EDUCAÇÃO EM FOCO
PROGRAMA DE PÓS-GRADUAÇÃO EM EDUCAÇÃO | UNIVERSIDADE DO ESTADO DE MINAS GERAIS

Letramento digital na Educação Infantil: novos desafios

Nayara Affonso SOUZA[1]
Maria Iolanda MONTEIRO[2]

Resumo
Desde os seus primeiros anos de vida, as crianças encontram-se permeadas pelo letramento digital, o que demonstra a necessidade de contemplá-lo no âmbito educacional desde a Educação Infantil. Diante disso, tem-se como objetivo analisar as práticas de letramento digital no contexto da Educação Infantil, encontradas em teses e dissertações, para compreender de que forma essas práticas contribuem para o processo de ensino e aprendizagem das crianças. A metodologia da pesquisa é de natureza qualitativa. Assim, realizou-se uma revisão bibliográfica de produções acadêmicas na Biblioteca Digital Brasileira de Teses e Dissertações, no período de 2010 a 2022. A análise das pesquisas mostra que o acesso e o uso das tecnologias digitais podem propiciar às crianças aprendizagens mais prazerosas e lúdicas, de modo a contribuir para o seu desenvolvimento, a construção de conhecimento e sua autonomia.

Palavras-chave: Alfabetização digital. Letramento digital. Tecnologia digital.

[1] Pedagogue from the Federal University of São Carlos (UFSCar). ORCID: https://orcid.org/0000-0002-1822-6185.
E-mail: na.affonso@hotmail.com
[2] Ph.D. in Education from the University of São Paulo (USP). Professor at the Federal University of São Carlos (UFSCar).
ORCID: https://orcid.org/0000-0002-4534-1437.
E-mail: mimonteiro@ufscar.br

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Digital literacy in Early Childhood Education: new challenges

Nayara Affonso SOUZA
Maria Iolanda MONTEIRO

Abstract
Since their first years of life, children are permeated by digital literacy, which demonstrates the need for it to be included in the educational context from of Early Childhood Education onwards. That said, this work aims to analyze digital literacy in the context of Early Childhood Education, found in theses and dissertations, to understand how these practices contribute the teaching-learning process of children. The research methodology is of qualitative nature. The bibliographic review of the literary productions, from 2010 to 2022 was carried out in Biblioteca Digital Brasileira de Teses e Dissertações [Brazilian Digital Library of Theses and Dissertations]. The analysis shows that access and use of digital technologies can provide children with more pleasurable and playful learning, contributing to their development, the construction knowledge, and their autonomy.

Keywords: Digital literacy. Technological literacy.

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Alfabetización digital en la Educación Infantil: nuevos retos

Nayara Affonso SOUZA
Maria Iolanda MONTEIRO

Resumen
Desde sus primeros años de vida, los niños se impregnan de la alfabetización digital, lo que demuestra la necesidad de contemplarla en el ámbito educativo desde la Educación Infantil. Teniendo esto en cuenta, el trabajo tiene el objetivo de analizar las prácticas de alfabetización digital, en el contexto mencionado, observadas en las tesis y disertaciones, con el objetivo de comprender cómo estas pláticas contribuyen para la enseñanza y el aprendizaje de los niños. La metodología de investigación es de carácter cualitativo. Se ha realizado una revisión bibliográfica de las producciones académicas en la Biblioteca Digital Brasileira de Teses e Dissertações [Biblioteca Digital Brasileña de Tesis y Disertaciones], en el período de 2010 a 2022. El análisis de las investigaciones asegura que el acceso y el uso de las tecnologías digitales posibilita a los niños un aprendizaje más placeroso y lúdico, contribuyendo para su desarrollo, la adquisición de conocimientos y la autonomía.

Palabras clave: Alfabetización digital. Tecnología digital.

Introduction

Contemporary society has been marked by cultural, scientific, and technological transformations. The presence of technological resources in educational institutions is increasingly evident, as are the challenges these resources pose to educational processes. There is also a notable increase in the use of digital technologies by children in Early Childhood Education, as exposure to technological media and the digital world is occurring at an increasingly early age (NUNES; FRANÇA, 2018).

Early Childhood Education is a universal right of the child and is the first stage of Basic Education (BRAZIL, 1996). According to Law No. 9.394 of 1996, which establishes the guidelines and bases of National Education – LDB (BRAZIL, 1996), the purpose of Early Childhood Education is to develop the child up to five years of age in an integral manner, covering their physical, intellectual, psychological, and social aspects, in order to complement the actions of the family and the community.

