The role of school management in technological practices as a tool for futuristic teaching

O papel da gestão escolar nas práticas tecnológicas como subsídio ao ensino futurista

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Abstract

The use of technology in teaching has grown significantly in recent years. Digital media and educational software are commonly used to complement traditional teaching methods. Online learning platforms such as Moodle and Blackboard are also widely used to provide students

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with access to course materials, assignments and other resources. Additionally, virtual and augmented reality technologies are being used to create immersive learning experiences across subjects such as science, history and geography. Technology has become an essential tool in teaching, providing numerous advantages, from greater engagement, access to resources and personalized learning. However, there are also challenges and limitations that need to be addressed, such as infrastructure and resource limitations, teacher training and possible distractions. As such, striking a balance between the use of technology and traditional teaching methods is essential to provide students with a complete and effective learning experience. The use of digital devices such as laptops, tablets and smartphones has become increasingly popular in the classroom. These devices can be used to access educational resources such as e-books and online libraries, allowing students to learn at their own pace and style. Additionally, educational software and apps can be used to provide interactive learning experiences that cater to different learning styles. In addition, multimedia resources such as videos, images and audio recordings can also be used to engage students and enhance their learning experiences. From this perspective, it is necessary for school management to encourage teachers to update themselves in handling digital technologies in the classroom.

**Keywords:** Digital Practices. Teaching. Learning.

**Resumo**

O uso da tecnologia no ensino tem crescido significativamente nos últimos anos. A mídia digital e o software educacional são comumente usados para complementar os métodos tradicionais de ensino. Plataformas de aprendizado online, como Moodle e Blackboard, também são amplamente utilizadas para fornecer aos alunos acesso a materiais do curso, tarefas e outros recursos. Além disso, as tecnologias de realidade virtual e aumentada estão sendo usadas para criar experiências de aprendizado imersivas em várias disciplinas, tais como: ciências, história e geografia. A tecnologia tornou-se uma ferramenta essencial no ensino, proporcionando inúmeras vantagens, desde o maior envolvimento, acesso a recursos e aprendizagem personalizada. No entanto, também existem desafios e limitações que precisam ser enfrentados, como infraestrutura e limitações de recursos, treinamento de professores e possíveis distrações. Como tal, é essencial encontrar um equilíbrio entre o uso da tecnologia e os métodos tradicionais de ensino para proporcionar aos alunos uma experiência de aprendizagem completa e eficaz. O uso de dispositivos digitais como laptops, tablets e smartphones tem tornaram-se cada vez mais populares em sala de aula. Esses dispositivos podem ser usados para acessar recursos educacionais, como e-books e bibliotecas.
on-line, permitting that the students learn at their own pace and style. Moreover, softwares and educational applications can be used to provide interactive learning experiences that cater to different learning styles. Additionally, multimedia resources such as videos, images and audio recordings can also be used to engage the students and enhance their learning experience. From this perspective, it is necessary for the school management to incentivize the teachers to update themselves for the handling of digital technologies in the classroom.

**Palavras-chave:** Práticas Digitais. Ensino. Aprendizagem.

**Introduction**

In times of the digital age, technology has become an integral part of our lives, and education is no exception. Technological practices have been increasingly used in teaching to enhance learning and provide a more engaging and interactive classroom experience. This essay will explore the use of technology in teaching and its advantages, as well as the challenges and limitations that accompany it (ALENCAR et al., 2014).

The use of technology in teaching has grown significantly in recent years. Digital media and educational software are commonly used to complement traditional teaching methods. Online learning platforms such as Moodle and Blackboard are also widely used to provide students with access to course materials, assignments and other resources. Furthermore, virtual and augmented reality technologies are being used to create immersive learning experiences in various subjects such as science, history and geography (ALEIXA; BASTOS, 2019).

The use of technology in teaching has several advantages. First, it increases engagement and interaction between students and the teacher. For example, online discussion forums and collaborative tools allow students to share ideas and collaborate on projects, while interactive whiteboards and multimedia presentations make lessons more engaging and interactive (ALEIXA; BASTOS, 2019).

