performance and educational background. Many had contact with inclusion during their initial training and are seeking further training in the area. It is important to create public policies and partnerships to subsidize training courses and programs in the different areas of disability, with a view to quality inclusive education.
3	Brito e Silva, 2021	We conclude that teacher training at the intersection of Youth and Adult Education and Special Education is under-researched, but essential for inclusive education. There is an urgent need to bring school realities and inclusive challenges into training contexts, through investments that foster truly inclusive Youth and Adult Education.
4	Araújo and Neto, 2017	The teacher training program of the National Pact for Strengthening Secondary Education does not adequately address inclusive education, restricting teachers' discussions and limiting access to scientific knowledge. It is essential to rethink and update the program to prepare teachers and pedagogical coordinators to meet the special needs of students, promoting an inclusive education that breaks with the segregated and exclusionary model.
5	Lago and Tartuci, 2020	It was concluded that the initial and ongoing training of teachers needs to be rethought in order to promote inclusive education. The participants agreed that a collaborative course is more effective in meeting the demands of school inclusion, involving teachers, management and administrative teams. This training encourages the reconstruction of professional training, strengthening autonomy and the critical and emancipatory perspective of the teaching role.
6	Oliveira, 2018	The reports and descriptions of the study reveal the challenges faced by schools and the Brazilian education system due to the precarious economic situation in some regions, affecting family and school relationships. Specialized teachers play an important role, and the training made it possible to discuss educational problems in the wider context and to consider both the particularities of intellectual disability and general changes beneficial to all.
7	Zerbato and Mendes, 2021	Training strategies based on the principles of DUA and collaboration were effective in the initial and ongoing training of the participants. It is necessary to invest in new training models that allow professionals to experience these aspects during their training process. However, the lack of an inclusive culture in schools often prevents teachers from changing their practices, even after acquiring new knowledge. Despite this, the training program contributed to the participants' efforts to ensure the education of students with special needs. It is important to reflect on new models of teacher training that are more contextualized and diverse.
8	Oliveira and Chacon, 2013	The lack of a unified policy and proposal for special education training in Brazil has resulted in the construction of different models. This creates a risk, because any model can be considered valid. It is important that political and administrative bodies establish training guidelines, respecting the autonomy of institutions, but also ensuring that teachers are trained to deal with the complexity of inclusive and special education. Contributing to fair and egalitarian educational systems, promoting the development of students' higher psychological abilities, as demonstrated by Vygotsky.

#	Authors	Relevant data
9	Castro, Bruscato, Menegais and Krahe, 2014	This preliminary study shows that changes occur in pedagogical practices and in the construction of knowledge when teachers seek continuing education. However, quality is not guaranteed through this training alone, due to issues of salary, resources and career plans. Brazilian educational legislation recognizes the importance of continuing education for valuing education professionals. It is essential that teachers improve their teaching practice and seek continuing training, developing new skills to improve their teaching.
10	Filho and Lustosa, 2018	It reaffirms the idea that cultural diversity, inclusion and innovation are essential elements for building quality education. The experience with indigenous peoples and people with disabilities shows the importance of resistance and overcoming in the search for rights. Inclusive education requires structural changes, the elimination of physical barriers and an appreciation of diversity. Public universities have a responsibility to combat historical social exclusion and contribute to equal opportunities. The effective inclusion of students requires measures of permanence, participation and protagonism. Transforming universities into inclusive spaces is a challenge that requires discussion and action.
11	Camargo, Monteiro and Freitas, 2016	It was observed that collaborative work helped teachers to reflect on their actions with these students. During the meetings, the researchers highlighted the teaching practices already carried out by the teachers, encouraging them to focus on possibilities rather than limitations. The study revealed challenges in teacher training and a lack of dialogue between specialized professionals and teachers. In addition, the constant external demands interrupted collaboration. It is necessary to strengthen collaborative work and offer theoretical and practical support to teachers in order to promote school inclusion. The research highlights the importance of collaboration between teachers and university researchers, who discuss issues related to teaching students with disabilities. It is essential to overcome limited views of disability and adopt forward-looking teaching approaches based on historical and cultural perspectives.
12	Miguel, Ruiz and Torre, 2019	The results show that the findings respond to the training and professional needs of novice mentor teachers, in line with the general objective of the study. The research questions addressed the educational and professional backgrounds of novice mentors, the dedication to mentoring and the professional needs encountered in practice, and the obstacles in the mentors' professional and educational trajectories. They were identified needs for ongoing training and institutional support to strengthen the figure of the mentor.
13	Louzada, Martins and Giroto, 2015	Based on the results found, the operation of inclusive education systems is a challenge for education professionals. The main objective is to guarantee access and permanence for all students, regardless of their socio-economic, ethnic-racial, gender and cultural diversity. It is necessary to overcome the barriers that make educational spaces inefficient and to value the potential of students, including those with disabilities. Teachers need to be trained and work collaboratively to develop an accessible curriculum. In addition, public policies and teacher training must be in line with legislation and promote educational quality. Formative evaluation and quality indicators are important to drive the necessary transformation.
14	Martins and Chacon, 2019	Teachers' self-confidence, motivation and effort are essential for the inclusion of students with disabilities, global disorders or high abilities. Few Brazilian studies have investigated teacher self-efficacy and Special Education from an inclusive perspective, without addressing teacher training. In the international context, studies show that training can increase teacher self-efficacy, especially when there is theory-practice integration. Vicarious experiences in initial and continuing training can strengthen self-efficacy, providing the acquisition of new skills based on successful inclusive situations.

