TEACHER KNOWLEDGE IN THE CONTEXT OF NON-PRESENTIAL PEDAGOGICAL ACTIVITIES DURING THE COVID-19 PANDEMIC

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ABSTRACT: This study aims to analyze the teaching knowledge situated in non-face-to-face pedagogical activities during the COVID-19 pandemic. It is a qualitative research of the state-of-the-art type, in which advanced search was chosen, in the title and abstract, with the descriptors "teaching knowledge," "non-face-to-face pedagogical activities," and "pandemic," as well as their synonyms. Considering the inclusion and exclusion criteria and the temporal cut from 2020 to 2022, a survey was conducted on the Capes Periodicals Portal, SciELO, and the Brazilian Digital Library of Theses and Dissertations (BDTD), with the corpus consisting of 18 articles and two dissertations. The findings showed that teaching knowledge underpins pedagogical practice, from the perspective of the teachers' commitment to (re)constructing their learning and confronting the challenges imposed by physical distancing and non-appropriation of the digital, noting also a gap in training with digital technologies. There is an understanding that the lack of training in the digital scenario hampers significant pedagogical processes, in which other knowledge could emerge and (re)signify. However, the nonspecificity of this knowledge in the publications calls for further research.


RESUMO: Este estudo tem como objetivo analisar os saberes docentes, situados nas atividades pedagógicas não presenciais, durante a pandemia da COVID-19. Trata-se de uma pesquisa qualitativa, do tipo estado do conhecimento, em que se optou pela busca avançada, no título e no resumo, com os descritores “saberes docentes”, “atividades pedagógicas não presenciais” e “pandemia”, bem como suas sinonímias. Considerando os critérios de inclusão e exclusão e o recorte temporal de 2020 a 2022, realizou-se um levantamento no Portal Periódico Capes, SciELO e Biblioteca Digital Brasileira de Teses e Dissertações (BDTD), sendo o corpus constituído por 18 artigos e duas dissertações. Os achados evidenciaram que os saberes docentes alicerçam a prática pedagógica, numa perspectiva de coexistência do comprometimento dos professores em (re)construir suas aprendizagens e o enfrentamento de seus desafios, impostos pelo distanciamento físico e pela não apropriação do digital, notando-se, ainda, um hiato existente na formação com as tecnologias digitais. Há um entendimento de que a ausência de formação no cenário digital inviabiliza processos pedagógicos significativos, nos quais outros saberes poderiam emergir e se (re)significar. Contudo, a não especificidade desses saberes nas publicações requisita novas pesquisas.


RESUMEN: Este estudio tiene como objetivo analizar los saberes docentes situados en las actividades pedagógicas no presenciales durante la pandemia de COVID-19. Se trata de una investigación cualitativa del tipo estado del conocimiento, en la que se optó por la búsqueda avanzada en el título y el resumen, utilizando los descriptores “saberes docentes”, “actividades pedagógicas no presenciales” y “pandemia”, así como sus sinónimos. Considerando los criterios de inclusión y exclusión y el periodo de tiempo de 2020 a 2022, se realizó un levantamiento en el Portal Periódico Capes, SciELO y la Biblioteca Digital Brasileña de Tesis y Disertaciones (BDTD), siendo el corpus compuesto por 18 artículos y dos disertaciones. Los hallazgos evidenciaron que los saberes docentes fundamentan la práctica pedagógica, desde una perspectiva de compromiso de los profesores en (re)construir sus aprendizajes y enfrentar sus desafíos, impuestos por el distanciamiento físico y la falta de apropiación de lo digital, notándose además un vacío en la formación en tecnologías digitales. Se entiende que la falta de formación en el entorno digital dificulta procesos pedagógicos significativos, en los que otros saberes podrían surgir y (re)significarse. Sin embargo, la falta de especificidad de estos saberes en las publicaciones solicita nuevas investigaciones.

