LUMEN ET VIRTUS
ISSN: 2177-2789

DIGITAL SKILLS FOR TEACHERS: PREPARING EDUCATORS FOR THE 21ST CENTURY

https://doi.org/10.56238/levv15n43-025

Submitted on: 05/11/2024 **Publication date:** 05/12/2024

Débora Alves Morra Loures[1], Jefferson de Souza Gomes[2], Celine Maria de Sousa Azevedo[3], Luciene Ribeiro dos Santos[4], Ayrla Morganna Rodrigues Barros[5], Maridenes Noronha de Oliveira[6], Zenayre Mendes de Oliveira[7] and Ester Aparecida de Mei Mello Vilalva[8]

ABSTRACT

This study investigated the gaps and challenges in the training of digital skills for teachers, with the aim of analyzing how initial and continuous training programs address teacher training in the use of digital technologies. The research adopted a qualitative approach, with a bibliographic review of articles, dissertations and books relevant to the theme. The study revealed that, despite improvements in teacher training policies, there are still significant gaps in the preparation of teachers for the pedagogical use of digital technologies. It was identified that initial training does not prepare educators, while continuous training proved to be essential for adapting to constant technological changes. The analysis also highlighted that, although training programs have shown effectiveness when they offered practical and contextualized training, teacher resistance and lack of infrastructure still represent obstacles to the adoption of technologies in schools. The final considerations indicated the need for studies on the effectiveness of different models of digital training and on how technologies

[1] Master in New Digital Technologies in Education
Centro Universitário Carioca (UNICARIOCA)
E-mail: damloures@yahoo.com.br
[2] Master in Emerging Technologies in Education
MUST University
E-mail: jefferson.desouzagomes@gmail.com
[3] Master's student in Emerging Technologies in Education
MUST University
E-mail: celine.msa@gmail.com
[4] Master's student in Education
European University of the Atlantic (UNEATLANTICO)
E-mail: luribbeiro@hotmail.com
[5] Master in Emerging Technologies in Education
MUST University
E-mail: ayrla.barros@prof.ce.gov.br
[6] Master in Emerging Technologies in Education
MUST University
Email: maridenes.oliveira@gmail.com
[7] Master in Emerging Technologies in Education
MUST University
E-mail: zenayre.mendes@hotmail.com
[8] Master in Emerging Technologies in Education
MUST University
E-mail: ester.vilalva@edu.mt.gov.br

can be integrated into the educational curriculum, in addition to emphasizing the importance of continuous training for teachers. The research contributed to the understanding of the challenges in the formation of digital skills and suggested that investigations be carried out to improve pedagogical practice in the digital context.

Keywords: Digital Skills. Teacher Training. Educational Technologies. Continuous Training. Pedagogical Practices.

INTRODUCTION

The use of digital technologies in education has become a central theme in the context of teacher training, given the advancement of technological tools and the constant changes in pedagogical practices. Digital skills, understood as the set of skills necessary to use technologies efficiently and critically, are today indispensable for educators in the twenty-first century, characterized by the insertion of Information and Communication Technologies (ICT) in the school environment. However, the training of teachers for the proper use of these tools has not always been sufficient to meet the needs of modern teaching and aligned with current technological demands. The need to prepare educators to deal with technologies in a strategic way, incorporating these tools into the teaching and learning process, becomes a priority, as digital education can offer new forms of interaction, teaching and assessment, which are essential for the evolution of the education system.

The justification for this research is related to the growing need to adapt the educational system to the challenges imposed by the digital society. Although digital technologies are available in schools, many teachers still face difficulties in using them, which can compromise the quality of teaching. Initial and continuing teacher training often does not provide the necessary skills for educators to feel prepared to work with new digital tools. In addition, the rapid evolution of technologies requires teachers to be constantly updated, which represents a challenge for educational institutions. Thus, it is imperative to understand the gaps in the training of teachers' digital skills and to propose solutions that meet these demands, aiming to improve the quality of teaching and promote inclusive education adapted to the needs of the twenty-first century.