*Note.* Prepared by the author (2024)

When analyzing the profile of the publications in the context of the categories, only one production did not meet the requirements and made categorization impossible due to the methodology model adopted. Thus, the production of the authors Martins and Chacon (2019) was left out of the results (Table 5).

**Table 5**

*Works by category*

Category	Subcategory	Quantity	Articles
Professor	Teacher behavior manager	5	1, 3, 8, 12, 13
	Reflective teacher	6	2, 4, 5, 7, 9, 11
	Research professor	2	6, 10
Methodology	Psycho-cognitive	3	2, 5, 10
	Subjective-interpretive	5	3, 7, 9, 11
	Curriculum	2	4, 8
Research	Professional	3	1, 6, 12
	Process-product	4	1, 4, 12, 13
	Cognitivist	6	2, 3, 5, 7, 8, 9
Learning	Interactionist-subjectivist	3	6, 10, 11
	Individual	3	1, 8, 12
	Press conference	10	2, 3, 4, 5, 6, 7, 9, 10, 11, 13
Training	Classic	4	1, 2, 3, 8
	Review	9	4, 5, 6, 7, 9, 10, 11, 12, 13

*Note. Prepared by the author (2024)*

## Discussion and conclusions

The school is an environment where there are different actors, among the main ones are the management, the teachers and the students. From a hierarchical point of view, the management's role is to promote the improvement of teachers through ongoing training, whether inside or outside the school environment. There are cases in which managers seek partnerships with third sector organizations or higher education institutions, or provide training based on their own experiences. The articles were analyzed based on five categories: teacher, methodology, research, learning and training.

### **The approaches adopted in continuing training**

In general, continuing education has a classic approach, characterized by the transfer of knowledge without taking into account the experience and knowledge acquired by teachers, as well as their training needs, or a critical approach that seeks to offer teachers training that promotes reflection on their practice, problem-solving based on their reality and development through collaborative processes (Ferreira, Santos & Costa, 2015).

In this sense, critical approaches prevailed in 69% of the articles, in which training is based on school experiences and contexts, prioritizing reflective cycles through the analysis of educational data, official documents, curricula and bibliographic research (Castro, Bruscatto, Menegais & Krahe, 2014; Amaral, Bacellar & Freitas, 2016; Araújo & Neto, 2017; Filho & Lustosa, 2018; Oliveira, 2018; Miguel, Ruiz & Torre, 2019; Lago & Tartuci, 2020; Zerbato & Mendes, 2021). However, the classic approach is still perceived, in 31% of the articles, when training courses are developed with little consistency, without dialog or moments of reflection where activities pre-established by the Education Departments prevail (Zanellato & Poker, 2012; Teixeira, Amorim, Lopes & Souza, 2018; Brito & Silva, 2021). In the case of research with

the strands of literature review or analysis of higher education, both approaches are conceived (Oliveira & Chacon, 2013; Louzada, Martins & Giroto, 2015).