Introduction

With the emergence of the COVID-19 pandemic in 2020, Brazil suspended face-to-face classes in all educational institutions, regardless of the level and type of teaching, in accordance with ordinance no. 343, of March 17, 2020, established by the Ministry of Education (MEC). These educational institutions were instructed to replace face-to-face classes with digital and/or virtual classes, as long as physical distancing was necessary. Further on, ordinance no. 544, of June 16, 2020, revoked ordinance no. 343, of March 17, 2020; No. 345, of March 19, 2020; and No. 473, of May 12, 2020, establishing other guidelines on replacement, continuing what became widely known as emergency remote education (ERE).

This teaching format, authorized by the MEC and established on an exceptional basis, provided support for institutions to maintain their non-face-to-face pedagogical activities (APNP), synchronously or asynchronously. Thus, each teaching unit migrated from face-to-face to virtual, adopting networked digital devices, a reality that teachers still have little experience with. This “new” scenario triggered a reflection on pedagogical practices, especially in relation to the content, resources, and methods used, which required the mobilization of a variety of knowledge. To achieve their goals with students, teachers use knowledge acquired both in their initial and continuing training, in addition to that developed throughout their professional experience and enriched by daily experience in the classroom (Tardif, 2014).

Teaching knowledge, a notion that integrates teaching knowledge, skills, abilities, and attitudes, is produced and modeled in and through work and, as a result, presents diversity and pluralism located in specific spaces and times (Tardif, 2014). When carrying out their daily work, therefore, there is a confluence of this knowledge, demanded by the practice itself, since they are fundamental in the exercise of their profession. Thus, in their pedagogical practices during the pandemic period, educators mobilized different knowledge in the field of teaching, requiring the mobilization of other skills not yet developed (Gauthier et al. 2013), especially with regard to digital information and communication technologies, especially with regard to digital information and communication technologies (TDICs), a fact that made it difficult to carry out activities in a different logic from those already carried out.

In this sense, we emphasize that, with digital technology, there was an expectation of innovation in pedagogical practices, changing the ways of doing things (Certeau, 2003) already marked in everyday school life, such as the recurring expository class, a teaching model based on students’ lack of autonomy, that is, distant from what is experienced with digital cultures (Lucena; Oliveira, 2014). On the other hand, teaching with technologies depends on the
relationship between digital and another conception of learning, through the mobilization of diverse cognitive resources that contribute to conscious and autonomous pedagogical work (Nascimento; Azevedo, 2017). This reality makes us dialogue with Freire (2018) when pointing out the existence of naive knowledge when there is still no epistemological and methodological depth in relation to digital, in this case, on the part of teachers.

Therefore, because it is a new reality, mainly because it requires the intense use of digital, we highlight an important gap: the lack of digital appropriation by a large number of teachers, highlighting the lack of knowledge, especially in the technological field. Due to the thematic relevance, and because we believe that discussions about this knowledge bring significant contributions to education, the following question emerged: how was teaching knowledge, situated in non-face-to-face pedagogical activities, during the COVID-19 pandemic discussed, and what was the main trend in these discussions? This provocation mobilized us to map scientific productions from 2020 to 2022 with the aim of analyzing teaching knowledge, situated in non-face-to-face pedagogical activities, during the COVID-19 pandemic, and which aspects are relevant.

For this mapping, we conducted bibliographic research on the “state of knowledge” type, following the methodological perspective of Morosini, Kohls-Santos, and Bittencourt (2021). Our aim was to analyze the position of teaching knowledge in research concerning an emerging teaching format, which, until now, had not been experienced by Brazilian education. By establishing the state of knowledge for the Humanities, rather than the state of the art or systematic review, the authors argue that, from a social perspective, we work with the construction of knowledge situated in a specific space and time. According to them, this exercise brings significant contributions to the researcher, as it allows for breaking “preconceptions” about their research object and, thus, enables the articulation of directions and understandings that transform the social fact into a scientific one.