Second, technology increases access to educational resources and materials. With the internet, students can access a wide range of educational resources such as e-books, videos and online libraries. Finally, technology facilitates personalized and differentiated learning. Adaptive learning technologies and personalized learning platforms can adjust to each
student's individual needs and learning styles, providing a more personalized and effective learning experience (MACEDO, 2020).

Despite the numerous advantages of using technology in teaching, there are also challenges and limitations that come with it. First, technology infrastructure and resource constraints can make it difficult to effectively implement technology in the classroom. Not all schools have access to reliable internet connections or the necessary hardware and software to support technology use (MACEDO, 2020).

Second, the need for adequate teacher training and professional development is crucial to ensuring that teachers are equipped with the necessary skills to effectively integrate technology into their teaching. Finally, potential distractions and misuse of technology in the classroom can be a significant challenge. Students may be tempted to use technology for non-educational purposes, leading to distractions and lack of focus (MACEDO, 2020).

Technology has become an essential tool in teaching, providing numerous advantages such as greater engagement, access to resources and personalized learning. However, there are also challenges and constraints that need to be addressed, such as infrastructure and resource constraints, teacher training and potential distractions. As such, it is essential to find a balance between the use of technology and traditional teaching methods to provide students with a complete and effective learning experience (KLEINA, 2018).

Theoretical Reference

2.1 The Emergence of the Internet and How it Became Important in the School Scope

The internet emerged in the Cold War and its creation was for military purposes, to ensure communications in case of enemy attacks, from that invention it only evolved and began to expand universally and with unlimited access. According to Agência Brasil, three out of four Brazilians access the internet, which is equivalent to 134 million people, 74% of Brazilians accessed the internet at least once in the last three months. Another 26% remain disconnected, data that demonstrate the size of internet use by the population (KLEINA, 2018).

The technological age facilitated social development, brought several positive points such as: instantaneous long-distance communications, electronic systems in companies, digital platforms that enable long-distance studies, ease in the search for information, greater
diversity in personal and professional relationships, virtual entertainment, digital market, among others (NOGUEIRA, 2020).

Currently the internet has been a great generator of jobs, through it it is possible to promote products, purchases and sales, increases in savings, profits, and the famous digital influencers, who through their visibility promote brand advertising, create humorous content, among several interactive contents (NOGUEIRA, 2020).

The ease of the virtual age is attractive regardless of age group, since childhood the interest in being an Internet user is already shown, and in learning to navigate in the virtual world, it is also a great improvement in education, an agility for face-to-face learning as well as long distance, the EAD. Another benefit of the internet is the interpersonal relationship that became instantly possible even in different places, with social networks being widely used, the most common: Instagram, Facebook, WhatsApp, which have become fundamental means of communication.

A society that is constantly evolving needs the internet for an agile and lasting development, which expands the benefits universally to build a better and egalitarian world. The internet is a very valuable tool, being able to help in everyday activities, quickly and agilely, but in the same way that you can see positive points, it doesn't take much effort to find negative points, Antônio Santos understands that you can also see points that can also bring impasses to privacy and legal interests, both material and moral.

The beginning of the Internet took place a few years ago, although it started definitively in 1994, but since 1976 the Brazilian Telecommunications Company (EMBRATEL) was already testing its creation, in addition to having created two network models, a private one and a public. In the same decade, academic projects took place, with the aim of leveraging the evolution of the internet, such as the Southern Teleprocessing Network (RST), as well as projects proposed by the Pontifical Catholic University of Rio de Janeiro (PUC-RJ), with the same purposes of advancement (KLEINA, 2018).

In 1988, the first private database was created, without any connection with academic research and independently, this was considered the first private access point in Brazil.

But in 1989, Kleina (2018) states that the National Research Network (RNP) was founded, where the first logical access structure for the entire Brazilian territory was created, with the “.br” domain emerging for the creation of websites in Brazil, in addition to Brazilian references on the network. Even if the computer was not a reality for many, as access was difficult for middle-class people, the internet was already created, it was enough for the
necessary technologies to reach everyone's access. In the following years, other domains were created, such as government sites, official creation and copyright sites.

