IMPACTS OF THE USE OF DIGITAL TECHNOLOGIES IN TEACHING IN TIMES OF PANDEMIC

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ABSTRACT

The advancement of digital technologies has significantly transformed education, promoting new teaching and learning methodologies. The implementation of Digital Information and Communication Technologies (ICTs) offers opportunities for the personalization of teaching, making it more dynamic and accessible. However, challenges such as teacher training and technological infrastructure still represent barriers to efficient integration. The COVID-19 pandemic reinforced the need to use these tools, boosting remote and hybrid teaching. In this context, this study analyzes the impact of the adoption of digital technologies in education, addressing its benefits, challenges and the importance of continuous teacher training for effective pedagogical use. The research aims to understand how ICTs can contribute to a more inclusive education aligned with the needs of contemporary society.

Keywords: Digital technologies. Education. Teacher training. Hybrid teaching.

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INTRODUCTION

The advancement of digital technologies has significantly impacted several spheres of society, including education. The insertion of these technologies in the teaching and learning process has been widely discussed, since it enables the expansion of pedagogical strategies and the personalization of teaching, providing students with new ways of accessing knowledge. However, this transformation also presents challenges, requiring teachers to constantly improve their practices and acquire new technological skills (Oliveira; Marinho, 2020).

The implementation of Digital Information and Communication Technologies (ICTs) in education has the potential to make learning more dynamic and interactive, favoring the construction of knowledge in a more autonomous and collaborative way. However, teacher training is an essential factor for these tools to be used effectively and meaningfully. Without adequate training, there is a risk that ICTs will be used only as a support for traditional methodologies, without fully exploiting their potential (Rodrigues, 2017).

The COVID-19 pandemic has highlighted the importance of digital technologies for the continuity of education, imposing an emergency challenge for education. In this context, teachers and institutions had to adapt quickly to remote teaching, often without adequate preparation, which reinforced the need for investment in continuing education and technological infrastructure. Thus, the post-pandemic scenario points to the consolidation of hybrid teaching and the use of technologies as fundamental tools for contemporary education (Junior; Monteiro, 2020).

Given this panorama, this study aims to analyze the impact of the integration of digital technologies in education, highlighting its benefits, challenges and the need for teacher training. It seeks to understand how ICTs can be applied efficiently in the teaching and learning process, promoting a more inclusive education aligned with the demands of today's society. For this, a literature review on the subject will be carried out, considering recent research that addresses this theme and its implications for pedagogical practice.

METHODOLOGY

The present research adopts a qualitative approach, based on the literature review, with the objective of analyzing the insertion of Digital Information and Communication Technologies (ICTs) in education and its implications for teacher training. Literature review is an essential method to understand the state of the art of a given topic and identify gaps and challenges in the area of study (Gil, 2008).

For this, academic articles, books and institutional reports that discuss the relationship between education and technology were analyzed. The selection of sources considered publications from the last ten years, focusing on the transformations that occurred in the post-pandemic period, when remote and hybrid teaching began to be widely adopted. According to Lakatos and Marconi (2010), bibliographic research allows the theoretical deepening of a phenomenon and helps in the construction of a grounded argumentation.

The analysis of the data obtained in the literature review followed the content analysis method proposed by Bardin (2011), which enables the systematic interpretation of the texts, allowing the identification of patterns, trends and contributions to the investigated theme. Thus, the research seeks to contribute to the debate on the impact of ICTs on education, highlighting its benefits, challenges and future possibilities.

RESULTS AND DISCUSSIONS

With the advent of technologies, significant transformations have occurred in the organizational scope of society, such as information and access issues. Where such contributions were the result of continuous advances over the years, and which today, adapts a new lifestyle, providing different social practices in this means of communication (Junior; Monteiro, 2020).