To fulfill this purpose, this work is structured as follows: an introduction, which presents the problem, guiding question, and objective; the methodological section, which describes the stages of this study, including, briefly, the databases used, types of search, inclusion and

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4 Teachers in public schools (municipal, state, and federal) have a basic level of 29%, an intermediate level of 60%, and an advanced level of 11%. Private school teachers are at the basic level 23%, intermediate 56%, and advanced 21%. This data was extracted from research carried out by Cetic.br, regarding teachers' perception of their digital knowledge. Available at: https://cetic.br/pt/tics/educacao/2021/professores/C1/. Accessed on: 30 Dec. 2022.
exclusion criteria, as well as the set of mapped works; followed by the categories, which present the constituted units of meaning; and, finally, the final considerations.

Methodological Overview

Qualitative in nature, this research takes the form of a bibliographic survey of the “state of knowledge” type, aimed at “[...] analyzing and establishing the current state of research in a particular area of knowledge” (Morosini; Kohls-Santos; Bittencourt, 2021, p. 61, our translation). In other words, it aims to map published studies on a particular theme, reflect on the established discussions, and even identify discussion points that allow, depending on the investigative intent, for updates or deeper exploration of the researched object.

For Morosini, Kohls-Santos, and Bittencourt (2021, pp. 21-22, our translation), producing a state of knowledge involves processes such as “[...] identification, recording, categorization that lead to reflection and synthesis on the scientific production of a particular area within a specific timeframe, encompassing journals, theses, dissertations, and books on a specific topic.” As argued by the authors, this engagement with scientific productions allows the researcher to transcend prejudices related to their subject, which are often influenced by beliefs and knowledge acquired in daily life, and transform them into scientific work through the construction of new data and the performance of rigorous analyses.

To produce this state of knowledge, we started with its planning, initially defining the theme to be researched, the objective, the databases, the descriptors, the inclusion and exclusion criteria, and the time frame. Once this was well established, we proceeded to the systematic execution of the methodology, conducting analyses of the works found.

Thus, with the construct “teaching knowledge” and the objective “to analyze the teaching knowledge situated in the APNP during the COVID-19 pandemic, and which aspects are relevant,” we conducted a preliminary search in the databases. To select relevant scientific articles, dissertations, and theses in the field of Education, we chose the Portal Periódico of the Coordination for the Improvement of Higher Education Personnel (Capes), SciELO, and the Brazilian Digital Library of Theses and Dissertations (BDTD). After this initial mapping, based on the construct “teaching knowledge,” the timeframe 2020-2021, and Brazilian works, we arrived at the quantity shown in Table 1.
However, when we established the criterion that the discussion should focus on the teaching knowledge situated in non-face-to-face pedagogical activities, the search returned no results in all the selected databases, necessitating a reorganization of the search. Given the recent nature of the theme and the longer publication process in these databases, we decided to conduct a preliminary search in Google Scholar, adding it to the researched databases. With this reorganization and refinement of the search, we proceeded to a more detailed and targeted investigation, using descriptors, along with synonyms and strings, to capture possible variations of the terms, as shown in Table 2:

<table>
<thead>
<tr>
<th>Table 1 – Initial survey of Brazilian publications on teaching knowledge from 2020 to 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Databases</strong></td>
</tr>
<tr>
<td>Scielo</td>
</tr>
<tr>
<td>Periódico Capes</td>
</tr>
<tr>
<td>BDTD</td>
</tr>
<tr>
<td>Source: Prepared by the authors (2022).</td>
</tr>
</tbody>
</table>

In Table 2, the terms and synonyms presented were necessary to identify the largest number of works related to the established theme. For “teaching knowledge,” we also aimed to find studies using “teacher knowledge” or “knowledge of teaching.” For the contextual scope of the research, we included “COVID-19” and “coronavirus.” Considering that, in this historical context, works involving “non-face-to-face pedagogical activities,” justified by the physical distancing imposed by the pandemic, might use terms such as “APNP” and “remote teaching” or “emergency remote teaching,” we also opted for these expressions to compose the research descriptors.