The wide evolution and the great milestone of the internet occurred in 1994, when the Brazilian Telecommunications Company (EMBRATEL) launched the first commercial internet, but this use would take place privately and by exclusively chosen businesses, which generated an internet monopoly in Brazil, but soon after, this monopoly ended, so several companies provided access so that there was a free market for the provision of the internet, (KLEINA, 2018).

In 1994, few people had the financial capacity to access the internet, as they depended on computers, as it was a new and unusual creation, some managed to have access to these technologies. It was from this evolution that e-mail sites, news, in addition to creating access to online shopping, online radio, among others, starting in 1996 (KLEINA, 2018).

In less than 40 years, the internet went from a search prototype that connected many websites to a global communications system that reached every country in the world, Lima says that the growth rate has been extraordinary (2018, p.18).

2.2 The Growth of Technological Practices in the Classroom

Almeida (2003) states that several technologies bring access to the individual production of users, such as the production of: CDs, photos, digital videos, slides and simple multimedia presentations, among others that can become message senders, such as the internet.

The new technologies represent unusual technical conditions that modify the character of these messages, where the biggest challenges of these messages are to enable interactivity. Multimedia is considered as a promising configuration related to possibilities of interaction, being defined in any combination of text, graphic arts, sounds, animations and videos transmitted by the computer. Therefore, multimedia also represents the gathering of different media in an application (ALMEIDA, 2003).

The application can connect via the internet with link openings, passages to other applications, that is, becoming hypermedia, to develop a hypertext designating a certain narrative and interconnecting to a high degree, due to the internet encompassing other media, enabling interaction and freedom to the search for information (ALMEIDA, 2003).
Therefore, internet communication takes place in a different way than it does on television, that is, communication is directed according to the choice of browser, enabling different structures with narratives that allow the creation of virtual environments, sharing experiences with stories. created with network users.

Users, in turn, create characters acting and relating to the virtual world, enabling connections between people with other countries, states and municipalities, in addition to interconnecting people with different accesses and channels of products, studies and content, also interconnecting space and time, allowing possibilities for connections and discoveries according to the user's needs (NOGUEIRA, 2020).

Therefore, a multimedia product and an internet page is not considered the same thing as creating a TV or radio program, due to the terms of transmission of information that it is necessary to create to communicate in a way that users can participate, not only receiving information, but also feeding into the production of these programs. The language of audiovisual media is produced directly with the technical and aesthetic attributes, the attributes generate different effects in society, influencing the economy, culture, among others. (NOGUEIRA, 2020).

Alencar (2014, p. 5) defines the internet in the audiovisual medium as:

The internet is configured as a great space for the audiovisual, which has been reflected in the possibility of developing other languages and formats and consolidation of the video culture. The main fact is that the network broke the exhibition monopoly and gave rise to a range of productions that previously could not reach a larger audience. Digital technology has reduced the cost of equipment, which has led to a greater number of people starting to produce. With that, the audiovisual became plural and it is now possible to offer other visions of the world and perspectives, unlinked from the traditional production process of television and cinema. The opening of another market benefits the public and content producers, among them Social Communication professionals.

That is why the internet is considered one of the most important means of audiovisual production, connecting and interconnecting new technologies, currently being essential for the new generation, as it offers numerous resources that can be explored, giving access to a world of amounts of information existing in the world. interior of audiovisual content. The internet allows interaction, measurable responses, subtitles, personalization and a high level of segmentation that works as a significant form of communication (ALENCAR, 2014).

The visible annual growth of new technologies and the emergence and expansion of tools related to social media and the virtualization of consumption led individuals to start using techniques available on the internet to then create and strengthen bonds.

Thus, companies needed to change their strategies to expand their target and type of marketing to be aimed at the internet public, reformulating a model to advertise with digital
marketing, since the internet has been modifying access to information, in addition to bringing communication to different audiences, making it a tool of great importance (OLIVEIRA, 2016).