### **Teaching methodologies**

In addition to the type of approach, there is the methodology applied during the training sessions. In this way, we used the theories listed by Borges (2001): the psycho-cognitive, which emphasizes the mental structuring of knowledge; the subjective-interpretative, which highlights phenomenological and symbolic aspects of knowledge; the curricular, which examines how knowledge influences teaching practice; and the professional, which recognizes teachers as producers of practical knowledge, adapting to the constantly changing realities of teaching (Borges, 2001; Ferreira, Santos & Costa, 2015).

Most of the articles, 38% of the total, contain the subjective-interpretative approach in which teachers play an essential role in the quality of education, learning from both practice and theory through critical reflection on experience (Castro, Bruscatto, Menegais & Krahe, 2014). For Louzada, Martins and Giroto (2015), the provision of teacher training should review the educational process, focusing on improving learning conditions to promote educational quality for all students, including those with disabilities, global development disorders and high abilities, overcoming the barriers that make them inferior and inefficient in educational spaces.

The biggest challenge encountered in building collaborative training is the lack of dialogue between specialized professionals and school teachers, as well as the shortage of time to deal with complex issues such as the literacy of students with disabilities, requiring approaches that go beyond discussions with teachers (Camargo, Monteiro & Freitas, 2016). Brito and Silva (2021) show that there is an urgent need to invest in continuing training which, by being aligned with school practice and realities, becomes a space for reflection and the promotion of new practices. Zerbato and Mendes (2021) present a proposal to use Universal Learning Design (ULD) as the focus of training where each meeting of the training program was adapted according to the demands and progress of the participants over eleven meetings, with continuous evaluation and replanning to meet the needs of the group, maintaining the objectives of the training and based on international studies.

On the professional side, with 23% of the articles, there is a concern about the continuing training provided by pedagogical coordinators, since it was observed during visits to schools and interviews with them that the practice in schools differs from what is indicated by theorists and legal documents. The majority of coordinators don't plan ongoing training for teachers, citing a lack of time and difficulty in engaging them. (Teixeira, Amorim, Lopes & Souza, 2018).

One way out of this problem would be the methodology of training teacher multipliers, also known as the pyramid strategy, which although little studied in the literature, is widely used in public health and education policies, with the aim of disseminating knowledge through teacher-mediators. (Oliveira, 2018). In this way, Miguel, Ruiz and Torre (2019) state that professional knowledge is differentiated and epistemologically constructed from the integration and transformation of diverse knowledge, know-how and conceptions from different sources. In addition, it is acquired by teachers through their own experience, accompanied by knowledge and conceptions, and is the basis of professional competence.

Psycho-cognitive theory is seen in 23% of the papers, one of which focuses on instruction with a priority on paradigm shifts in educational practices, based on the needs of students in the classroom. (Zanellatto and Poker, 2012). In another, more experienced volunteer teachers from different locations and higher education institutions offered classes and guided, as well as monitoring, the curricular activities carried out exclusively in an indigenous village (Filho & Lustosa, 2018). Finally, the configuration of educational consultancy was presented, in a collaborative way so that the experts could structure the training, semi-structured interviews were necessary in order to prioritize the real needs of the teachers (Lago & Tartuci, 2020).

Finally, the curricular approach, represented by 15% of the papers, is directly linked to the initial and continuing teacher training provided by higher education institutions, in which it is emphasized that teacher training for special education in Brazil is constantly evolving, influenced by national and international policies and, although there are different training instances, the states have sought to train teachers in accordance with the national inclusion policy, respecting the legislation and guaranteeing differentiated training (Oliveira & Chacon, 2013). To this end, the courses must emphasize the connection between theory and practice, based on the mastery of scientific and didactic knowledge, valuing the school as a space for continuous training and collective construction of the political-pedagogical project (Araújo & Neto, 2017).