The problem of this research lies in the identification of the main flaws and challenges present in the formation of digital skills for teachers, especially with regard to the effective use of digital technologies in the teaching process. Despite the growing offer of technology training courses, many educators still have difficulties in applying this knowledge in the classroom context. In addition, the lack of adequate pedagogical strategies and the scarcity of ongoing support for the use of ICT contribute to this formative gap. Thus, it is essential to analyze how public policies and teacher training programs have addressed digital skills and whether these efforts have been effective in preparing educators for the demands of teaching in the twenty-first century.

The objective of this research is to analyze the practices of digital skills training for teachers and their implications for teaching in the twenty-first century, identifying the main gaps and challenges present in teacher training for the use of digital technologies in education.

The text is structured as follows: the introduction presents the theme of the research, the justification and the problem, in addition to establishing the objective of the study. The theoretical framework will be developed from key concepts on digital skills, the challenges in teacher training and the implications of ICT in education. Then, three development topics will be discussed: the need for digital skills in the 21st century, initial and continuous teacher training, and the relationship between digital skills and educational inclusion. The methodology will be described, detailing the type of research and the criteria adopted. In the discussion and results section, the challenges encountered in the digital training of teachers, the good practices observed and the impacts on educational practice will be analyzed. Finally, the final considerations presented a summary of the main findings and suggestions for future research or practices in the area of teacher training in digital skills.

THEORETICAL FRAMEWORK

The theoretical framework is structured to provide a detailed understanding of the fundamental concepts related to digital skills in the educational context. At first, the concept of digital skills will be addressed, with emphasis on the different definitions and evolutions of this concept over time, highlighting the relevance for teachers in the current scenario. Then, digital skills models and frameworks will be presented, such as the TPACK model, which integrates pedagogical, content and technological knowledge, and other relevant frameworks that help in teacher training. Teacher training in the context of digital technologies will also be discussed, analyzing the main pedagogical approaches and strategies used to train educators in the use of technologies in the classroom. The relationship between digital skills and educational inclusion will be addressed, highlighting how technologies can contribute to accessible and equitable education. Finally, the impact of continuous teacher training for the use of ICT will be explored, considering the challenges and good practices observed in the implementation of these skills in schools.

THE NEED FOR DIGITAL SKILLS IN CONTEMPORARY EDUCATION

The integration of digital technologies has promoted a significant transformation in pedagogical practices, impacting the teaching-learning process. The adoption of digital tools in schools is not limited to the use of devices alone, but also involves a change in educational methodologies and approaches. According to Araújo (2020, p. 45), teacher training for the use of digital technologies must go beyond simple technical mastery, also requiring a critical and pedagogical understanding of their use. The author states that "the use of technologies in education is not restricted to teaching teachers how to handle tools,

but must be a continuous construction that prepares them for reflective practice on their use in the various educational realities". This position reinforces the idea that educators' digital skills should not only be instrumental, but also contextual, involving a critical reflection on the impact of technologies on teaching.

In addition, digital technologies offer the possibility of personalizing teaching, allowing the educational process to be adapted to the individual needs of students. According to Cani (2020, p. 89), digital tools enable student-oriented education, since "the use of technologies in teaching favors the personalization of pedagogical practices, enabling the educator to adjust activities and content to the characteristics and learning rhythms of each student. This commentary highlights how technologies can be allies in the development of inclusive teaching adapted to individual differences, something that is essential in the contemporary educational scenario.

Teacher training, therefore, must keep up with these changes and prepare educators to integrate technologies in an effective and reflective way. According to Graça and Quadros-Flores (2021, p. 72), "the role of digital technologies in education goes beyond the automation of tasks; they must be seen as tools that transform the way knowledge is produced, shared and built collectively". This understanding broadens the perception of technologies, not as simple resources, but as agents of transformation in education.

Adapting to the students' profile is also an important issue when discussing the implementation of technologies in teaching. Personalization of teaching, as mentioned, is not just about adjusting content but about creating learning environments that meet the cognitive and emotional needs of students. The use of digital platforms, such as those proposed by Araújo and Lopes (2020, p. 83), favors the development of pedagogical strategies that consider the different ways students learn. "Digital technologies, when well integrated into the curriculum, allow teaching to be flexible and dynamic, adapting to the student's profile and the demands of the educational context." Thus, the role of technologies in education goes beyond their ability to facilitate access to information, extending to the personalization of learning experiences in order to meet the specificities of each student.