> In view of this, the popularization of Digital Information and Communication Technologies (ICTs) is presented, on this platform, there are different software and digital media, which contribute to an exploratory process in the digital and, above all, educational world. Mediating digital technologies, the teaching and learning process brings to its context, the technological transformations and their importance for the adequacy of a new education system, which allows to intensify the informational, educational and communicative process of individuals in contemporary times (Junior; Monteiro, 2020, p. 145).

In view of the reality and emergency measures, there had to be a slowdown in Brazilian education, however, the process started to be taught virtually, emphasizing that it was essential to list strategies that could respond and meet the basic needs of those involved (teachers, students and families). It is based on the fact that at that chaotic moment, at the height of isolation, the stoppage occurred within all education systems in Brazil and in the world, where social distancing was the main emergency action to control the spread of the Virus (Junior; Monteiro, 2020).

According to Junior and Monteiro (2020), the Ministry of Education (MEC) responded to the request made by the Brazilian Association of Higher Education Maintainers (ABMES),

to adhere to distance learning to safely proceed during the process decreed by the World Health Organization (WHO) of Public Calamity, the pandemic.

Educational institutions and teachers responded to the MEC's guidance by temporarily closing their facilities and, at the same time, began to explore a wide range of new opportunities to employ available Information and Communication Technology (ICT) strategies. This initiative aims to improve the teaching and learning process, providing access to knowledge and learning opportunities for a large number of students, through media resources available on the internet (Junior; Monteiro, 2020).

There was a need to intensify the use of technologies, to develop an action, not only emergency, but also necessary, in order to continue teaching and learning in the world. In view of the situation, Ordinance No. 343 published in the Official Gazette of the Union, on March 17, 2020, provides for the amendment regarding the replacement of face-to-face classes with classes in digital media for the duration of the pandemic situation of calamity (Brasil, 2020).

At that time, the measures were valid for thirty days or for the duration of the pandemic. However, with the composition of the new scenario, the implementation of digital technologies fostered the construction of a new system, becoming a contemporary modality that integrates education (Santos; Silva; Belmonte, 2021).

It is noteworthy that, in view of the new technologies used to teach online classes, the right to access education is the foundation. In view of the student's participation and, mainly, the involvement of both (teacher and student) in this learning process, in addition to contributing significantly to the development of a structure that encompasses the administration of technologies (Santos; Silva; Belmonte, 2021).

Returning to the consequences of the covid-19 pandemic, it was a catastrophic premise that identified the need for an analysis of a new context, imposed on this performance of teachers, where teaching was only possible due to the use of technologies. Faced with a critical situation that places at the center the importance of new digital tools as a mediator of teaching and learning, contributing to the continuity of the process through the use of virtual environments as a pedagogical resource (Santos; Silva; Belmonte, 2021).

Such insertion (technologies) was necessary to strengthen and build a new pedagogical proposal, in the face of the organization of a new educational model. Presenting an extensive possibility of educational software options, seen as resources and tools that served as a basis for innovating this new pedagogical practice (Santos; Silva; Belmonte, 2021).

Santos (2018), highlights the main technological tools used to mediate the teaching and learning process in this pandemic period, which are: Google Classroom; Google Classroom; Blogger; Google Drive; Google Meet; Google E-books; Youtube Edu; Whatsapp; Telegram; Among others.

Santos (2018), brings in its conception the importance of the videos that are available on the Yotube platform and that can be organized into the categories: favorites; watch later.

With these new features, teachers can choose the most appropriate videos for the learning objectives of each class and leave them organized in their account. Evaluating the different forms of interaction between those involved and their resources, the platform can be idealized as a very diversified personal learning environment, presenting a diversity of topics from different areas of human knowledge (Pasini; Oak; Almeida, 2020).

At first, the teaching and learning process in times of pandemic (Covid-19), had to undergo a new adaptation that integrates the emergency remote teaching modality. However, after the vaccine and with a new reformulation, the implementation of hybrid teaching has become present, in the face of face-to-face and online classes (Pasini; Oak; Almeida, 2020).