### **Types of learning during training**

Regarding the type of learning, it can be collective or collaborative, based on the principle of "learning with others", in which training is carried out in a group and with a collaborative approach, and can be carried out both face-to-face and online, and involves setting common learning goals and objectives for a specific group. And, individual, characterized by an individualizing and instrumental approach, in which the content is prepared by specialists and presented to teachers in group meetings, with little value being placed on the theoretical and practical knowledge that teachers already have in their experience (Ferreira, Santos & Costa, 2015).

Around 77% of the articles focus on collective learning, among which the São Paulo Department of Education promoted two continuing education courses related to deafness and intellectual disability for public school teachers (Zanellatto and Poker, 2012). Castro, Bruscato, Menegais and Krahe (2014) emphasize the importance of a teacher undergoing reflective training, as they tend to multiply these attitudes and actions with their students, resulting in reflective practice in pedagogical meetings, interviews with pedagogical coordination, training courses, class councils, among others, which leads to an active relationship in the search for solutions to problems and difficulties.

From this perspective, Louzada, Martins and Giroto (2015) emphasize that teacher training courses, both initial and continuing, should promote the appropriation of knowledge about current legislation, as well as the recognition of school problems and the limitations of initial training proposals in Pedagogy courses and other degrees. In addition, they must guarantee opportunities for constant updating, instruction in new methodologies and collective and interdisciplinary work, essential conditions for overcoming the fragmentation of disciplines, which are currently worked on in isolation.

Still with a view to collective learning, on some occasions different audiences take part in the training, including pedagogical coordinators, researchers and teachers, promoting a rich exchange of experiences. (Camargo, Monteiro & Freitas, 2016). However, attention must be paid to the suitability of the proposal for the public, plastered formations do not respond to existing gaps without debates on experiences (Araújo & Neto, 2017). Focusing training, for example, on existing documentation can be an interesting starting point. However, the agenda should be prepared collaboratively with teacher-mediators or external researchers (Oliveira, 2018; Lago & Tartuci, 2020; Zerbato & Mendes, 2021), with the possibility of a training proposal aimed at tackling local problems (Filho & Lustosa, 2018; Brito & Silva, 2021).

From an individual or instrumental point of view, 23% of the studies have this characteristic. Although important, there are situations in which the coordinator's workload does not allow for adequate training, and it has been found that these professionals do not develop consistent and effective training actions with EJA teachers, do not promote collective moments of reflection on pedagogical practice and are more involved with routine activities than with continuing training, facing resistance from some teachers (Teixeira, Amorim, Lopes & Souza, 2018).

However, a promising case of individual training is mentoring, in which the mentor teacher is defined as an experienced teaching professional, recognized for their teaching quality and intervention in innovation projects, who establishes a dyadic relationship with a novice teacher, providing guidance and advice (Miguel, Ruiz & Torre, 2019). Some works show that learning is mixed, collective and individual, depending on the type of activity carried out by the teacher, since the training has both face-to-face and online parts (Oliveira & Chacon, 2013).

### **Teacher-student profile**

The actor in continuing education is the teacher, and depending on the type of learning applied, a professional profile is developed. Under this analysis, we have divided the category into three approaches: the behaviour manager teacher who acts as a manager of student behaviour, whose aim is to optimize the teaching process to obtain the best possible learning outcome and the training courses emphasize a set of teacher behavioural variables and their immediate effects on students; the reflective teacher who reflects on their own practice and devises strategies based on it, taking their school reality as an object of research, reflection and analysis, supported by tutored training and learning in action to train reflective professionals in these areas; and the researcher teacher who searches for the best way to teach and learn, like an artist who uses different materials to create more appropriate solutions, so training courses have the importance of recognizing teachers as subjects capable of experimenting in their practice and generating theories from it (Borges, 2001; Fagundes, 2016)..

The studies analyzed contain 46% in the reflective teacher category, the construction of the political identity of the teaching staff is strengthened in the new spaces, promoting reflections and discussions on specialized education for students with disabilities and driving the implementation of more effective public policies, evidencing the initiative and motivation of teachers to seek information and share reflections on practice through continuing education from the perspective of inclusive education, even paying for their own improvement (Zanellatto and Poker, 2012; Araújo & Neto, 2017; Zerbato & Mendes, 2021).