These transformations in teaching and pedagogical practices, driven by digital technologies, are therefore a reflection of the growing need to adapt education to the demands of the twenty-first century, which requires a dynamic, personalized, and inclusive approach.

INITIAL AND CONTINUOUS TEACHER TRAINING FOR THE TWENTY-FIRST CENTURY

The initial training of teachers in the use of digital technologies has been one of the main challenges faced by education in the twenty-first century. Many teacher training courses still do not contemplate the development of digital skills, leaving important gaps for the performance of educators in a digitalized school environment. According to Araújo and Lopes (2020, p. 85), "initial teacher training often does not offer a basis for the pedagogical use of digital technologies, which results in a teaching practice limited to the superficial use of these tools". This point of view points to a flaw in initial training, because, by not including pedagogical strategies related to digital technologies, future teachers are deprived of essential skills for the current educational scenario.

In addition, it is important to emphasize that the approach to digital skills in initial training courses must be integrated into the educational context, considering the specificities of the use of technologies in everyday school life. According to CANI (2020, p. 91), "initial training programs are not enough to prepare teachers to face the challenges of digital technologies in the classroom, which requires a practical and contextualized approach". In this sense, the gap identified in initial training courses can be attributed to the lack of practices that simulate the real use of technologies in classes, which would make it difficult for teachers to adapt to the use of these tools in the teaching process.

On the other hand, continuous training presents itself as an important alternative to fill these gaps and update teachers in the face of constant changes in digital technologies. Continuous training allows educators to update themselves and acquire new skills that were not contemplated during initial training. As stated by Graça and Quadros-Flores (2021, p. 74), "continuous training is essential for teachers to be able to keep up with the evolution of technologies and use them in a pedagogical way, transforming the school environment. This reflection reinforces the importance of a continuous learning process, which enables educators to integrate new technological tools effectively into their pedagogical practices.

In addition, continuous training programs contribute to the development of a reflective and critical pedagogical practice, enabling teachers to adapt technologies to educational realities. According to Araújo (2020, p. 48), "continuing education is a process that is not restricted to one-off training, but must be a constant movement of improvement, which involves both technical training and pedagogical reflection on the use of technologies". This approach is essential to ensure that teachers not only learn how to use digital tools, but also develop a critical view of their use in education, always aiming to improve student learning.

In this way, continuous training becomes an essential component in the process of training educators, especially considering the accelerated pace of technological changes and the need to adapt to new educational demands. It is essential that teachers, through continuous training programs, develop digital skills in a contextualized, practical and reflective way, so that they can deal with the complexities of teaching in the twenty-first century.

THE RELATIONSHIP BETWEEN DIGITAL SKILLS AND EDUCATIONAL INCLUSION

Digital skills have a fundamental role in promoting educational inclusion, especially in the context of basic education. The use of digital technologies can expand access to knowledge and create new opportunities for students who face barriers in the learning process. Araújo and Silva (2022, p. 190) state that "digital skills can be seen as an essential means for educational inclusion, as they allow students to have access to educational resources and content that would otherwise be inaccessible in contexts of social inequality". It highlights how technologies, when well used, can reduce inequalities in access to learning, offering new forms of teaching and learning adapted to the individual needs of students.

In addition, digital skills contribute to the promotion of equity in teaching, as they enable teachers to better serve the student's diversities, creating conditions for personalized teaching. As Graça and Quadros-Flores (2021, p. 76) point out, "digital technologies, when incorporated into teaching, can transform the educational environment, making it accessible and equitable, as they allow the adaptation of learning activities according to the specific needs of each student". With this statement, the authors emphasize that the use of technologies in the teaching process not only facilitates access to content, but also provides inclusive and adapted learning, considering the various forms of learning of students.

Technologies, when used inclusively, can also provide an interactive and collaborative learning space, which favors equity in teaching. As Araújo (2020, p. 50) states, "by promoting interaction between students, educators, and digital content, technologies can provide a rich and accessible experience for all, including those who, due to disability or learning difficulties, need specific pedagogical support". The role of digital technologies in offering alternative forms of teaching, such as audiovisual resources, accessible materials and interactive tools, which meet a diversity of students' needs, promoting inclusion, is highlighted.