In the process of defining the descriptors, we established the search strings, which set up the relationships of addition or alternation. Thus, to refer to the search for synonymous terms, we used the Boolean operator OR, and for terms that required simultaneity, we opted for AND,
aiming to achieve a return that closely matched our objective. The following table details the composition of the search string:

Table 3 – Search string with descriptors

<table>
<thead>
<tr>
<th>Search string and descriptors used in the research</th>
</tr>
</thead>
<tbody>
<tr>
<td>(&quot;saberes docentes&quot; OR &quot;saberes dos professores&quot; OR &quot;saberes da docência&quot;) AND (&quot;pandemia&quot; OR &quot;COVID-19&quot; OR &quot;coronavírus&quot;) AND (&quot;atividades pedagógicas não presenciais&quot; OR &quot;APNP&quot; OR &quot;ensino remoto&quot;)</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors (2022).

With these descriptors and strings in hand, the databases were consulted again, starting initially with the title. To broaden the results, after a preliminary reading of the titles, we proceeded to the abstract and keywords, aiming to select those that indeed promoted the discussion about the teaching knowledge situated in the context of APNP experienced during the COVID-19 pandemic. We applied filters such as the period from 2020 to 2022, works in Portuguese, and the field of Education, not forgetting the inclusion and exclusion criteria, as shown in the following table:

Table 4 – Inclusion and exclusion criteria

<table>
<thead>
<tr>
<th>Inclusion Criteria (IC)</th>
<th>Exclusion Criteria (EC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC1 - Works that discuss teaching knowledge in the context of APNP, experienced during the COVID-19 pandemic; IC2 - Works published from January 2020 to December 2022; IC3 - Works published in Portuguese; IC4 - Works within the field of Education.</td>
<td>EC1 - Works that discuss teaching knowledge outside the context of APNP; EC2 - Works that are not articles, dissertations, or theses; EC3 - Works not published in journals or events linked to higher education institutions.</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors (2022).

In this more detailed process, we retrieved articles and dissertations that not only met the time frame but also fully addressed the chosen theme for the mapping. The three-year time frame is justified as it encompasses the period when face-to-face pedagogical activities were replaced by non-face-to-face activities due to the COVID-19 pandemic, the context chosen for the production of this state of knowledge. After this reading process and supported by the inclusion and exclusion criteria, as well as excluding duplicate productions, we obtained the quantity described in Table 5:
Table 5 – Publications identified in each database

<table>
<thead>
<tr>
<th>Databases</th>
<th>Journal Articles</th>
<th>Articles Published in Conference Proceedings</th>
<th>Dissertations</th>
<th>Theses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scielo</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Periódico Capes</td>
<td>08</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>BDTD</td>
<td>-</td>
<td>02</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Google Acadêmico</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors (2022).

Thus, with the refinement described here, the corpus of this work consists of 18 articles and two dissertations. With this quantity, we applied the phases of the state of knowledge as classified by Morosini, Kohls-Santos, and Bittencourt (2021): annotated bibliography, systematized bibliography, categorized bibliography, and propositional bibliography, strengthened by a rigorous methodology linked to the defined objective.

In the annotated bibliography, the first phase of the state of knowledge, we organized the scientific productions by distributing the following information in a table: complete reference for each study, identifier number, year of publication, authors, title, keywords, abstract, and access link. By organizing it, we revisited, through a preliminary reading, the titles, abstracts, and keywords, aiming to produce the systematized bibliography, the phase in which we articulated connections between the discussions in the works and the objective to be achieved.

In the second phase, the systematized bibliography, we transferred the identifier number, authors, and title to a new table and added the type of source (article, dissertation, or thesis), objectives, methodology, and results to begin the content analysis process. Next, we moved to the categorized bibliography phase, where we organized the works into groups according to the similarities in their discussions, that is, grouping them according to the units of meaning, thus constituting their categories.