In this way, continuing education helps teachers to be reflective, promoting changes in their practices, allowing them to recognize and understand their difficulties, as well as develop strategies to overcome them (Castro, Bruscatto, Menegais & Krahe, 2014; Lago & Tartuci, 2017). It is therefore important to strengthen the teacher's power to act, helping them to identify difficulties and possibilities in teaching students with disabilities, enabling them to act in favor of teaching and their own training as educators, providing a more in-depth knowledge of the professional genre and its technical and semiotic tools (Camargo, Monteiro & Freitas, 2016).

In the teacher behavior management category, represented by 38% of the articles, the training provided by higher education institutions is aligned with the basic knowledge required for teacher training without meeting the specific needs of teachers (Oliveira & Chacon, 2013). Many courses have an archaic approach, in which content prevails to the detriment of experience (Louzada, Martins & Giroto, 2015), stifling teachers' professional trajectories and aiming for an approach that is not very inclusive and decontextualized (Teixeira, Amorim, Lopes & Souza, 2018). On the other hand, in individual training through mentoring, while the mentor creates content based on their experiences, the mentee exposes their anxieties in an attempt to resolve them (Miguel, Ruiz & Torre, 2019). In all cases, studies focused on teaching processes prevail (Brito & Silva, 2021).

The research professor, the ideal teacher profile, contributes 15% of the publications. This is seen in mentoring, in which the idea of the training is to multiply knowledge through teacher-mediators, disseminating it and intervening as a multiplier effect (Oliveira, 2018) and in training designed for a community and in order to meet the particular demands of a given region (Filho & Lustosa, 2018).

### **Focus applied to research**

The analyses culminate in types of research: the process-product whose aim is to examine how teachers' actions during teaching affect students' learning; the cognitivist centred on cognitive aspects, thinking and the construction of schemas that recognizes the complexity of the teaching profession, which requires contextualized, interactive and speculative knowledge, being concerned with the processing of information and the processes of knowledge construction in teaching-learning; and the interactionist-subjectivist approach, which focuses on the individual as a being endowed with stories, who constructs the world in relation to others. Teaching is then seen as a form of symbolic interaction, in which subjects act depending on the meaning that knowledge has for them (Borges, 2001; Ferreira, Santos and Costa, 2015).

Around 46% of the studies are based on the cognitivist perspective, in which teachers seek information and reflect on educational practices, taking part in continuing training to meet the needs and demands of everyday school life, both inside and outside the classroom (Zanellatto and Poker, 2012; Oliveira & Chacon, 2013). Teachers play a fundamental role in the quality of education, as they learn from both practice and theory, critically reflecting on their experiences to improve their knowledge and professional performance (Castro, Bruscato, Menegais & Krahe, 2014; Lago & Tartuci, 2014).

From this perspective, the training of a reflective teacher needs to look at the subject's life story, as well as strengthening collaborative work (Brito & Silva, 2021). Therefore, collaborative training, based on the concept and principles of DUA, can promote inclusive pedagogical practices, reflection and the construction of new knowledge, aiming at the participation and learning of all, including Special Education students (Zerbato & Mendes, 2021).

In the 31% of articles within the process-product category, the need to guarantee the opportunity for constant updating, instruction in new methodologies and collective and interdisciplinary work stand out, essential conditions for developing the ability to overcome the fragmentation of disciplines, which are currently worked on in isolation (Louzada, Martins & Giroto, 2015). It is worth highlighting the prioritization of articulation between teachers and coordinators within the context of the work, through systematic meetings in the school, mediated by the study advisor (Araújo & Neto, 2017) in the format of reflection workshops, collaborative work or communities of practice, as they have proven to be formative and effective, allowing greater adherence to the reality of the teacher and promoting the legitimization, resignification or overcoming of their repertoires of practices in different school contexts.