The interaction that occurs between different cultures, as well as the variations present within the same culture, contributes to the observation of hybridization in education. In the post-pandemic scenario, education will face a process of "estrangement" as it adapts to the coexistence of face-to-face teaching and distance learning (EAD). It is important to note that this return will be gradual, with students progressively returning to classrooms. This implies the continuity of the use of technologies (Pasini; Oak; Almeida, 2020).

Such adaptation was essential to continue with education and thus fulfill the purpose of proceeding with the school calendar, continuing the teaching and learning process. In order to soften the expressions of this new reality and thus not aggravate the crisis that is taking place, which at first, would only be a public calamity (Rondini; Peter; Duarte, 2020).

The process is part of the new educational model of distance learning, in which classes are taught virtually. As summarized by the Ministry of Education, distance learning can be characterized. The educational modality in which students and teachers are not physically present or at the same time, with the use of information and communication means and technologies being essential, is regulated by specific legislation and can be applied in both basic and higher education, as established by the MEC in 2018 (Rondini; Peter; Duarte, 2020).

In view of the practice of the new teaching, not all schools presented structures and supports to implement the use of technologies in the process. Considering the system as a whole, which in this case is composed of the school, teachers, students and family, everyone had to adapt slightly to this new organization surrounded by challenges. It is emphasized that the difficulties are exposed in this process that includes adaptation and, mainly, the absence of resources. Such conflicts are part of the school routine, in which there are divergences of conceptions and social inequalities (Rondini; Peter; Duarte, 2020).

The challenges that Brazilian education faces in the context of the crisis are not limited only to issues related to syllabus, evaluation criteria and teaching methodologies. These challenges also encompass social, family, and economic factors that affect students (Rondini; Peter; Duarte, 2020).

The teachers' reports, regardless of variables such as the subject taught, teaching experience, previous use of technologies before the pandemic, and the type of school (public or private), highlight the extreme importance of face-to-face teaching, socialization, and interaction that occur in the classroom. These interactions occur both between teachers and students and between the students themselves (Rondini; Peter; Duarte, 2020).

Although resources and technologies have played a mediating role in learning and have become more present in schools, the interpersonal relationships provided by face-to-face teaching are now considered an essential factor that facilitates and enriches the teaching-learning process. The teachers express the lack of these relationships, as evidenced in their statements in the results (Rondini; Peter; Duarte, 2020).

> A new reformulation of the teaching and learning process in Brazil can be seen, where the removal of teachers and students from the classrooms occurred only physically. Adapting according to the new configuration, associated with technology, becoming the main tool to rebuild a new pedagogical methodology (Marcom; Valle, 2020, p. 232).

In this sense, several changes occurred, reconstructing a process by new contours and adaptations, through the development of methodologies, languages, habits, behaviors, etc. Demanding from schools, teachers, students and families, a disciplined action that allows in this access a breadth around the organization and absorption of knowledge (Marcom; Valle, 2020).

Students and teachers can feel disconnected in virtual teaching environments. To reverse this situation, it is necessary to adopt new forms of communication that represent and identify them effectively for all involved. These new forms of communication must be able to harmonize pedagogical proposals, virtually reintegrate their participants, and

establish an environment of interaction, harmony, and cohesion among all members of a given course (Marcom; Valle, 2020).

The teaching and learning process in times of pandemic is weakened, especially in the public system. In other words, before social isolation, there was a difficulty for technological resources to reach schools; in the current situation (pandemic), students face the challenge of not having enough resources to follow virtual classes and carry out activities online (Marcom; Valle, 2020).

The main meaning of education does not change by the outline of the current reality. In this sense, the learning of students still continues to be the focus of classes, where the teacher has a fundamental role in the development of this process. Although there are challenges, the educator plays a role in ample possibilities to conduct the appropriation of knowledge and the strengthening of actions and proposals, strengthening the bonds between family and school, key elements for the success of remote teaching (Marcom; Valle, 2020).

