

DIGITAL LEARNING TOOLS: A LITERATURE REVIEW APRENDIZAGEM

FERRAMENTAS DIGITAIS DE APRENDIZAGEM: UMA REVISÃO DA LITERATURA

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Abstract: This study presents collaborative learning and the main digital tools used in technology-mediated teaching. This research is a review that brought together articles published in journals in the last five years, in five scientific databases that met the following search term “digital tools” and “Collaborative learning” and technology-mediated teaching. Thus, we selected 22 articles that met the inclusion and exclusion criteria where they were analyzed, thus subsiding the considerations of this research. The result demonstrated a variety of digital tools, highlighting the problem-based learning in digital contexts, wiki, blog, social networks, online communities and digital devices.

Keywords: Digital tools. Collaborative learning. Technology-mediated teaching.

Resumo: Este estudo apresenta a aprendizagem colaborativa e as principais ferramentas digitais utilizadas no ensino mediado pela tecnologia. Esta pesquisa é uma revisão que reuniu artigos publicados em revistas nos últimos cinco anos, em cinco bancos de dados científicos que atenderam ao seguinte termo de pesquisa “ferramentas digitais” e “Aprendizagem colaborativa” e ensino mediado pela tecnologia. Assim, selecionamos 22 artigos que atenderam aos critérios de inclusão e exclusão onde foram analisados, diminuindo assim as considerações desta pesquisa. O resultado demonstrou uma variedade de ferramentas digitais, destacando a aprendizagem baseada em problemas em contextos digitais, wiki, blog, redes sociais, comunidades on-line e dispositivos digitais.

Palavras-chave: Ferramentas digitais. Aprendizagem Colaborativa. Ensino mediado por tecnologia.

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Introduction

Information technologies have become popular in an exponential way, improving experiences in information sharing and knowledge building. In addition, digital learning tools have helped in this improvement through innovative practices of teaching and learning in the cognitive and communicative aspects of learning.

Therefore, the digital learning tools emerged to improve the interactions enabling self-learning, with the mediation of systematically organized didactic resources, presented in different information media used Alone or combined, and conveyed in the worldwide computer network (PEREIRA; ARAÚJO, 2011).

For Brunetta (2014), the modernization needs of the Military Police must be related to construction in a democratic perspective, by means of flexibility in the new educational proposals. The objective of this research is to identify digital tools to be used in the qualification of the Tocantins Military Police officers through the collaborative learning mediated by the technologies.

Therefore, analyze, identify and classify articles related to digital tools that can be implemented in the qualification of public security agents. The central question of this work was: What digital tools can be implemented in the collaborative learning of the Tocantins Military Police?

Materials and methods

Initially, after the pre-determination of the research objectives, the question was formulated and defined as a basic research. As for the objectives, exploratory research, this research involves bibliographic survey and data analysis. Be classified as bibliographic. The research and analysis period of articles related to the theme was from 2015 to 2019. The search terms aimed to find relevant studies related to the article question.

The keywords used the following expressions: "Digital tools" and "Collaborative learning" and technology-mediated teaching. "In this sense, the general objective of this article was to identify articles related to digital tools that can assist in the professional qualification of the military police of the state of Tocantins through collaborative learning.

The research question was: which or which digital tools can help in the professional qualification of the Tocantins military?

In this sense, the bases chosen were as follows: Emerald Insight, Google Scholar, ScienceDirect-Elsevier, IEEE Xplore, ACM-Digital library. Inclusion criteria were: articles published in journals; In the English language; Between 2015 and 2019, of relevance and relationship with the objective of this research.

The number of repeated studies is not included in the sum of included or excluded. Exclusion criteria: Studies that are not related to the research theme; Which deals with collaborative learning in the early years; that have a technical focus; Duplicate studies not related to collaborative learning; Digital tools; Collaborative learning and technology-mediated learning.

After This step, the relevant articles related to the study in question were selected, following the steps: Reading the abstracts and excluding those that did not meet the established criteria. Thus, 22 studies were selected for this article.