The National Curriculum Guidelines for Early Childhood Education – DCNEI (BRAZIL, 2009) establish the curriculum for this stage, that is, the practices that integrate children's experiences and knowledge with the cultural, environmental, scientific, artistic, and technological heritage. However, the document lacks specific guidelines on the field of digital technology, hindering the effective use of these technologies in this context.

Nevertheless, according to the National Common Curricular Base – BNCC (BRAZIL, 2017), the advancement of digital technologies has produced significant social changes in contemporary society. This demonstrates that, in light of digital technologies, early childhood educational institutions need to provide children with the development of more meaningful, critical, reflective, and ethical attitudes.

It is important to note that this article was produced based on the Final Project developed in the Pedagogy Degree course in 2021 at the Federal University of São Carlos, São Carlos/SP campus, titled "Digital Literacy Practices in Early Childhood Education: Contributions to the Learning Process of Children from Zero to Five Years" (SOUZA, 2021). Its implementation took place during the pandemic period caused by the new coronavirus (SARS-CoV-2)[3], which began in 2020. As a result,

[3] which began in 2020. Consequently, social distancing measures were implemented, leading to the closure of schools nationwide. As a result, digital technologies became the primary means of interaction between schools and families (BRASIL, 2021).

social distancing measures were adopted, leading to the closure of schools across the country, making digital technologies the main means of interaction between schools and families.

In this context, it is important to highlight that, in March 2020, Legislative Decree No. 6 of March 20, 2020, was approved, which declared a state of public calamity due to emergency health measures related to the novel coronavirus (SARS-CoV-2) (BRAZIL, 2020). Thus, with the pandemic and the suspension of classes nationwide, relationships, work strategies, and, most importantly, teaching practices were impacted. Distance education, previously exclusive to higher education, became a necessity for basic education to adapt to this mode of teaching and learning (BARRETO; ROCHA, 2020).

To adapt to remote teaching, teachers had to deal with the complexity of creating methodologies that utilize digital technologies, including the multiple languages these technologies offer, as well as the challenges of providing "all students with education based on the principles of inclusion and respect for differences" (OLIVEIRA; SILVA; SILVA, 2020, p. 33).

There are numerous challenges for teaching practices in the current context. Regarding digital technologies in the context of Early Childhood Education, teachers are required to rethink their modes of operation and understand these technologies to integrate them into teaching in a critical, reflective, and meaningful way. Schools are expected to restructure their projects and pedagogical proposals, as well as create new paths based on those already established. Furthermore, it is essential to rethink and adapt the initial teacher training model to contemporary needs (BARRETO; ROCHA, 2020; OLIVEIRA; SILVA; SILVA, 2020).

Therefore, this research aims to analyze digital literacy practices in the context of Early Childhood Education, as found in theses and dissertations, to understand how these practices contribute to the teaching and learning process for children aged zero to five years. The methodology used for this article was qualitative, involving a bibliographic review of academic productions to explore and discuss what existing research presents on the topic.

Regarding the theses and dissertations, they were selected from the Brazilian Digital Library of Theses and Dissertations (BDTD). The search period was set from 2010 to 2022 to ensure a discussion relevant to the current social context. Thus, by using the keywords digital literacy, digital literacy practices, and digital technology, one thesis and 17 dissertations were selected.

For the theoretical framework, essential authors for understanding the discussed topics were utilized. Belloni (2009), Frade et al. (2018), Kenski (2012), and Lima (2018) contributed to the

understanding of digital literacy and digital literacy practices. Additionally, analyzing Brazilian legislation related to Early Childhood Education was fundamental for supporting the research.

Therefore, this article is divided into four additional sections. In the second section, the selected theses and dissertations from the BDTD were analyzed, highlighting digital literacy practices within Brazilian Early Childhood Education institutions and their contributions to children's learning in this context.

The third section discusses the concepts of digital literacy and digital literacy practices, emphasizing digital technologies. It demonstrates the importance of integrating these technologies into educational institutions, the role of Basic Education in the digital age, and the challenges posed by digital technologies in the field of education. The final section presents the conclusions, highlighting the discussions and results presented earlier.