The challenges that underpin the teaching and learning process in this pandemic context are precisely the adaptation of a new educational system (distance) and the multiple issues that accompany it, referring to difficulties and challenges. Education should never be seen as an act of benevolence, where someone who has knowledge grants it to those who don't. Rather, it is a challenge that arises for both the educator and the learner. This challenge is represented by the reality itself, which is composed of problem situations, concerns, anxieties and aspirations of the group. These elements form the fundamental basis of the educational process (Oliveira, 2006).

It is important for the teacher to understand a reality and thus act in an articulated way in this context of school education, where individuals should be seen as the center of educational action, where the contents as consequences of this process (Oliveira, 2006).

In this way, challenges and difficulties have always been present in the process that encompasses teaching and learning, related to education. Because, since the beginning of the covid-19 pandemic, the problems have fostered this process and have expanded and extended a system that was already considered complex before (Oliveira, 2020).

According to Bergmann (2020), the impacts of the new reality (covid-19 pandemic) have intensified issues in the scope of: inequalities; educational exclusion; school dropout; difficulties in accessing digital technologies; learning difficulties; difficulties in adapting to distance learning; lack of investment by the State; among others.

The implementation of the new distance learning brought difficulties that guide the terms of support, handling, structure and access. Corroborating the new educational

organization, which encompasses the teacher's performance as a worker and the student's difficulties, as a student. Such factors are associated with the fomentation of wear and tear that plagues education, which needs to overcome the challenges and difficulties to remain firm in the face of the process (Bergmann, 2020).

All these obstacles are premises of interference in the teaching and learning process, which in this case, need greater attention, especially in search of a realistic analysis of the new challenging context in which everyone is inserted. The change in teaching has precisely affected the routine of society, requiring adaptations in its daily life, in view of this, there is the challenge in seeking quality in remote teaching and success in learning (Bergmann, 2020).

It is noteworthy that during the bibliographic research, it was possible to identify some premises that follow the challenges of teachers and the difficulties of students about teaching and learning. Among these, the following stand out as challenges for teachers: serving students in situations of social vulnerability; lack of qualification to perform the performance in the configuration of the new education; lack of knowledge to use digital technologies; work overload, added to daily activities; among others (Bergmann, 2020).

In addition to these challenges, it is important to consider the emotional situation of teachers, who may be dealing with emotional impacts when facing the pandemic. Many of them may have family members who have been affected by COVID-19, and even those who have not had losses in the family may be experiencing a state of anxiety and fear in the face of the constant threat of contagion by this highly transmissible virus on a global scale (Andrade et al., 2021).

In addition, the teacher has always had an overloaded routine, and with the pandemic, remote teaching classes are taught to large classes, that is, he had to manage various emotions and internal conflicts, added to the impacts of the pandemic and the obligations attributed to his practice of acting. The main difficulties of the students were identified: lack of digital equipment to attend classes; precarious access to the internet; difficulties in following classes on the platforms; intensification of learning difficulties; among others (Andrade et al., 2021).

Difficulties are sometimes consequences of social inequalities, which plague the organization of a society. Where, a minority successfully exercise access to education, enjoying all the perks of the distance learning configuration, which occurs, for example, with students in the private system. Most parents can afford a quality education for their children (Andrade et al., 2021).

However, most people are on the margins of the guarantee of rights (in a situation of social vulnerability) and access to educational policies. It should be remembered that the rights to education make up the process that encompasses equity, justice, and inclusion (Andrade et al., 2021).

There are several challenges that can make it difficult for teachers to teach using technological resources. Many teachers have not received adequate training regarding the use of technology in the classroom. They may feel uncomfortable or insecure when utilizing new tools and resources. The difficulty of teachers in teaching using technological resources is related to several challenges, and one of the main ones is the lack of adequate training and qualification (Cavallo et al., 2016).

Many educators were not prepared to integrate technology into their pedagogical practice during their initial or continuing education. This leads to a sense of discomfort and insecurity when dealing with new technological tools and resources in the classroom. Analysis of this challenge reveals the importance of investing in professional development programs that empower teachers to effectively use technology. In addition, it is crucial to provide ongoing support so that educators feel confident and competent when using technological resources in teaching (Cavallo et al., 2016).