Results and Discussions

Problem-Based Learning (PBL) is an innovative model that emerges to assist students in solving problems from a real problem. Therefore, a learning methodology in which the student stops being a mere listener to become responsible for his own learning. (DE SOUZA; DOURADO 2015) report that several researchers from different areas have used PBL in several courses and have presented satisfactory learning outcomes.

The PBL, "promotes a transdisciplinary learning centered on the student, being the teacher a facilitator of the knowledge production process (SOUZA; DOURADO, 2015)". In this way, (BARBER, et al., 2015; BREWER, et al., 2015) present the relationship between problem-

based learning, authentic assessment, and the role of the community in the promotion of learning in digital contexts. It also describes which virtual teams can collaborate with one another using information communication technologies (ICTs).

PBL, authentic assessment and meaningful community are a combination of tools that teachers can offer students as an effective digital pedagogy. These methods provide opportunities for all to produce knowledge through the use of ICTs in various geographic areas (BARBER et al., 2015; BREWER, et al. 2015).

Thus, it is clear the involvement of students and teachers in the sharing of knowledge, using digital tools, through a combination of methods and techniques, aimed at knowledge production.

In this way, students should be empowered through the PBL to choose real-world tasks to demonstrate their knowledge in an online support community built through the sharing of information and knowledge (BARBER et al., 2015). The Wiki has a content-based method, presenting important applications in the educational field in a way, being ideal for group work, including tasks that can be clearly integrated into teaching at any educational level.

Similarly, the blog that works as a journal, with the exception that other users who visit it can comment on what they write, accompanying comments with photos, links and videos (CARNEIRO; BARBOSA, 2018). Presents the wiki as a space for content and a social space (discussion) for learning in a collaborative way. (JIMOYIANNIS; ROUSSINOS, 2017) If properly designed courses can be effectively introduced into teaching to support students to improve their authoring and collaboration skills through critical thinking, interaction, and reflection on diverse subjects.

They describe that contribution evidence from wiki-based ventures depends on how the contributions of individual and collaborative responsibility of the students are intertwined. Wikis have been used in educational contexts in various ways and learning objectives. Wikis are considered the most appropriate tools for long-term entrepreneurship and group activities, where a community space is needed for discussions, ideas and knowledge sharing (JIMOYIANNIS; ROUSSINOS, 2017).

Therefore, sociocultural bases of knowledge-building ventures in interaction with the emergence of online collaborative resources (SKÖLD, 2017). In this context, students who use the wiki as a collaborative learning tool are expected to reach higher cognitive levels through communication, collaboration, and critical thinking within a learning community.

Therefore, developing a culture of knowledge production, learning practices and collaboration of ideas (JIMOYIANNIS; ROUSSINOS, 2017; SKÖLD, 2017).

In the studies by (CALDWELL; HEATON, 2016) they describe how blogs and online communities have improved disciplinary and interdisciplinary teaching, with the development and sharing of ideas. And that these students incorporate digital tools to enhance learning, modeling practice and enabling reflection of learning.

These online communities in the form of blogs provide the necessary tools for social learning and are characterized by a common purpose for sharing and applying ideas. In this sense, combining learning and digital tools can provide further evidence of how online spaces promote change from traditional teaching to practice and that building active knowledge using collaborative technologies, moving away from teacher-led didactics to a flexible approach led by student (CALDWELL; HEATON, 2016).

Learning autonomously and collaboratively, analyzing information in the network and transforming it into knowledge, requires flexibility, and changes in the approaches and characteristics of teaching and learning, in this way, analyze and research which technologies are being used and their influence on learning, sought an understanding of benefits, qualities, and limitations in teaching-learning processes (TOZZI, et al., 2017; CALDWELL; HEATON, 2016).

Therefore, learning through blogs and online communities, they develop an accessible conception of how their personal didactics evolve through sharing knowledge and how the method of transmitting their learning to practice occurs through the virtual and classroom environments (CALDWELL; HEATON, 2016).

Therefore, to reflect on the appropriate use of digital learning tools in a critical way, on pedagogical practices and, if the appropriation of concepts and the sharing of knowledge have

contributed satisfactorily to the dissemination of knowledge.