Amid these three phases of the state of knowledge, we conducted pre-analysis, material exploration, and data treatment and interpretation, as established by Bardin’s content analysis (2011). This approach provided the foundation for constructing inferences from the identified works, as detailed in the next section.
Teaching Knowledge and Non-Face-to-Face Activities: Categorizing the Corpus

In analyzing the 20 works, consisting of 18 articles and two dissertations, and forming the inferences, we developed three categories, as described in the table below.

Table 6 – Developed Categories

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedagogical Practices</td>
<td>08</td>
</tr>
<tr>
<td>Training and Technology</td>
<td>10</td>
</tr>
<tr>
<td>Teaching</td>
<td>02</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors (2022)

The first category, titled “pedagogical practices,” comprises eight works, including six articles and two dissertations. The “training and technology” category includes 10 articles. Lastly, the “teaching” category contains two articles. This set of categories, understood as units of meaning (Morosini; Kohls-Santos; Bittencourt, 2021), is described below along with the emerging meanings.

Pedagogical Practices

In the work of Arruda and Nascimento (2021), titled “Estratégias de ensino remoto durante a pandemia de Covid-19: um estudo de caso no 5º ano do Ensino Fundamental”, there is a discussion about the development of remote classes in a 5th-grade class in the early years of elementary education. Characterized as action research and conducted from their own practice, the authors explored a portfolio produced from April to June 2020. Based on Freire (2018) and Morin (2002), the authors argue that mobilizing a set of knowledge corroborated the validation of a problematizing and less unjust remote teaching approach. Additionally, they proposed that the practices developed in Emergency Remote Education (ERE) should be considered as material for teacher self-formation, as they constitute a source of research, reflections, and re-elaboration of their practice.

Ramirez et al. (2021), in their research “Saberes experienciais em tempos de pandemia: narrativas docentes”, interpreted how teachers working in vocational education re-signified their pedagogical practices during ERE. This qualitative research’s results emerged from teachers’ narratives through semi-structured interviews conducted at technical education institutions in the state of São Paulo. Their results indicate that, even teaching in different institutions, the teachers’ perceptions and meanings attributed to ERE have common
denominators, such as the way of dealing with both established and new knowledge. They also affirm that knowledge develops in practice and that teachers are open to new learning, although time pressure and lack of support hinder this learning process.

Silva Junior, Almeida, and Prados (2022), in their research “O uso de recursos educacionais digitais no ensino remoto: saberes e experiências docentes na educação profissional”, presented a descriptive study with a qualitative approach focusing on the observation of experiential knowledge of two teachers from public and private higher technological education institutions in the state of São Paulo. The authors utilized digital educational resources in teaching and learning processes and found that their use broadens the range of teaching methodologies applied in classes and that teachers' knowledge also contributes to students' learning.

The work of Sá Firmino et al. (2021), “Os saberes docentes no ensino remoto emergencial: experiências no estado do Ceará”, was a qualitative case study whose data were collected through an online questionnaire and analyzed using Bardin's content analysis. The results showed that the adoption of emergency remote teaching required the mobilization of curricular, disciplinary, and experiential knowledge. They also highlighted the potential for using new audiovisual resources, digital books, and applications previously unused, as well as virtual museum visits and the use of virtual laboratories.

The research by Carvalho and Maciel (2020), “Os saberes docentes e a tecnologia aliados em tempos de pandemia,” discussed the necessity of teachers' knowledge during activities in a context where changes in teaching and learning processes were essential, particularly due to the intensive use of technology. Through bibliographic readings, the authors observed that this knowledge was crucial for teaching and learning processes during the pandemic, in addition to the contribution of technological resources such as online class platforms and social networks.

Pereira and Chahini (2021), in their study “Saberes docentes em relação aos discentes com altas habilidades/superdotação no contexto de ensino remoto”, investigated which knowledge teachers of students with high abilities/giftedness should master to develop their classes during Emergency Remote Education (ERE). It is a qualitative bibliographic research based on the collection of material available for public consultation on the Internet, through which they selected, analyzed, and discussed data to find possible methodological approaches to apply in online classrooms. The results showed that knowledge and teaching practices should provide students with high abilities/giftedness with optimized challenges that integrate
something new and motivate the development of their knowledge and dynamism in activities, stimulating autonomy, individual interest, and students' creative and critical capacities. Thus, teachers need to develop understanding about active methodologies, shifting the student to the center of the process.