The use of digital devices such as laptops, tablets and smartphones has become increasingly popular in the classroom. These devices can be used to access educational resources such as e-books and online libraries, allowing students to learn at their own pace and style. Additionally, educational software and apps can be used to provide interactive learning experiences that cater to different learning styles. Furthermore, multimedia resources such as videos, images and audio recordings can also be used to engage students and enhance their learning experiences (OLIVEIRA, 2016).

The incorporation of technological practices in the classroom has several advantages. First, it increases student engagement and motivation, as students are more likely to be interested in learning when they are exposed to interactive and engaging methods. Second, it facilitates personalized and differentiated learning, allowing students to learn at their own pace and in their own style. Finally, it promotes collaboration and communication between students and teachers, as digital devices and software can be used to facilitate group work and discussions (KLEINA, 2018).

2.3 The Adequacy of Teachers to Insert Current Tools in Teaching

The mobile internet is a set with portable devices, makes it possible to reach levels of connectivity with mobility previously never experienced, which ends up arousing the interest of academic and business circles. Due to advances in the processing and networking capabilities of mobile devices and the revolutionary achievements made in wireless communication, global interest hypermobile applications is on the rise (OLIVEIRA, 2016).

The use of mobile applications, known as applications as a means of accessing the internet, emerged to meet the needs of new consumers of mobile devices, who are increasingly looking for real-time communication and are also looking for fun and efficiency in their lives.

Applications are paid or free programs (small software) installed on operating systems, such as Android, iOS, Linus, Symbian OS, Blackberry, Windows Phone, Palm OS, among others, which allow access to online and offline content and aim to facilitate and help in the execution of practical day-to-day tasks of the user (NEVES, 2007).

With regard to audiovisual production, the applications constitute important means of pedagogical support, both for the construction and application of knowledge, and to provide
an environment in which the student fulfills cycles of reflection and action, which translates
the interaction between the student and the device itself (MEIRA; ANTUNES, 2003).

Computational subsidies are being used more and more in advertising and marketing
as tools to aid in the development of audiovisual productions and learning in different areas
of knowledge. The use of technologies is highlighted, such as accessible software, equipment
electronics, computers and so on, which motivates students to learn content in an easy, fast
and fun way, as a result of the possibility of accessing the web and mobile devices
(MEDEIROS et al., 2012).

Within this context, the creation of mobile applications aimed at audiovisual
production is relevant, considering that their use can be directed towards what is intended to
be studied individually and/or collaboratively, which, in turn, provides users with new
opportunities to experience teaching-learning experiences that go beyond the traditional
systems used, in a more compact modality, motivating the user to this new reality that intends
to better achieve the objectives (AZEVEDO et al., 2018).

Material and Methods

The present study can be classified, according to Gil (2002) as a descriptive and
qualitative research. Being descriptive when dealing with a study of data collection, analysis
and interpretation of the same, establishing relations between the variables that involve
standardized data collection techniques.

In order to identify indicators related to teaching mediated by technologies,
bibliographical research was carried out in current articles on the subject, providing
opportunities for a discussion that deals with the role of school management in the face of the
intersection of digital technologies in the teaching and learning processes.

Then, a survey was carried out, with the objective of collecting data that portray the
opinion of teachers in relation to teaching and technologies. The questionnaire was carried out
using Google Forms. The target audience was teachers who work in a research group in
education, culminating in 13 respondents.

Results and Discussion

Thirteen teachers participated in the interview, about 69% reported having a
postgraduate degree at the Stricto Sensu level and 30.8% did not, as shown in figure 1.
About their highest academic title, 69.2% of teachers have specialization. 23.1% have a master's degree and 7.7% only have an undergraduate degree, figure 2 reports on.

76.9% of those interviewed have a degree in Human and Social Sciences/Education and 7.7% have a degree in Exact Sciences/Mathematics (Figure 3).

After checking the training area, the teacher was asked if he/she is focused on basic education or higher education. 84.6% reported being teachers in basic education and 15.4% in higher education, as shown in figure 4.
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To verify the time of experience in the classroom, 38.5% of the teachers have more than 20 years in the profession, there was a tie between more than 10 years (23.1%) and between 1 to 5 years (23.1%), followed by 7.7% have no experience, figure 5 shows the data.