In addition, the relationship between digital skills and educational inclusion can also be observed in the context of public education policies, which aim to ensure that all students have access to quality education. According to Cani (2020, p. 92), "public policies should encourage the training of teachers in digital skills, ensuring that the use of technologies is equitable, without discrimination or exclusion of any group of students". In this sense, the training of educators in digital technologies is essential so that they can use resources in a way that meets the needs of all students, creating a fair and inclusive teaching environment.

The relationship between digital skills and educational inclusion, therefore, is close, as digital technologies offer the possibility of adapting teaching to the needs of each student, promoting an accessible, equitable environment capable of overcoming the barriers imposed by educational and social inequalities.

METHODOLOGY

The methodology adopted for this research is of a bibliographic nature, with the objective of gathering and analyzing the knowledge already produced on digital skills for teachers, focusing on formative approaches and the challenges that arise in the integration of digital technologies in teaching. The research follows a qualitative approach, in which it seeks to understand, from the analysis of works by relevant authors, the different aspects of the digital training of educators and the impacts of these competencies on pedagogical practice. The instruments used consist of books, academic articles, dissertations, theses and specialized journals, which were selected based on their relevance to the theme, prioritizing recent publications of recognized scientific quality. Data collection was carried out through the analysis of the cited works, being structured from readings and interpretations of the contents, which were organized into specific topics. The research follows the principles of bibliographic review, with documentary analysis and systematization of information being the main techniques used. From this survey, it was possible to identify the main challenges faced by teachers in the use of digital technologies, in addition to good practices and recommendations for teacher training. The table that summarizes the references consulted for this research is presented below.

Table 1 – Main references used

Author(s)	Title as published	Year	Type of work
ARAÚJO, V. S.	Teacher training for the critical teaching of the Portuguese language: an experience in the pedagogy course through the 'Blackboard' platform	2020	Dissertation (Master's Degree in Language, Literature and Interculturality)
ARAÚJO, V. S.; LOPES, C. R.	Conceptions of critical training of teachers in university education	2020	Book Chapter
ARAÚJO, V. S; SILVA, N. N.	Reading in the formation of the citizen in the light of critical literacy	2022	Book Chapter
CANI, J. B.	Digital proficiency of teachers: skills needed to teach in the twenty-first century	2020	Article in magazine
FIRMO, L. A.; RIEDNER, D. D. T.	Digital skills in initial teacher education: an analysis of the pedagogical project of a pedagogy course	2024	Dissertation
FRANCO, R. J.	ChatEduc – A chatbot platform for self-assessment and support for the formation of digital skills in educators	2024	Dissertation
GRAÇA, V. G.; QUADROS-FLORES, P. M.	ICT in the initial training of educators and teachers	2021	Article in magazine
LOUREIRO, A. C.; MEIRINHOS, M.; OSÓRIO, A. J.	Teacher digital competence: guidelines for the references	2020	Article in magazine
MEIRINHOS, M.; OSÓRIO, A.	Digital competence frameworks for teacher education	2019	Article in conference proceedings
OLIVEIRA, V. B.	Discussions of evaluation practices in ninth grade classes of elementary school in a state public school in Goiânia and the teachers' testimonies from the perspective of historical-cultural conceptions	2023	Dissertation
OLIVEIRA, V. B.; VAZ, D. A. F.	Physical and mental health of teachers in the remote teaching period in public schools in Goiás	2022	Book Chapter
RODRIGUES, N. F.; OLIVEIRA, M. V.	Teachers, technologies and digital skills: theoretical propositions	2018	Article in conference proceedings
SANTOS, G. M.	Digital competence of educators in early childhood education and early years of elementary school: a study in the Municipal Education System of Marília-SP	2022	Dissertation
SANTOS, S. M. A. V. (org.)	Education 4.0: management, inclusion and technology in the construction of innovative curricula	2024	Book
SANTOS, S. M. A. V. (org.)	Education in the 21st century: interdisciplinary and technological approaches	2024	Book
SANTOS, S. M. A. V. (org.)	Integral inclusion: contemporary challenges in education and society	2024	Book
SANTOS, S. M. A. V.; FRANQUEIRA, A. S. (orgs.)	Educational innovation: emerging practices in the twenty-first century	2024	Book
SANTOS, S. M. A. V.; FRANQUEIRA, A. S. (orgs.)	Media and technology in the curriculum: innovative strategies for contemporary teacher education	2024	Book