On the other hand, Oliveira's dissertation (2021), “Diálogo de saberes na formação e na prática pedagógica de professores de Educação Física mestres de capoeira”, focused on the knowledge mobilized by Capoeira master teachers, who are trained in Physical Education, in their pedagogical practices. They aimed to describe and analyze the knowledge of life history, professional training in the tradition of Capoeira, physical education graduation, and work experience that teachers and masters experience in their teaching practices. The results indicated a predominance among the constructed knowledge and highlighted Physical Education as a filter of experiential knowledge regarding the profession of Capoeira.

In Lima's dissertation (2021), “Saberes docentes: percepção e aquisição de saberes vivenciados por professores que atuam em IES do estado de São Paulo em período de pandemia da Covid-19”, we have descriptive research with a quantitative-qualitative characteristic that used questionnaires and interviews as research instruments. The research focus was Higher Education Institutions (HEIs) in the city of São Paulo, conducted with teachers working in these institutions offering courses related to business areas such as Administration, Economics, and Accounting. The data were analyzed using Bardin's content analysis. The results showed that teachers in São Paulo's HEIs possessed the necessary knowledge and were able to mobilize their expertise to address conflicts presented in the remote teaching period.

Training and Technology

In Lima Coelho and Mendes' work (2022), “Saberes docentes e metodologias de ensino e tecnologias digitais: tempos de pandemia”, they conducted analytical, qualitative, and bibliographic research. The results indicate that digital technologies require "plural" knowledge, specific knowledge of technologies, and a redefinition in understanding educational processes, including the teacher-student relationship. Furthermore, according to the authors, theoretical and practical knowledge intersect, supporting teaching action in the classroom. The challenging and disruptive experiences during the pandemic period highlighted the need for teacher training to adopt more active methodologies through the development of other forms of knowledge.
The study by Silva, Rausch, and Sopelsa (2022), “Implicações de uma comunidade de aprendizagem ao desenvolvimento profissional docente de professoras da educação infantil em tempos de pandemia”, reported on the learning community as a possibility for school-centered continuous education. It was an exploratory qualitative research conducted at the Early Childhood Education Center (CEI) in the municipality of Gaspar (SC). Data analysis was conducted using Bardin's content analysis, and the results pointed to five implications: expansion of teaching knowledge; reflection on educational practice in times of pandemic; alleviating the dilemmas of practice in the return to face-to-face classes; changes in teaching practice; and continuity in education to deepen understanding of the approaches that underpin the pedagogical actions of CEI.

Similarly, the study by Barros et al. (2020), “Formação de professores e o uso de tecnologias digitais em tempos de pandemia: reflexões e decisões”, discussed the formative needs of teachers during the pandemic period regarding digital technologies. Although they did not specify the methodology used, it is understood to be a bibliographic work. In their discussion, the authors reaffirm the (re)construction of knowledge throughout teachers' trajectories, as it is continuously required in classroom practice. In the investigated situation, this implies formative experiences that enable reflection on the pedagogical use of digital technologies and, consequently, the construction of new knowledge.

Jacon's work (2020), “Conhecimento Tecnológico e Pedagógico de Conteúdo (TPACK): saberes docentes na formação continuada e ensino remoto”, was an exploratory, descriptive, and qualitative study conducted at a specialization course in education and technology in distance learning (EaD) mode. The participants were students, both current and former, enrolled in the program since 2018, and the research instrument was a structured questionnaire combined with qualitative analysis. The authors advocate for the formation of teaching knowledge through formal and practical knowledge, with experiential knowledge being constantly mobilized.