1 Research in the Field of Digital Literacy and Early Childhood Education

In this section, theses and dissertations related to digital literacy in Early Childhood Education are analyzed. Using the BDTD website to determine the number of theses and dissertations produced on Early Childhood Education from 2010 to 2020, a search was conducted using the keyword "Early Childhood Education" in the "all fields" option. A total of 4,199 theses and dissertations were found. Consequently, this search was supplemented with three additional keywords: digital literacy, digital literacy practices, and digital technology. By adding an additional search field and including the keyword "digital literacy" in the "all fields" option, 76 theses and dissertations were identified.

Based on the results and to find works related to Early Childhood Education and digital literacy, an advanced search was conducted using the keywords "Early Childhood Education" in the "title" field and "digital literacy" in the "all fields" option. This search yielded 29 dissertations and three theses. However, upon reviewing the titles, only three dissertations were relevant to the topic of this article.

Regarding the term "digital literacy," the search was conducted using the keywords "Early Childhood Education" in the "title" field and "digital literacy" in the "all fields" option. A total of 29 dissertations and eight theses were found, but only two dissertations were related to digital literacy.

For the term "digital technology," an advanced search using the keywords "Early Childhood Education" in the "title" field and "digital technology" in the "all fields" option resulted in 69

dissertations and 15 theses. Of these, only 15 dissertations and one thesis were aligned with the objective of this article.

Upon analyzing the theses and dissertations found in each of these three searches, it is observed that two dissertations selected from the first search, as well as one dissertation selected from the second search, were also found in the third search. Thus, excluding the duplicate dissertations, a total of 17 dissertations and one thesis were selected.

The selected thesis is authored by Ferreira (2014) and is titled "The Playful Culture of Contemporary Children in the 'Multiscreen Society': What the 'Voices' of Boys and Girls in an Early Childhood Education Institution Reveal." It was produced at the Federal University of Santa Catarina in 2014. As for the dissertations, these will be presented in Table 1, titled "Digital Technology in Research within the Context of Early Childhood Education," where it is possible to view the university, title, author, and year of publication.

Table 1 – Digital Technology in Research within the Context of Early Childhood Education

University	**Title**	**Author**	**Publication**
University of Oeste Paulista	Childhood, ICT, and Play: A Study from the Perspective of Early Childhood Education Professionals: Challenges of the Homo Zapiens Generation **Link:** http://bdtd.unoeste.br:8080/tede/handle/tede/887	Luciana Maria Rinaldini Canassa	2013
Federal University of Santa Maria	Geotechnological Resources as a Pedagogical Possibility in Early Childhood Education Link: http://repositorio.ufsm.br/handle/1/9583	Sonia Maria Gonçalves da Silva	2013
University of Vale do Rio dos Sino	Tablets in Early Childhood Education: Technology in the Classroom and Its Benefits for the Literacy Process. *Link*: http://www.repositorio.jesuita.org.br/handle/UNISINOS/3630	Ana Margarida Chiavaro Machado	2014
Tuiuti University of Paraná	Digital Media and Its Relationship with Early Childhood Children: Teachers' Perceptions on Interactivity and Communication Processes. *Link*: https://tede.utp.br/jspui/handle/tede/1408	Emilene da Conceição Novak	2014
University of Caxias do Sul	Play in Early Childhood Education: The Influence of Mobile Digital Technologies on the Context of Play. *Link*: https://repositorio.ucs.br/handle/11338/988	Lorivane Meneguzzo	2014
Federal University of Paraíba	The Educational Table Technology "Alfabeto" in the Service of Reading Acquisition in Early Childhood Education. *Link*: https://repositorio.ufpb.br/jspui/handle/tede/8448	Maria do Socorro do Nascimento	2015
Pontifical	Digital Information and Communication Technologies in Early	Nedia Maria	2015