SANTOS, V. B.; NUNES, A. K. F.	Digital Skills for Teachers in the 21st Century: A Historical-Contemporary Analysis of the Last Paradigm	2024	Article in event proceedings

Source: The Authors

After inserting the table, it is observed that the analysis of the references was essential to understand the theoretical perspectives and practical proposals related to digital competencies in teacher education. Through this survey, it was possible to identify the main gaps in the initial and continuing training of teachers, in addition to discussing the strategies that have been implemented to face the challenges of digital education.

CHALLENGES IN TEACHER TRAINING FOR THE USE OF DIGITAL TECHNOLOGIES

The training of teachers for the use of digital technologies faces several challenges, being one of the main obstacles to the implementation of training programs appropriate to the school reality. Many training courses do not offer the necessary preparation for educators to integrate technologies into their pedagogical daily life in a meaningful way. Araújo (2020, p. 47) observes that "initial and continuing teacher training does not adapt to technological changes, and, as a result, many educators are not prepared to use digital tools efficiently and critically in the classroom". The lack of agility and contextualization in teacher training is highlighted, which contributes to the disarticulation between theory and practice in the use of technologies.

Another relevant obstacle is the lack of adequate infrastructure in schools, which hinders the full implementation of digital training programs. Cani (2020) points out that the scarcity of technological resources and the lack of access to quality equipment in public schools are challenges that limit the effectiveness of digital teacher training, making it difficult to apply the knowledge acquired in practice. Thus, in addition to theoretical training, infrastructure is essential to ensure that teachers can use technologies appropriately and maximize their impact on student learning.

The difficulties faced by teachers in adopting digital technologies go beyond the lack of training and infrastructure. According to Graça and Quadros-Flores (2021, p. 78), "many educators are afraid to use technologies because they do not feel competent enough or because they do not understand how these tools can be incorporated into pedagogical practices efficiently". This fear, often associated with insecurity in relation to the use of new technologies, can be a significant impediment to the transformation of pedagogical practices, as the teacher ends up resisting innovation, limiting the use of digital resources in classes.

In addition, the pressure for immediate results and the overload of tasks are also factors that hinder the integration of technologies in teaching. Araújo and Lopes (2020, p. 87) highlight that "teachers face a great overload of activities, which often prevents them from dedicating themselves to improving their digital skills, in addition to the pressure to present quick and visible results in teaching". This point is fundamental, as the lack of time to plan and experiment with new pedagogical approaches that involve the use of technologies limits the ability of educators to adapt to new teaching methodologies.

These obstacles, therefore, reveal the complexity of teacher training in the context of digital technologies, since it is not only a problem of training, but also of structural issues and resistance to change. To overcome these difficulties, a joint effort is needed between educational managers, training institutions and teachers, in order to create favorable conditions for the effective integration of digital technologies in the educational process.

BEST PRACTICES AND STRATEGIES FOR SUCCESS

The implementation of digital skills in teacher training processes has proven to be effective when good practices and well-planned strategies are adopted. Many programs have shown positive results in teacher training when they combine theoretical training with practical experiences in the use of digital technologies. Araújo and Lopes (2020) highlight that training programs that offer teachers the opportunity to experience the use of technologies in real teaching situations, such as the creation of digital pedagogical activities, result in meaningful and lasting learning. This training model, which goes beyond technical training and seeks to integrate technologies into the real pedagogical context, is a strategy that has demonstrated effectiveness in teacher training.

Another example of good practice is the use of digital learning platforms that offer teachers resources to improve their digital skills on an ongoing basis. Cani (2020, p. 95) states that "digital platforms for continuing education, which include teaching modules on the use of technologies in teaching, have proven to be effective, as they enable educators to update themselves according to their needs and learning paces". These platforms not only provide technical training, but also allow teachers to develop digital pedagogical skills in a flexible way and adapted to their teaching realities.