The results indicated that in the planning of remote lessons, teachers understood which specific technology was appropriate to achieve the learning objective and that the need for other knowledge in emerging educational scenarios gives rise to new categories of such knowledge. However, regarding technological and pedagogical content knowledge, the knowledge resulting from the integration of these categories did not materialize. As a gap, they highlighted the emptying of teacher training in technologies and the loss of technological fluency.
Kripka, Boito, and Valério (2021), in their study “Formação de professores de matemática em projeto de extensão: percepções docentes em tempos da pandemia da Covid-19”, presented perceptions about teachers' participation in actions of an extension project for the initial and continued training of mathematics teachers in basic education, conducted throughout 2019 and during the Covid-19 pandemic in 2020. Using a qualitative approach, the research instruments included the application of a questionnaire. The results showed that despite difficulties, mathematics teachers remained committed to the process and, although many were not familiar with or accustomed to using ICTs, they began to use them in the teaching and learning process. Finally, they concluded that the training proposal experience enabled the sharing of knowledge among teachers, as well as the development of mathematical, pedagogical, and, above all, alternative approaches related to ICTs.

The study by Prados et al. (2021), “Desafios contemporâneos em educação profissional: formação docente, linguagem e práticas pedagógicas”, was descriptive in nature with a qualitative approach, where data were analyzed through the observation of thematic reading seminar presentations on vocational education, educational practices, and the emergence of technology use during the period of social isolation. The results emphasize that the experienced training enabled the perception that, in the exercise of teaching, knowledge is produced through reflections on lived and shared experiences, as well as on the challenges that required different pedagogical approaches, constituting other know-how and even the (re)signification of this very knowledge.

In the article “Estudo de caso: construção do saber docente no ensino remoto durante a pandemia ocasionada pela Covid-19”, Rego et al. (2020) employed a case study design with a qualitative approach and bibliographic research. The training conducted was part of a teacher training plan aimed at supporting professionals in their pedagogical practices during remote teaching. As a result, the authors highlighted the positive effect of activities carried out with the assistance of digital technologies and in pairs, as teaching knowledge was constructed. For the teachers themselves, working in pairs encourages discussion, teamwork, sharing of ideas, and meaningful solutions, constituting individual knowledge that intersects and contributes to collective issues. Additionally, by seeking to adapt their pedagogical practices, they reinterpreted knowledge, aiming to acquire the necessary knowledge to develop other methods.

Silva Júnior and Gomes (2021) presented “Os saberes docentes e a responsividade de licenciadas/estagiárias em letras/português no ensino remoto emergencial”. With a qualitative approach, the data were produced and analyzed based on responses to a survey questionnaire.
about the articulation of theories, methodologies, and practices in the internships carried out by the students. The results revealed that teaching knowledge is relevant both in initial training and in professional practice.

Conceição, Pinheiro, and Marques's research (2022), “Saberes docentes e estágio: uma experiência no ensino remoto”, also discussed internships carried out by pre-service teachers during the ERE period. It reports an experience undergone by undergraduate students in the Teaching Internship II, part of the Integrated Bachelor's Degree in Sciences, Mathematics, and Languages at the Federal University of Paraná, in the development of activities in the remote context. It was a qualitative and descriptive study. The results highlighted that teaching knowledge needs to be in constant learning, emphasizing the relevance of the unexpected and the understanding of unfinished knowledge.

The work by Beber et al. (2021), “Os saberes docentes e a extensão na formação de professores em tempos de pandemia”, addressed reflections through an extension project. It is an experiential report with a qualitative approach, where the authors describe and interpret the actions of the research subjects during the year 2020. Initially, the authors reaffirm the importance of the knowledge necessary for the profession, which is understood as plural and derived from various sources and is therefore not restricted to professional training. The results also portrayed that didactic resources and teaching strategies, in a conventional manner, can be adapted, pointing out reinvention as a significant possibility for the individuals involved, considering the mobilization of pedagogical, disciplinary, curricular, and experiential teaching knowledge.