Catholic University of Minas Gerais	Childhood Education: Social Representations of Teachers. *Link*: http://www.biblioteca.pucminas.br/teses/Educacao_OliveiraNM1.pdf	de Oliveira	
University of Brasília	Teachers' Representations on the Use of Computers in Early Childhood Education: A Case Study in a Public School in Santa Maria (DF). *Link*: https://repositorio.unb.br/handle/10482/19166	Diva Lúcia Rodrigues	2015a
University of Brasília	Communication and Mediation between Early Childhood Children and Digital Information in Early Childhood Education. *Link*: https://repositorio.unb.br/handle/10482/18803	Viviane da Rocha Rodrigues	2015b
Federal University of Santa Maria	Digital Inclusion in Early Childhood Education: Children's Cultures in Contemporary Cultures. *Link*: https://repositorio.ufsm.br/handle/1/13625	Fabiana Rampelotto Penteado	2016
Federal University of Pelotas	The Pleasure of Play: Between Analog and Digital – Early Childhood Education Children:-). *Link*: http://guaiaca.ufpel.edu.br:8080/handle/prefix/4437	Alesandra Lange Marten	2017
Federal University of Minas Gerais	Integration of New Technologies in Early Childhood Education: A Study of a Project in UMEIs of Belo Horizonte. *Link*: http://hdl.handle.net/1843/BUOS-B2YJUJ	Carmen Lúcia Leal Almeida	2018
Federal University of Santa Maria	Mediation of Computational Thinking and Programming in the Interaction Process of Children in Early Childhood Education. *Link*: http://repositorio.ufsm.br/handle/1/15906	Cristiane Inês Bremm	2018
Federal Rural University of Pernambuco	Social Mediations and Technologies in Interactions in Early Childhood Education: The Use of the Alfabeto Positivo Educational Table in a Nursery in Recife-PE. *Link*: http://www.tede2.ufrpe.br:8080/tede2/handle/tede2/8491	Aunia Heyde Candy Dantas da Silva	2019
Federal University of São Carlos	The Role of Interactions and Languages in Teaching Technological Sciences in the Context of Early Childhood Education. *Link*: https://repositorio.ufscar.br/handle/ufscar/11448	Carolina Costa Miguel	2019
University of São Paulo	An Analysis of the Effects of Digital Technologies on Early Childhood Learning. *Link*: https://www.teses.usp.br/teses/disponiveis/97/97138/tde-18012022-121822/pt-br.php	Josefa Edivoneide Andrade dos Santos	2020
Pontifical Catholic University of Campinas	Digital Childhood: Children's Elaborations on Their Experiences in Early Childhood Education Through Tablet Use. *Link*: http://repositorio.sis.puc-campinas.edu.br/xmlui/handle/123456789/15572	Manuela Azevêdo Queiroz	2021

Source: Prepared by the authors (São Carlos, 2022).

Based on the search presented in Table 1, there is a noticeable absence of studies addressing the theme of this article related to digital literacy in Early Childhood Education. To analyze the data, four analytical axes are established: content nature, theoretical basis in Early Childhood Education and digital technology, research methodology, and research contribution. It is important to note that

the data were analyzed through the examination of the research abstracts, methodological procedures sections, final considerations, and references used in each selected work.

From the analyzed works, it is evident that digital literacy in Early Childhood Education is a recent topic in Brazilian research, with publication years ranging from 2013 to 2021. Most of the research was conducted at the Federal University of Santa Maria (3) and the University of Brasília (2). The remaining research was conducted at the following universities: University of Oeste Paulista, University of Vale do Rio dos Sinos, Federal University of Santa Catarina, Tuiuti University of Paraná, University of Caxias do Sul, Federal University of Paraíba, Federal University of Pelotas, Federal University of Minas Gerais, Federal University of São Carlos, Federal Rural University of Pernambuco, University of São Paulo, Pontifical Catholic University of Minas Gerais, and Pontifical Catholic University of Campinas.

The themes most related to the purpose of the work in the publications refer to the contributions of communication processes and digital media to the learning of children in Early Childhood Education; the contributions of digital technologies to the process of acquiring reading skills; play in contexts permeated by mobile digital devices; and the importance of digital technologies in Early Childhood Education.

The analysis of the data shows that, in the context of Early Childhood Education, digital technologies are minimally integrated into teachers' pedagogical practices (SILVA, 2013). The difficulties in this integration are related to teachers' resistance to accepting and using digital technologies (ALMEIDA, 2018; RODRIGUES, 2015a; SILVA, 2013) and their feelings of inadequacy in using these technologies competently (OLIVEIRA, 2015).

According to Rodrigues (2015a), this occurs due to a lack of mastery of digital language, a lack of knowledge about practical applications of these technologies in the classroom, and the perception that there is a disconnect between digital resources and the pedagogical routine of Early Childhood Education.

According to Silva (2019), human action is mediated by both macro and micro aspects. Thus, children in Early Childhood Education are influenced by their teachers, peers, and macro public policies, which, according to the study, do not support teachers in creating meaningful and purposeful uses of digital technologies in the classroom.