When asked how they think education will be in the coming years and decades, 61.6% believe that there will be advances in learning technologies, but inequalities will still be evident. 23.1% believe that little will change, although new technologies will be more used, 15.4% believe that teaching and learning processes will be fully linked with digital technologies (Figure 6).
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Figure 6 – Estimate of what education will be like in the coming years and decades

About the teacher of the future, 50% say that it will be teachers who will have information for digital teaching technologies. 25% think that they will be the same ones that use the same materials, while 25% said that they will be replaced by video classes and robots, as shown in figure 7.

Figure 7 – Teachers of the future

In this way, a scale from 1 to 5 was used to talk about the importance of updating the teacher for the use of digital technologies in the face of technological evolution. Figure 8 explains.
4.1 The Role of Management in Promoting Technology

The study results mitigate the role of technologies in teaching and learning processes. In this sense, it is necessary that teachers, through school management, are immersed in continuing education for the handling of digital technologies. In this perspective, Sá and Endlish (2014) point out the advantages that technologies constitute a link between content and educational practice.

That said, the National Common Curricular Base (BNCC) presents a series of interlocutions between skills and competences necessary for pedagogical practice in Basic Education. In this sense, one of the general competences of Basic Education is to understand and use information and communication technologies in a “critical, meaningful, reflective and ethical way in the various social practices (including school ones) to communicate, access and disseminate information, produce knowledge, solve problems and exercise protagonist and authorship in personal and collective life” (BRASIL, 2018, p. 9).

According to Machado et al. (2021) it is necessary to think of contemporary continuing education with a relationship of “exteriority with the contexts of professional activity and focus on the actions conceived and carried out from the space of the school, considering, therefore, the challenges that present themselves. In this sense, the authors emphasize the need to educate for reality, to educate for the context, which reflects on the effective learning of students.

Other authors point out the need for a new look at Higher Education regarding the insertion of technologies (MARIN et al., 2018; STETTINER et al., 2018; LUZ et al., 2020).
In this sense, it is necessary for Technological Professional Education, Higher Education and Basic Education to articulate new teaching and learning strategies based on digital scenarios. Therefore, in times of digital age, teaching needs to be streamlined, according to the reality of the student (MARIN et al., 2019; MOURA et al., 2019; MARIN et al., 2019b; MORAIS et al., 2019; THIMÓTEO et al., 2022; JUNGER et al., 2023; DE SOUZA; CUNHA; CASTRO; DINARDI, 2023).

Conclusion

The practical technologies in the classroom are defined as a set of technologies and online practices used by people or companies to propagate content, provoking the interaction of their readers, who express their opinions, ideas, experiences and personal perspectives. Its various formats can currently include text, images, audio and video. These spaces, in the form of websites and applications, are the so-called social networks on the Internet. They allow the construction of a persona through a profile or personal page, with interaction through comments and public exposure of each author's social network.

Social networks have become essential tools for communication and information sharing. People use social media to connect with family and friends. Many companies use social networks to disseminate information to their customers and employees. These networks have become so common that it is almost impossible to avoid them. The same applies to networks used by the general public: Brazilians use social media in many different ways.

Thus, it was found that the use of technology in teaching has grown significantly in recent years. Digital media and educational software are commonly used to complement traditional teaching methods. Online learning platforms such as Moodle and Blackboard are also widely used to provide students with access to course materials, assignments and other resources. Additionally, virtual and augmented reality technologies are being used to create immersive learning experiences in various subjects such as science, history and geography.

The use of technology in teaching has several advantages. First, it increases engagement and interaction between students and the teacher. For example, online discussion forums and collaborative tools allow students to share ideas and collaborate on projects, while interactive whiteboards and multimedia presentations make lessons more engaging and interactive.

In conclusion, the growth of technological practices in the classroom has revolutionized modern education, providing students with interactive and engaging learning
experiences. However, implementing these practices also presents several challenges, including limited access to technology, resistance to change, and lack of teacher training and support. Despite these challenges, the benefits of incorporating technology practices into the classroom far outweigh the disadvantages, and it is essential that educators embrace the use of technology in their teaching methods to enhance student learning and engagement.
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