Other factors contributing to this difficulty include inadequate school infrastructure, resistance to change by teachers, lack of time due to heavy workloads, and the complexity of some technologies. Overcoming these challenges requires a concerted effort by educational institutions, policymakers, and teachers themselves (Cavallo et al., 2016).

To improve the integration of technology in education, it is essential to address teacher training and capacity building, provide access to the right infrastructure, and create a culture that supports educational innovation. Overcoming these challenges can lead to more effective education and prepare students for an ever-evolving digital world (Cavallo et al., 2016).

The availability of technological resources, such as devices and internet access, may be limited in some schools, which makes it difficult to integrate technology into teaching. Teachers often have heavy workloads and strict schedules. Finding the time to explore and implement new technologies can be challenging (Carvalho et al., 2021).

The analysis highlights several challenges that make it difficult for teachers to integrate technological resources into teaching. One of these challenges is the limited availability of technological resources, such as devices and internet access, in some schools. The lack of adequate technological infrastructure can hinder or even make it

impossible to effectively adopt technology in the classroom, hindering students' access to these learning tools (Carvalho et al., 2021).

> Another significant challenge is the heavy workload and strict schedules of teachers. Time is a limited resource, and many educators already face substantial demands related to lesson planning, student assessment, meetings, and other teaching-related activities. Finding additional time to explore, learn, and implement new technologies can be a difficult and exhausting task (Carvalho et al., 2021, p. 101).

These challenges are important to consider when addressing the integration of technology in education. To overcome them, it is critical to invest in improving technological infrastructure in schools, offer adequate training and support to teachers, and consider ways to reduce educators' workloads, allowing them to have the time and capacity needed to effectively explore and adopt technologies in teaching (Carvalho et al., 2021).

Resistance to change is common in many sectors, and education is no exception. Some teachers may be reluctant to abandon traditional teaching methods. Some technologies can be complex and difficult to learn. The learning curve to master certain tools can be steep (Carvalho et al., 2021).

The analysis highlights the presence of resistance to change as a significant challenge in integrating technological resources into education. This resistance is observed in many sectors, including education, and can be a barrier to the adoption of new teaching practices (Carvalho et al., 2021).

Teachers, as education professionals, often have traditional teaching methods that they are familiar with and comfortable with. Switching to more technology-based approaches may seem challenging and threatening to some. They may fear that technology will replace their roles or that their mastery of the subject will be diminished by the presence of technology (Carvalho et al., 2021).

Additionally, the complexity of some technologies and the steep learning curve to master them can be additional obstacles. Lack of prior knowledge or experience with specific technological tools can result in initial frustration and difficulties (Carvalho et al., 2021).

To overcome this resistance to change, it is important to provide adequate training and support to teachers. They need opportunities to gain confidence in the use of technologies and understand how these tools can complement, rather than replace, their traditional teaching methods. Additionally, creating a supportive environment and a culture of innovation in the school can help encourage the adoption of technology more effectively (Carvalho et al., 2021).

The use of technology can also raise security and privacy concerns, both on the part of teachers and parents and guardians. Students may have different levels of access to devices and connectivity, which can make it difficult for teachers to ensure an equitable educational experience (Martins; Almeida, 2020).

The analysis underscores the importance of considering security and privacy issues related to the use of technology in education. These concerns do not only affect teachers, but also parents and guardians, as well as the students themselves (Martins; Almeida, 2020).

The security of students' personal data is a key concern. Teachers and educational institutions need to ensure that student information is handled securely and is not compromised by potential security breaches. In addition, students' privacy must be respected when using technologies that can collect personal data (Martins; Almeida, 2020).

The lack of equitable access to devices and connectivity is another challenge. Students from different socioeconomic backgrounds may have varied access to devices, internet access, and technological resources. This can create disparities in access to educational opportunities, affecting equity in education (Martins; Almeida, 2020).