Social technologies have gained popularity not only in communication, but also in the field of teaching, through various devices, therefore, a mechanism that integrates people with the aim of developing knowledge and providing a more efficient and effective learning.

The use of social networks can improve learning only when users participate in groups and share their knowledge and ideas in view of the interdisciplinary training of participants in study groups or discussions (LEE; LEE, 2018).

Dominic and Hina (2016) describe that digital tools and technologies allow students to assume the autonomy of their learning, establishing the context that inspires them in the search for new ways of learning. Already (CAMPANELLA; IMPEDOVO, 2015, KASINATHAN et al., 2014), argues that society every day uses the social networks in teaching using mobile devices to enhance the learning experience in a collaborative way.

People's connectivity has led them to share ideas and disseminate information, strengthening their possibilities for learning in social networks. Therefore, social networks are innovative tools, being dynamic environments, where occurs, reproduction of knowledge, dissemination of information, and exists in society, motivated by the need for people to share knowledge, information and ideas (LEMONS et al., 2018).

For Awidi et al. (2019) and Chu, et al. (2018) When students use digital collaborative learning tools, they feel involved and satisfied with their interactions, mainly through Facebook. For students, this tool is the best platform for collaborative learning today. Facebook is a digital tool that facilitates informal learning, and provides discussion outside the classroom and motivates student participation, so it should be used wisely and with care, as this means of communication between teachers and students can offer advantages for both (AWIDI et al., 2019; ASTERHAN; ROSENBERG, 2015 and CHU, et al. (2018).

Therefore, a natural tendency of students to integrate social networks into learning practices could be due to cultural, pedagogical and institutional issues.

However, there are concerns (AWIDI et al., 2019; KELES, 2018) regarding the privacy and disclosure of material, in view of the possibility that they seek to do several things at the same time, which can lead to a reduction in academic performance, affecting quality, making irrelevant and inadequate discussions.

However, it is worth taking the time to use Facebook as a collaborative learning tool because this social tool helps the students' experience by facilitating discussion, multimedia content development, resource sharing and support for self-managed learning (AWIDI et al., 2019; ASTERHAN; ROSENBERG, 2015; CHU, et al., 2018; KELES, 2018; SCOTT et al., 2016).

The effectiveness of the learning process can be sustained by encouraging social media attributes, that social technologies can increase potential beyond typical boundaries, and that interactions among members can enhance dialogue among community members learning (CHU, et al., 2018; KELES, 2018; SCOTT et al., 2016).

A new perspective presents itself as an opportunity for the use of social networks in collaborative learning. Therefore, a teaching considered informal, based and guided by the content and process that provides discussion and interaction in a collaborative way.

Online collaboration provides opportunities for learners to learn new innovative strategies and then employ them successfully in their practices and professional assignments (PRESTRIDGE, 2019).

Lee and Lee (2018) explains that social networks, when used as a learning tool, may not sufficiently improve learning performance without the help of other social learning constructs.

That is, learning based on observation and social interaction. Social learning environments provide collaborative, immediate and relevant methods for gaining knowledge and skills related to work, and mobile devices can improve the way communication occurs, thereby enabling mobile and ubiquitous learning through short answers where students, use information to improve and share various subjects instantaneously (FALLOON, 2015; LEE; LEE, 2018; SO, 2018; PRESTRIDGE, 2019; VIEGAS, et al., 2018).

Digital technologies have occupied the educational environments in recent years, as the Internet became popular, either as part of a pedagogical approach or teaching and learning

methodology. In this sense, researchers defend the importance of interactions in online learning environments.

In this way, contemporary literature affirms that online and distance education depends on the interactions of the students. And that these relationships between different types of interactions and learning outcomes. (BORBA, et al. 2018; JOKSIMOVIĆ et al., 2015).

Distance education is seen as a modality that democratizes an opportunity for teaching, even though human beings have taken possession of multiple means of communication, and apprentices begin to use them in “ways for which, in principle, they were not planned “. It is important to use method and techniques in teaching in the face of the changes and challenges that society constantly lives. The perception of people with the media is cyclical in the sense that there is an intersectoral relationship that is developing in the world today (BORBA, et al. 2018).