This highlights that both initial and ongoing teacher training still fall short in preparing educators for the educational use of digital information and communication technologies. Novak

(2014) and Oliveira (2015) emphasize the importance of investing in the professional development of educators so that instead of inhibiting the use of digital technologies by children, they can be encouraged to use them constructively.

Furthermore, teacher training programs are crucial for discussing and (re)constructing Early Childhood Education in meaningful and creative ways, as well as for stimulating reflection on the teacher's own practice. This creates conditions for developing new approaches that consider the needs and tools available in today's society (OLIVEIRA, 2015).

Thus, Silva (2019) highlights that macro and micro dimensions need to establish a dialogue, ranging from the production and development of digital technologies and public policies to the actions of users in Early Childhood Education contexts. This dialogue would facilitate the organization of specific activities oriented towards digital technologies, which would benefit both children who have not yet engaged with these technologies and those who have an initial immersion with them, helping to create meaningful connections to the content.

Regarding teachers who integrate digital technologies into their pedagogical practice, it is observed that computers and cameras are the primary technological resources used (SILVA, 2013; RODRIGUES, 2015b). On the other hand, Canassa (2013) highlights that digital technologies are part of the daily lives of children in Early Childhood Education, thereby transforming children's cultures. It is noted that children's interest in playing with mobile devices lies in their flexibility and the ability of the screen to change in response to their touch (MENEGUZZO, 2014).

According to Marten (2017), using digital technologies in Early Childhood Education fosters more enjoyable and playful learning experiences and increases children's interest. Rodrigues (2015b) emphasizes that for this process to be meaningful, it is necessary to develop strategies for communication and mediation between digital information and children.

Machado (2014), in using tablets in the classroom with 5- and 6-year-olds, demonstrates how this technology can serve both as a didactic resource and a form of play. Thus, incorporating tablets into Early Childhood Education can enhance literacy and reading processes and increase children's motivation, as it is an innovative and engaging learning tool. Moreover, it can support more diverse teaching methods, allowing all students to interact with the mobile devices and engage with content tailored to their educational needs.

Thus, it is observed that children's interaction with digital resources provides them with challenges and reshapes their perceptions of both childhood and contemporary cultures. Interaction,

exploration, and experience with digital technology enhance learning across various knowledge areas (Penteado, 2016), contributing to the construction of knowledge, the development of autonomy, creativity (Rodrigues, 2015a), agency, socialization, technological appropriation, and digital inclusion (Almeida, 2018).

According to Queiroz (2021), providing tablets for children to photograph what they like most at school highlights the importance of digital resources for the psychological development of preschool children. This use of technology allows observation of psychological functions such as abstract thinking, voluntary attention, mediated memory, language, and intentional behavior. Additionally, other factors stand out when using digital resources in teaching and learning processes, such as technical skills (fine and gross motor coordination), disposition, confidence, patience, and the meanings and reinterpretations of the school context.

Santos (2020) notes that, in addition to cognitive skills and scientific concepts, working with digital technologies also fosters the development of socio-emotional skills such as creativity, collaboration, communication, autonomy, and children's agency in the learning process. Oliveira (2015) further asserts that digital technologies impact children's development in various aspects, including motor and cognitive development, language, world knowledge, and education for diversity.

Diante disso, o uso das tecnologias digitais de forma planejada contextualiza e lúdica pode promover um ensino mais significativo, prazeroso e consistente, de modo a valorizar não apenas o cognitivo, mas também o socioemocional (SANTOS, 2020).

In the context of Early Childhood Education, providing access to digital technologies enables children to develop a more reflective perspective on the diverse information available through media and digital resources (Miguel, 2019). Furthermore, new ways of learning and expressing oneself emerge, fostering the development of more creative, collaborative, and interactive teaching concepts (Bremm, 2018).

As Meneguzzo (2014) states, it is crucial for the teacher to act as a guide, mediator, and motivator in the learning process. This involves creating strategies to integrate technological resources into children's play. Machado (2014) also highlights that, when using technological resources, the teacher plays a key role. The teacher must facilitate necessary mediations, encourage the sharing of knowledge, and manage peer interactions to maximize the educational benefits of these technologies.

Based on the discussion, it is evident that, provided the school has the necessary conditions and resources, the teacher can develop an educational project that innovatively integrates digital technologies within the context of Early Childhood Education (Nascimento, 2015; Rodrigues, 2015a).