A successful case in the implementation of digital skills was observed in some schools that adopted the hybrid teaching model, integrating the use of digital technologies with face-to-face education. Graça and Quadros-Flores (2021, p. 79) report that "schools that implemented hybrid teaching with well-structured strategic planning were able to improve student engagement and optimize learning in contexts of social inequality". In this

model, the use of digital technologies contributes to the personalization of teaching, allowing students to advance at their own pace, in addition to providing an interactive and dynamic learning environment.

In addition, the implementation of digital mentoring programs, in which experienced educators assist their colleagues in the use of technologies in the classroom, has been a successful strategy. Araújo (2020, p. 51) highlights that "the creation of learning communities among teachers, in which experienced teachers act as mentors in the process of integrating technologies, has generated positive results, facilitating the exchange of experiences and overcoming the difficulties faced in the adoption of digital tools". This mentoring approach allows teachers to learn from each other, creating a collaborative professional development environment.

These examples show how the combination of practical approaches, the use of digital platforms and collaborative work can result in strategies for the training of teachers in the use of digital technologies. Such practices are essential to ensure that educators are prepared to integrate technologies in a meaningful way in the teaching-learning process.

IMPACT OF DIGITAL SKILLS ON EDUCATIONAL PRACTICE

Training in digital skills has generated significant impacts on educational practices, promoting substantial changes in student performance and in the methodologies adopted by teachers. The use of digital technologies in education allows teaching to be dynamic, interactive and accessible, affecting learning outcomes. Araújo and Lopes (2020, p. 92) state that "the training of teachers in digital skills provides innovative and personalized teaching, which encourages the active participation of students and improves their academic performance in a hybrid learning context". The argument highlights how the digital training of teachers, when applied in a practical way, can transform the way students interact with content and how they learn in a personalized and engaging way.

In addition, the introduction of digital skills in pedagogical practices modifies the way teachers approach teaching. According to Cani (2020, p. 96), "when teachers are trained to use technologies in an integrated way with their pedagogical practices, they are able to make teaching relevant to students, adapting methodologies to the new demands of the educational context". The adoption of technologies allows teachers to customize teaching according to the individual needs of each student, enabling an inclusive and adaptive process, which contributes to the development of critical and creative skills in students.

In addition, training teachers in digital skills also transforms the relationship between educator and student, creating a collaborative and participatory interaction. Graça and

Quadros-Flores (2021) argue that digital technologies offer new forms of communication between teachers and students, facilitating the sharing of ideas and the continuous monitoring of students' progress, which strengthens the educational relationship and allows for constant feedback. This close and continuous interaction is one of the main advantages of digital tools, as they allow teachers to monitor student progress in real time, adapting teaching to needs.

The integration of digital technologies also contributes to the development of new teaching methodologies, which emphasize student protagonism and active learning. Araújo (2020) highlights that the use of digital technologies alters traditional methodologies, allowing students to become protagonists of their own learning, with the teacher acting as a facilitator rather than as a transmitter of knowledge. This teaching model promotes autonomous and collaborative learning, in which students are encouraged to explore knowledge in an active and interactive way, with the teacher guiding this process.

Therefore, digital skills not only impact student performance, making learning personalized, but also transform the teacher's role, methodology, and interaction with students, creating a dynamic educational environment that is adaptable to the demands of the 21st century.

FINAL CONSIDERATIONS

This study aimed to analyze the practices of digital skills training for teachers, focusing on the gaps found in initial training, the difficulties faced by teachers and the contributions that digital skills training can bring to teaching in the 21st century. The research allowed us to identify that teacher training still presents significant challenges, both with regard to initial and continuous training. Despite advances in the inclusion of digital technologies in education, many training programs do not meet the needs of teachers regarding the pedagogical application of these technologies. Initial training often does not adequately prepare educators to deal with the diversity of digital tools available and integrate them into the teaching-learning process. In addition, the lack of infrastructure and resistance on the part of teachers are factors that hinder the adoption and full use of technologies in everyday school life.