These security and privacy concerns, as well as disparities in technological access, require schools to implement robust data security policies and practices. In addition, it is important for teachers to be aware of their students' needs and limitations regarding technology and to work to ensure that everyone has the opportunity to fully participate in learning activities, regardless of their resources (Martins; Almeida, 2020).

The availability of quality digital content and resources can be limited, which can make it difficult to create interesting and effective lessons. Effective implementation of technology often requires additional time for planning and creating digital resources, which can further burden teachers (Mendes; Santos, 2020).

The analysis highlights the importance of the availability of quality digital content and resources in the effective integration of technology in education. Teachers may encounter challenges in finding digital content that is appropriate for their classes and meets learning objectives (Mendes; Santos, 2020).

Additionally, creating custom digital resources requires additional time and effort. This can place a significant burden on teachers, who are already facing intense workloads. The planning, development, and implementation of technology-based teaching materials require an investment of time that can be difficult to manage, especially when teachers need to fulfill other professional and administrative commitments (Mendes; Santos, 2020).

Therefore, to overcome these challenges, it is important for educational institutions to provide adequate support to teachers, such as access to high-quality digital resources and training for the creation of digital materials. This can ease the workload of teachers and allow them to focus on providing rich and engaging learning experiences for students (Mendes; Santos, 2020).

Overcoming these challenges requires investment in training, adequate infrastructure, ongoing support, and a cultural shift that values the effective integration of technology into teaching. It is important to recognize that technology can be a valuable tool for improving learning, but it is necessary to address these obstacles in order to use it effectively (Mendes; Santos, 2020).

The use of technology in the classroom can be advantageous for teachers for several reasons. Technology offers access to a wide range of educational resources, such as videos, simulations, applications, e-books, and interactive websites, which can enrich the content of classes and make them more engaging (Mendes; Santos, 2020).

> Technology allows teachers to tailor teaching to meet the individual needs of students. Educational platforms and apps often offer the ability to personalize learning by providing activities and content tailored to each student. Presentation tools, such as slide projections, interactive whiteboards, and content creation software, allow teachers to present information in a visually appealing and easier-to-understand way (Mendes; Santos, 2020, p. 76).

Technology can make lessons more interactive and engaging. Educational games, real-time voting, online forums, and other tools encourage student participation and keep students interested. Learning platforms and apps often include assessment features that allow teachers to effectively assess student progress and provide immediate feedback (Mendes; Santos, 2020).

Technology allows teachers to access up-to-date information and data quickly, staying up-to-date in their areas of expertise. Teaching students how to use technology effectively is an essential skill for the 21st century. Teachers who integrate technology into their classes are preparing students for the digital world and for future career opportunities (Mendes; Santos, 2020).

Technology offers the ability to teach in a variety of formats, both in-person and remotely, which is especially useful in situations such as the COVID-19 pandemic, where flexibility in teaching is essential. Organization and assignment management tools can help teachers keep records, create schedules, and track student progress (Mendes; Santos, 2020).

Once teachers are familiar with using technology, many administrative tasks can be automated, saving time and allowing them to focus more on teaching and supporting students. However, it is important to note that the effective use of technology in the classroom requires proper training and planning. Teachers must be supported in the development of their technological skills and in the creation of pedagogical strategies that integrate technology effectively (Mendes; Santos, 2020).

Teachers need access to proper training and professional development to learn how to effectively use technological tools. This includes the necessary technical knowledge and understanding of technology-related pedagogical best practices. Teachers should plan how and when to use technology in their lessons. This involves creating lesson plans that integrate technology effectively and selecting the appropriate tools to meet teaching objectives (Silva, 2020).

It is critical for teachers to have clear educational goals when incorporating technology. They should know how technology will help achieve specific learning goals. The educational environment is constantly evolving. Teachers who are successful with technology are flexible and adaptable, ready to change their strategies as their students' needs and available tools change (Silva, 2020).