Teaching

In this category, the works focus on the challenges faced by teaching, as educators experience teaching marked by emergent situations and laden with uncertainties. Venâncio et al. (2022), in their work “Relações com os saberes e experiências (auto)formativas na Educação Física: perspectivas docentes ao confrontar injustiças sociais em situações adversas de ensino e aprendizagem”, showcased the challenges and relationships with the knowledge of university professors and their shared (self) formative experiences with colleagues from three public schools in Fortaleza, Ceará.

It is a self-study based on the assumptions of the Self-Study of Teaching and Teacher Education (S-STTEP) methodology and focused on the self-perspective of two university
professors and coordinators of teacher training program actions in the three field schools. It is a qualitative research, with data derived from narratives, annotations, and audiovisual records generated throughout the self-study development. The results addressed, in the Brazilian context, the pedagogical relationships mediated by synchronous and asynchronous actions on online platforms and the identity, social, ontological, and epistemological dimensions of knowledge mobilized to give meaning to relationships with knowledge in the context of the pandemic. They also emphasize the need to allow teachers to make decisions, considering these relationships in the face of the contemporary world and its educational demands.

In another vein, Rabaiolli and Hansen's text (2020), “Experiências em ensino remoto de publicidade e propaganda na pandemia da Covid-19”, discussed the difficulties faced by educators working in the Advertising and Propaganda course during the COVID-19 pandemic. Data collection took place in May 2020 through an online self-completion questionnaire, with 283 educators from Advertising and Propaganda courses. The results pointed to physical and mental exhaustion, teacher engagement, the unpreparedness of Higher Education Institutions (HEIs), and damage to learning and teaching quality.

They suggest that HEIs align to discuss how to make the educational system work to ensure content, assessments, teacher training, and student retention, by debating the situation of financial, mental, and pedagogical health with the plurality of the academic community (parents, guardians, students, teachers, course coordinators, HEI leaders). They also highlight the importance of interaction with others in a collaborative and dialogical process, enabling complementary exchange of knowledge.

Final considerations

In conducting this analysis of scientific publications on teaching knowledge situated in non-face-to-face pedagogical activities during the COVID-19 pandemic, our intention was to understand the discussions conducted and thus identify the most relevant aspects of the research developed. In this direction, although we have observed some theoretical-methodological weaknesses, such as the absence of essential elements in the abstract, the lack of detail regarding the main authors and objectives, as well as the lack of clarity in the methodological process, and the absence of future proposals, we infer that there are important contributions in these studies.
By intersecting these works, we deduce that teachers, throughout their trajectory, mobilize a set of knowledge from various sources. Thus, in each distinct reality, knowledge is also different, whether theoretical or practical, and produced according to the needs of meeting specific demands. In this movement, they are constantly updated, resulting in particularities inherent to the social, historical, cultural, and educational context, as we have seen in the challenging period of the pandemic. Moreover, the intersection between individual and collective knowledge is capable of promoting the reframing of both knowledge and their practices, a perspective even more potent when there is immersion in qualified teacher training.

We also highlight that the majority of authors indicate the continued education of teachers for the discussion regarding technologies from the simplistic perspective of "use," which does not alter teaching and learning, as the pluralization of knowledge and understandings is indispensable for (re)signifying the educational process. In this aspect, the texts dialogue and discuss teaching knowledge and the contribution of technologies during non-face-to-face pedagogical activities, through the guarantee of qualified teacher training. However, we infer that, as the discussion revolves around technologies and the weaknesses or importance of teacher training for digital use, teaching knowledge is explored only minimally.

Thus, in these works, although the knowledge, albeit conceptualized and grounded, does not address the specificities experienced in the investigated context, demarcating gaps, as even though they signal the recurrence of experiential knowledge, for example, they do not show how or which ones were mobilized, constructed, or (re)signified. Therefore, we contend that by focusing on the created strategies, the importance of training, and digital technologies, there is a gap regarding knowledge, which leads us to propose new studies, considering the relevance of reflecting on the particularities of a theme based on teaching practices.
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