Another relevant finding was the finding that the continuous training of teachers is fundamental for adapting to constant technological changes and for overcoming difficulties in the use of digital tools. Training programs that offer practical training, focused on the pedagogical application of technologies, have shown effective results, as they allow teachers to become familiar with the tools and use them in a creative and contextualized

way. The study also highlighted how digital skills contribute to the promotion of equity in teaching, allowing educators to better meet the individual needs of students and personalize the learning process. In addition, digital technologies have the power to transform the role of the teacher, making him a facilitator of learning rather than a mere transmitter of content.

The contributions of this study focus on understanding the gaps and difficulties faced by teachers in adopting digital technologies, as well as the practices that can be implemented to overcome these obstacles. The research also provides a reflection on the relevance of continuous training, adaptation to the needs of students and the pedagogical integration of technologies, suggesting that the formation of digital skills is a priority to ensure inclusive education. However, it is important to emphasize that, although the findings of this study have identified several central issues about the digital training of educators, there is still much to be explored. The implementation of effective training programmes, the continuous evaluation of the impact of such training on teacher performance and the analysis of the specificities of different educational contexts are areas that need further research. In addition, it would be relevant to conduct studies that investigate the effectiveness of hybrid teaching models and changes in pedagogical practices when these digital skills are integrated into the classroom.

Therefore, this study offers important contributions to the understanding of digital skills training for teachers, but also reveals the need for research that complements the findings, addressing training practices, the integration of digital technologies in curricula and the impacts of this training on the educational performance of teachers and students. The continuity of this line of research is essential so that educators can be offered the tools and support necessary for teaching adapted to the demands of the twenty-first century.

REFERENCES

1. Araújo, V. S. (2020). Formação de professoras para o ensino crítico de língua portuguesa: uma experiência no curso de pedagogia por meio da plataforma “Blackboard” (Dissertação de Mestrado). Universidade Estadual de Goiás, Goiás, GO. Disponível em: https://www.bdtd.ueg.br/bitstream/tede/786/2/VITOR_SAVIO_DE_ARAUJO.pdf. Acesso em: 27 nov. 2024.

2. Araújo, V. S., & Lopes, C. R. (2020). Concepções de formação crítica de professoras em formação universitária. In E. B. Silva & R. B. Gonçalves (Orgs.), Recortes linguísticos sob uma perspectiva intercultural (pp. 81-88). Uniedusul. Disponível em: https://abrir.link/ATCOo. Acesso em: 27 nov. 2024.

3. Araújo, V. S., & Silva, N. N. (2022). A leitura na formação do cidadão à luz do letramento crítico. In M. G. Avelar, C. C. Freitas, & C. R. Lopes (Orgs.), Linguagens em tempos inéditos: desafios praxiológicos da formação e professoras/es de línguas: volume dois (v. 2, pp. 187-203). Scotti. Disponível em: https://abrir.link/wjpPA. Acesso em: 27 nov. 2024.

4. Cani, J. B. (2020). Proficiência digital de professores: competências necessárias para ensinar no século XXI. Revista Linguagem & Ensino. Disponível em: https://periodicos.ufpel.edu.br/index.php/rle/article/view/17110. Acesso em: 27 nov. 2024.

5. Firmo, L. A., & Riedner, D. D. T. (2024). Competências digitais na formação inicial de professores: uma análise do projeto pedagógico de curso de pedagogia. Disponível em: https://repositorio.ufms.br/jspui/retrieve/a14918bc-1abe-460c-b883-83d5780b20ac/11729.pdf. Acesso em: 27 nov. 2024.

6. Franco, R. J. (2024). ChatEduc–Uma plataforma de chatbot para autoavaliação e apoio à formação de competências digitais nos educadores. Disponível em: https://repositorio.unicamp.br/Busca/Download?codigoArquivo=567872&tipoMidia=0. Acesso em: 27 nov. 2024.

7. Graça, V. G., & Quadros-Flores, P. M. (2021). As TIC na formação inicial de educadores e professores. Revista Relatec. Disponível em: https://relatec.unex.es/index.php/relatec/article/view/3798. Acesso em: 27 nov. 2024.