Therefore, aggregating methodologies to help teams effectively regulate group work and improve planning processes can increase student involvement in learning and collaborative methods, thus self-efficacy would be an important tool since it understands how well their skills can achieve. [NOGUERA, et al., 2018; LIN et al., 2018).

By incorporating digital tools into collaborative learning, it is expected that the sharing of knowledge among students occurs in a way, flow, thoughts, ideas, attitudes, decision-making, form, effective and planned. It is the students themselves who can acquire knowledge by taking advantage of the interactive possibilities of the media. The impact of these technologies is widely reflected in the nature of what is science and what is known as socially valid knowledge (BORBA, et al., 2018).

A reflection of current learning processes and their influence on technology mediated education can bring significant changes to society, characterizing new challenges for educational institutions, aiming at the autonomy of students in the search for knowledge.

Lin et al., (2018) and Jung and Lee (2018), describe self-efficacy as a valuable tool for collaborative learning because it makes the learner have a self-concept about teaching and the usefulness of learning. Therefore, an important notion of education to help them understand how well their skills can achieve. In this way, the student can benefit from the construction of self-concept in social interaction. Being that, this social interaction plays a role in learning and that the example of ideas with other people can actively motivate self-learning in the sense of sharing ideas.

The virtual learning environment (VLE) becomes a guiding tool that changes the rules about a student's active participation in learning. It was developed to make training possible, qualifying online. Being that, these environments with the use of digital tools can improve teaching, and learning outcomes (BORBA, et al. 2018).

Therefore, the incorporation of digital information sharing tools, can facilitate cognitive presence, and learning outcomes. However, there is a need to understand how to use these online tools to enhance and improve learning performance. (BORBA, et al., 2018; YANG et al., 2016; LIN; et al., 2018). In this way, information technologies using digital tools are widely applied to improve learning in a collaborative learning environment supported by computer.

Not only do students complete tasks, but they learn by sharing experiences. In addition, these experiences with the use of social networking tools can increase the social presence of the students, as well as improve their results of learning (YANG et al., 2016; LIN et al., 2018).

Thus, online collaborative learning suggests various strategies for developing the sharing of ideas and knowledge. Thus, Sharp and Lang (2018) and Noguera, et al., (2018) cite the agile methods, which are learning tools that use approaches that regulate work in teams.

The agile method is characterized by its adaptability to possible changes that may occur in the learning processes. This method aims to increase students' interaction by involving several techniques that speed up the learning process (SHARP and LANG, 2018; NOGUERA, et al., 2018).

Therefore, the combination of the agile method with problem-based learning can create new ways of learning, since the students used the interaction to learn and share ideas, seeking to achieve goal together.

Thus, there is a continuous process of decision-making, based on real challenges, where students must use strategies to solve problems. Agile learning implies that students create and develop skills and become self-directed, resilient, alongside teacher in a collaborative learning environment.

For this reason, teaching methods and techniques need to focus on technological changes, aiming to develop new skills, responsibilities, encouraging student interaction, and contributing to collaborative learning (SHARP; LANG, 2018).

Considerations

Technology-driven digital learning tools enable online collaboration due to evolving digital tools and applications. Learning tools should combine theory and practice, space and time, defining strategies as essential factors for a more autonomous and dynamic learning, favoring multiple teaching paths. This paper presented an approach in which a variety of tools could contribute to the qualification of the Tocantins police officer.

The results analyzed present the general objective of this study, which was to identify digital tools that can assist in empowerment through collaborative learning and that frequent innovation and improvement of digital tools contribute to the improvement of the quality of education. Whether it is problem-based learning, social networking and digital devices, the results show that frequent innovations and reinforcement of digital tools can contribute to new methodologies.

Given this theme, collaborative learning becomes an instrument capable of adapting education to the qualification needs of the military police, as well as reducing travel expenses, transfers and other expenses. In addition, collaborative learning is expected to transform and modify the way quality education is delivered.

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