In this way, teachers get together to study, analyze the curriculum, reflect and propose changes to the content being worked on, carrying out research and internal evaluations, favoring interaction in the workplace (Teixeira, Amorim, Lopes & Souza, 2018), bringing together experienced and novice teachers to provide the emotional and pedagogical support of an experienced mentor. (Miguel, Ruiz & Torre, 2019).

In the interactionist-subjectivist perspective, 23% of the works were categorized, revealing challenges mainly during collaborative training, partly due to the lack of dialogue (Camargo, Monteiro & Freitas, 2016). One way out of this is to promote training sessions with external experts, where discussions and analysis of the evaluation process and school procedures take place, as well as sharing experiences and online help desks to clarify and monitor staff difficulties (Oliveira, 2018). In addition, mentoring in partnership with higher education institutions helps teachers to see research as part of their daily professional life (Filho & Lustosa, 2018).

Based on these discussions, the research resulted in a training profile, which is not necessarily the most appropriate in the face of new discoveries in science. However, it is the most practiced among the studies presented here (Table 6).

**Table 6**  
*Works by category*

Category	Subcategory	%	Articles
Professor	Reflective teacher	46%	2, 4, 5, 7, 9, 11
Methodology	Subjective-interpretive	38%	3, 7, 9, 11
Research	Cognitivist	46%	2, 3, 5, 7, 8, 9
Learning	Press conference	77%	2, 3, 4, 5, 6, 7, 9, 10, 11, 13
Training	Review	69%	4, 5, 6, 7, 9, 10, 11, 12, 13

*Note. Prepared by the author (2024)*

Since 2019, when Resolution CNE/CP No. 2 was promulgated, establishing the Common National Basis for the Continuing Education of Basic Education Teachers (BNC - Continuing Education), the program has been implemented in the states. It is based on three pillars: professional knowledge, professional practice and professional engagement. As a fundamental aspect, continuing teacher training aims to develop the skills needed for socially efficient performance and adequate qualifications for the job (Ruiz, 2022).

Given this scenario, the only caveat in the profile obtained is in the teacher category, which, despite the majority of training courses presenting it as reflective, still remains passive in its learning. The aim is therefore to deepen continuing training so that teachers understand the importance of seeking answers to their questions through scientific data.

In this sense, Fagundes (2016) argues that in the face of teachers' dissatisfaction with the lack of reciprocity between academic theory and classroom practice, movements such as the teacher researcher have emerged as innovative proposals aimed at boosting educational research and (re)configuring the role of the teacher, involving the understanding of educational phenomena, interculturality, plurality and collective reflection in search of better teaching work.

According to these studies, training should be from a critical-reflective perspective, committed to providing teachers with training that allows them to reflect on their practice, solve problems based on their reality and develop through collaborative processes. Thus, there will be great potential to transform teaching into a meaningful and contextualized practice, corroborating subjective-interpretive methodological practices, where the focus is on the teachers' personal relationship with their work, seeking to understand how this interferes with the way they teach.

The collaborative learning process, based on the principle of "learning with others", involves setting common learning goals and objectives for a specific group. Through workshops and seminars, management provides interaction between participants and the sharing of experiences and knowledge. In addition to the opportunity for discussion and problem-solving, with an internal or external expert acting as mediator.

In this way, teachers become aware of their practices based on cognitivist processes, centered on cognitive aspects, thinking and the construction of schemes. This provides recognition of the complexity of the teaching profession and, at the same time, demands contextualized, interactive and speculative knowledge, leading to concern about information processing and the processes of knowledge construction in teaching and learning.

Based on these motivators, reflection becomes part of teaching knowledge, where teachers reflect on their own practice and develop strategies based on it, taking on their school reality as an object of research, reflection and analysis. The next step is to allow moments to



encourage research, and based on reflections, the teacher will look for the best way to teach and learn, like an artist who uses different materials to create the most appropriate solutions. This highlights the importance of recognizing teachers as subjects capable of experimenting in their practice and generating theories from it.

Based on these reflections, it is proposed that research be carried out to encourage further training so that teachers become reflective and active in their learning, understanding the importance of educational research and (re)configuring their role, promoting interculturality and collective reflection in search of better teaching work, becoming researchers.

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