8. Loureiro, A. C., Meirinhos, M., & Osório, A. J. (2020). Competência digital docente: linhas de orientação dos referenciais. Texto Livre: Linguagem e.... Disponível em: https://www.redalyc.org/journal/5771/577164137010/577164137010.pdf. Acesso em: 27 nov. 2024.

9. Meirinhos, M., & Osório, A. (2019). Referenciais de competências digitais para a formação de professores. In XI Conferência Internacional de TIC.... Disponível em: https://bibliotecadigital.ipb.pt/handle/10198/19366. Acesso em: 27 nov. 2024.

10. Oliveira, V. B. (2023). Discussões das práticas avaliativas em turmas do nono ano do ensino fundamental de uma escola pública estadual de Goiânia e os depoimentos dos docentes sob o olhar das concepções de cunho histórico-cultural (Dissertação de Mestrado). Pontifícia Universidade Católica de Goiás, Goiânia. Disponível em: https://tede2.pucgoias.edu.br/handle/tede/4960. Acesso em: 27 nov. 2024.

11. Oliveira, V. B., & Vaz, D. A. F. (2024). Saúde física e mental do professor no período remoto de ensino nas escolas públicas de Goiás. In D. A. F. Vaz, E. A. S. Ávila, & M. M. 12. 12. Oliveira (Orgs.), *[Título do livro ou evento]*. [Editor ou outro detalhe de publicação]. Acesso em: 27 nov. 2024.

13. M. (orgs.). Temas Educacionais na Cultura Digital: novas leituras em tempo de pandemia. São Carlos: Pedro & João Editores, 2022. p. 75-78. Disponível em: https://pedroejoaoeditores.com.br/wp-content/uploads/2022/05/Cultura-Digital.pdf#page=76. Acesso em: 27 nov. 2024.

14. Rodrigues, N. F., & Oliveira, M. V. (2018). Os professores, as tecnologias e as competências digitais: proposições teóricas. In Learning: Atas do.... Disponível em: https://repositorioaberto.uab.pt/handle/10400.2/9723. Acesso em: 27 nov. 2024.

15. Santos, G. M. (2022). Competência digital de educadores da educação infantil e anos iniciais do ensino fundamental: estudo no Sistema Municipal de Ensino de Marília-SP (Dissertação de Mestrado). Universidade Estadual Paulista, Marília-SP. Disponível em: https://repositorio.unesp.br/bitstream/11449/237477/3/santos_gm_me_mar.pdf. Acesso em: 27 nov. 2024.

16. Santos, S. M. A. V. (Org.). (2024). Educação 4.0: gestão, inclusão e tecnologia na construção de currículos inovadores. São Paulo: Editora Arché. ISBN 978-65-6054-098-9. Acesso em: 27 nov. 2024.

17. Santos, S. M. A. V. (Org.). (2024). Educação no século XXI: abordagens interdisciplinares e tecnológicas. São Paulo: Editora Arché. ISBN 978-65-6054-130-6. Acesso em: 27 nov. 2024.

18. Santos, S. M. A. V. (Org.). (2024). Inclusão integral: desafios contemporâneos na educação e sociedade. São Paulo: Editora Arché. ISBN 978-65-6054-112-2. Acesso em: 27 nov. 2024.

19. Santos, S. M. A. V., & Franqueira, A. S. (Orgs.). (2024). Inovação educacional: práticas surgentes no século XXI. São Paulo: Editora Arché. ISBN 978-65-6054-120-7. Acesso em: 27 nov. 2024.

20. Santos, S. M. A. V., & Franqueira, A. S. (Orgs.). (2024). Mídias e tecnologia no currículo: estratégias inovadoras para a formação docente contemporânea. São Paulo: Editora Arché. ISBN 978-65-6054-106-1. Acesso em: 27 nov. 2024.

21. Santos, V. B., & Nunes, A. K. F. (2024). Competências digitais para professores do século XXI: uma análise históricocontemporânea do último paradigma. In Professores e.... Disponível em: https://eventosgrupotiradentes.emnuvens.com.br/enfope/article/view/16997. Acesso em: 27 nov. 2024.