Schools and educational institutions should provide technical support and resources for teachers who use technology. This includes access to devices and software, as well as technical assistance when needed. Student engagement is essential. Teachers should create engaging and interactive activities that encourage students to actively participate in the learning process (Silva, 2020).

Teachers should continually evaluate the impact of technology on their students and make adjustments as needed. Analyzing student progress through technological tools and gathering student feedback are part of this process. Teachers should ensure that all students have equal access to the technologies used in class. This involves addressing issues of equity and accessibility (Silva, 2020).

Technology offers the opportunity to create innovative and creative teaching approaches. Successful teachers are willing to explore new ways to engage students and make learning more interesting. Collaboration with other educators and technology experts can be valuable. Sharing experiences and resources with colleagues can enrich teaching practice (Silva, 2020).

CONCLUSION

In view of the analysis carried out, it is evident that Digital Information and Communication Technologies (ICTs) play a fundamental role in the transformation of contemporary education. Its implementation allows the diversification of pedagogical methodologies, making teaching more dynamic, interactive and accessible. However, for this potential to be fully exploited, it is essential to invest in the continuing education of teachers, ensuring that they acquire the necessary skills to integrate technologies into the teaching-learning process effectively (Oliveira; Marinho, 2020).

In addition, the technological infrastructure in educational institutions needs to be improved to enable an equitable adoption of ICTs. The COVID-19 pandemic has accelerated the need for this transformation, highlighting both the opportunities and challenges inherent in the digitalization of education. In this sense, the transition to a hybrid and flexible model must be accompanied by educational policies that ensure access and digital inclusion for all students (Rodrigues, 2017).

Therefore, this study reaffirms the importance of technology in education, but highlights that its positive impact is directly related to the preparation of teachers and the institutional support offered. The continuous evolution of ICTs requires a permanent commitment to pedagogical innovation and to the search for strategies that guarantee quality education, accessible and aligned with the needs of contemporary society (Junior; Monteiro, 2020).

REFERENCES

1. Bardin, L. (2011). Análise de conteúdo. Edições 70.

2. Junior, V. B. C., & Monteiro, J. C. S. (2020). Educação e Covid-19: As tecnologias digitais mediando a aprendizagem em tempos de pandemia. Revista Encantar - Educação, Cultura e Sociedade - Bom Jesus da Lapa, 2(14), 01-15.

3. Lakatos, E. M., & Marconi, M. de A. (2010). Fundamentos de metodologia científica (7ª ed.). Atlas.

4. Mendes, E. N., & Santos, L. (2020). Aprender a aprender novas maneiras de ensinar. RECITE – Revista Carioca de Ciência, Tecnologia e Educação, 5(especial).

5. Oliveira, I. A. de. (2006). Filosofia da Educação: reflexões e debates. Vozes.

6. Oliveira, N. M. de, & Marinho, S. P. P. (2020). Tecnologias digitais na Educação Infantil: representações sociais de professoras. Revista Ibero-Americana de Estudos em Educação, 15(4), 2094–2114.

7. Pasini, C. G. D., Carvalho, E., & Almeida, L. H. C. (2020). A Educação Híbrida Em Tempos De Pandemia: Algumas Considerações. Brasil.

8. Rondini, C. A., Pedro, K. M., & Duarte, M. S. (2020). Pandemia da covid-19 e o ensino remoto emergencial: mudanças na prática pedagógica. Interfaces Científicas, 10(1), 41-57.1

9. Santos, E. M., & Lastória, L. A. C. N. (2019). Tecnologias digitais e educação: impactos e desafios para uma nova configuração de subjetividade. Revista Observatório, 5(5), 962–982.

10. Santos, M., Silva, M. E., & Belmonte, B. R. (2021). COVID-19: ensino remoto emergencial e saúde mental de docentes universitários. Olinda, PE, Brasil.

11. Silva, R. N. K. (2020). O perfil necessário ao professor frente à influência da cibercultura no contexto educacional. Revista Docência e Cibercultura, 4(2), 103-118.