In summary, integrating digital technologies into Early Childhood Education institutions contributes to the construction of children's learning and development, and supports the professional and technological growth of teachers and all involved in the process (Bremm, 2018). It is essential to rethink the use of digital technologies as an educational practice, incorporating educational games and activities to support literacy, reading, and writing, while fostering a critical and active perspective on concepts and values related to reality and the use of digital technologies (Oliveira, 2015).

According to Queiroz (2021), for digital inclusion in schools to be successful, three steps are necessary: acquiring technological equipment, preparing teachers through courses on digital technology usage, and promoting training focused on integrating these technologies into teaching and learning practices.

Therefore, integrating digital technologies into Early Childhood Education contexts, through children’s play and well-planned activities by teachers, can facilitate efforts to develop digital literacy and help children engage with digital cultures and learn how to use technological resources more consciously.

2 The Role of Digital Literacy in Early Childhood Education

The appropriation of digital technology in support of social practices demanded by digital culture is conceptualized as digital literacy, as defined by Lima (2018). To effectively use digital technology, one requires digital literacy, which Lima (2018) describes as knowing how to use technological tools, their programs, and the internet to participate in cyberculture.

Lima (2018) asserts that a certain level of digital literacy is necessary for practicing digital literacy. This means that it is not essential to know how to use all technological tools, but one must have a basic understanding of the digital technology they intend to use. As such, the author emphasizes that it is not about being digitally literate or not but rather "the level of literacy required by the degree of literacy in a specific practice" (LIMA, 2018, p. 23).

Regarding children in the context of digital literacy, Lima (2018) refers to them as digital natives, meaning individuals born into an environment saturated with technology. For these children, access to and use of digital technology can seem natural. However, it is important to highlight that

social and economic factors influence access to digital technologies, leading to a situation where a significant portion of the population lacks the necessary resources to ensure that children grow up as digital natives.

Given the context, the school's role in the formation of children is crucial, as it provides an opportunity to integrate students into the information society and grant access to various digital technologies, thereby reducing social disparities (LIMA, 2018). Frade et al. (2018) also emphasize the importance of incorporating additional reading and writing tools in the educational environment. They believe that even children in the early stages of learning to write can and should use internet-connected tools (FRADE et al., 2018).

For this integration to happen effectively, schools need to be open to innovations, allowing the use of technological resources within their premises, given their prevalence in other social practices. However, it is important that digital technologies are adopted critically and creatively by teachers, who must receive adequate training to effectively incorporate and adapt these technologies (FRADE et al., 2018).

According to Frade et al. (2018), the use of digital technologies for educational activities differs from their free use by children in their everyday lives. In schools, the goal is to use these technologies to support literacy, reading, and writing, which requires careful planning by the teacher. As Frade et al. (2018, p. 38) note, the use of digital resources “demands important cognitive operations in the act of writing (perceiving, analyzing, synthesizing), which mobilize other operations related to the functioning of writing (selecting, relating, generalizing)”.

Consequently, in addition to the contributions to the teaching and learning processes for young children, as analyzed in the previously selected research, working with digital activities provides a rich and intense interactive process involving the teacher, peers, technological resources, and the challenges posed by the proposed activities (FRADE et al., 2018).

Incorporating digital activities into the educational setting allows teachers to enhance children's learning experiences. By engaging in writing practices within a digital environment, children are encouraged to explore various writing hypotheses, which promotes more meaningful learning. Additionally, access to computers provided by schools helps children discover new forms of communication and interaction with others (FRADE *et al.*, 2018).

Soares (2002) asserts that using screens for learning to read and write fosters new ways of accessing information and promotes novel methods of reading and writing. This results in a new form of literacy—an evolved state for those who engage in reading and writing practices on screens.

In light of these considerations, the role of educational institutions becomes evident. According to Kenski (2012), schools are responsible for creating a critical space for the use and appropriation of digital technologies. Similarly, Belloni (2009, p. 5) emphasizes that the purpose of education is to prepare individuals for life in society, which involves "the critical and creative appropriation of all technical resources available in this society."

As analyzed in the previously selected research, digital technologies are rarely integrated into the pedagogical practices of early childhood education due to resistance to accepting and utilizing technological resources. Therefore, it is crucial to provide teachers with time and opportunities to familiarize themselves with new educational digital technologies, understanding their possibilities and limitations (KENSKI, 2012).

Digital technologies need to be seen as opportunities for acquiring knowledge. This does not occur merely through the use of technological resources but through the interactive and communicative possibilities they offer between teachers and students. It enables collaborative research, shared information and knowledge, dialogues with other realities, and active and collaborative roles in the educational activity (KENSKI, 2012).

For digital technologies to be effectively integrated into educational institutions, investment in equipment and ensuring conditions for usage and access are essential. As Belloni (2009) highlights, the integration of digital technologies in schools must be carried out with creativity, critical thinking, and theoretical grounding. This requires investment and transformations in didactic and pedagogical materials, selection and acquisition of equipment, teaching methodologies, and teacher training.

However, Kenski (2012) observes that many Brazilian schools lack the minimal infrastructure necessary for developing their educational activities. In light of this, there is a pressing need for mobilization among public systems, educational institutions, and society at large to help these schools advance qualitatively in their educational processes, integrating their activities into the digital environment (KENSKI, 2012).

Therefore, effective integration of digital technologies into school contexts necessitates new political stances and educational management approaches. According to Kenski (2012, p. 81), these new positions should be grounded in truly democratic principles, emphasizing that "decentralization,

autonomy, responsibility, participation, and quality" must be transformed into practices built collectively.

Given these considerations, it is clear that the interest of preschool children in digital technologies promotes more enjoyable and playful learning experiences. Therefore, integrating these technologies into early educational contexts not only enhances children's learning but also enables teachers to use creative, interdisciplinary approaches and share knowledge through interaction. It is crucial to integrate digital technologies into early childhood education in a critical, meaningful, reflective, and ethical manner. This integration requires changes in teaching methods and didactics, as well as investments in equipment and teacher training.

Final considerations

This article aimed to analyze digital literacy practices in the context of early childhood education as found in theses and dissertations, to understand how these practices contribute to the teaching and learning process of children aged zero to five years.

The article highlights that in early childhood education, the guiding principles for pedagogical practices should be interactions and play. Furthermore, it emphasizes that for the integral development of children, it is essential to connect their experiences and knowledge with cultural, environmental, scientific, artistic, and technological heritage.

The BNCC (Brazilian National Common Curricular Base, 2017) underscores the importance of using digital technologies in early childhood education, presenting a new challenge for early childhood schools: integrating digital language and new technological resources into their pedagogical practices in a coordinated and intentional manner. This integration aims to enable children to engage more consciously and critically with digital contexts.

In this context, early childhood education plays a crucial role in forming children, integrating them into the information society, and providing access to various digital technologies. Integrating technologies into the literacy and education process not only supports the development of cognitive, emotional, and social skills but also enhances learning content, comprehension of socially used writing resources, and reduces social differences that affect active participation in society.

It is observed that mediation and interaction are essential for the educational work developed in early childhood education, as the teacher's mediation and the interaction between children and adults, as well as among the children themselves, foster significant development. Consequently, it is

the teacher's role to plan and act directly and intentionally in the child's development, stimulating learning and proposing new challenges.

By integrating digital technologies into early childhood education and providing access to and knowledge of digital languages, children can develop a more reflective perspective on the various information available through media and digital resources. This integration enables children to explore new ways of expressing themselves and learning, promoting more collaborative, creative, and interactive teaching approaches.

Therefore, the importance of integrating digital technologies into Brazilian early childhood educational institutions was evident, as these tools, when used as pedagogical resources, allow for interdisciplinary, creative, and critical approaches, thereby improving teaching. However, it is essential to emphasize that the use of digital technologies requires changes in teaching and didactics, as learning is not simply developed through the use of technology but through the opportunities for interaction and communication between teachers and students.

Therefore, by analyzing the increasing presence of digital technologies in early childhood educational settings, it becomes clear that these technologies need to be integrated innovatively and systematically within these contexts. Based on the selected research, some proposed solutions by the authors for achieving this integration include: promoting training specifically aimed at incorporating these technologies into teaching and learning practices; rethinking the use of digital technologies as an educational practice; planning and organizing activities with digital technologies through children's play; and acquiring the necessary technological equipment for these practices to be developed.

Finally, it is important to highlight that this article has shown that the topic studied, namely digital literacy in the context of early childhood education, has few theses and dissertations for analysis. Therefore, it underscores the importance and need for further research that takes into account digital technologies in early childhood education contexts.

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