New technologies applied to research in History of Education[1]

Novas tecnologias aplicadas à pesquisa em História da Educação

Nuevas tecnologías aplicadas a la investigación en Historia de la Educación

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Abstract

The use of new resources to support historical research is an imposition of the present time for researchers in the field of History of Education, not limited to technical application, but extends to the examination of technological processes that will enhance the exploration of sources. In this context, the purpose of this exploratory and descriptive study was to characterize the state of knowledge about the new technologies used in research on the History of Education, based on the publications available in the Journal Portal and the BDTD CAPES. It was sought to verify which technologies are used and the context of their application. The results indicated that the digitization has been the most used resource in the work of researchers in this field. It was also verified that the availability of the collected documents occurs, more frequently, through CD/DVD. With less incidence, the authors invested in the elaboration of database and repositories for the distribution of contents.

Keywords: Scanning. History of Education. New technologies. Digital Repository.

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Resumo

O emprego de novos recursos para suporte à pesquisa histórica é uma imposição da atualidade aos investigadores do campo da História da Educação, não devendo se limitar à aplicação técnica, mas se estender ao exame de processos tecnológicos que venham a potencializar a exploração de fontes. Nesse contexto, o presente trabalho, teve como objetivo caracterizar o estado do conhecimento acerca das novas tecnologias empregadas nas pesquisas de História da Educação, a partir das publicações disponíveis no Portal de periódicos e no BDTD CAPES. Buscou-se verificar quais são as tecnologias empregadas e o contexto de sua aplicação. Os resultados indicaram que a digitalização tem sido o recurso mais utilizado nos trabalhos dos pesquisadores desse campo. Constatou-se, ainda, que a disponibilização dos documentos coletados ocorre, com maior frequência, por meio de CD/DVD. Com menor incidência, os autores investiram na elaboração de banco de dados e repositórios para a distribuição de conteúdos.

Palavras-chave: Digitalização. História da Educação. Novas tecnologias. Repositório digital.

Resumen

El empleo de nuevos recursos para apoyar la investigación histórica es una imposición de la actualidad a los investigadores del campo de la Historia de la Educación, no debiendo limitarse a la aplicación técnica, sino extenderse al examen de procesos tecnológicos que puedan potenciar la explotación de fuentes. En este contexto, el presente trabajo, de carácter exploratorio y descriptivo, tuvo como objetivo caracterizar el estado del conocimiento acerca de las nuevas tecnologías empleadas en las investigaciones de Historia de la Educación, a partir de las publicaciones disponibles en el Portal de periódicos y en el BDTD CAPES. Se buscó verificar cuáles son las tecnologías empleadas y el contexto de su aplicación. Los resultados indicaron que la digitalización ha sido el recurso más utilizado en los trabajos de los investigadores de ese campo. Se constató, además, que la puesta a disposición de los documentos recogidos ocurre, con mayor frecuencia, por medio de CD/DVD. Con menor incidencia, los autores invirtieron en la elaboración de bases de datos y repositorios para la distribución de contenidos.

Palavras-clave: Digitalización. Historia de la Educación. Nuevas tecnologías. Repositorio digital.

Introduction

The Brazilian intellectual production, according to Amorim (2000), is hindered by the disorganization of the document agencies. Moreover, dispersed bases make it impossible or, at the very least, trying to discover information relevant to the researcher's work. Thus, the use of new technologies for documentary processing can subsidize historical research in terms of data conservation, integrated consultation, and exploitation of new knowledge in databases (AMORIM, 2000).

According to Gondra (2000), the use of technological resources to support historical research becomes an imposition of the present time in the field of the History of Education. However, it should not be limited to a technical application but should extend to the examination of technological processes that will enhance the exploitation of sources. From this, it follows the need for a relationship with other disciplinary fields, focusing on possible contributions to the access, analysis, and availability of materials or documentary collections. In this sense, Bonato (2011) states that the field of the History of Education expands in its research possibilities through new technologies since it can provide new supports to record, store, and retrieve information. We thus observe that dialogue between the field of Archivology, Information Technology, and Communication becomes necessary.

In this context, this exploratory and descriptive work aims to characterize the state of knowledge about the new technologies used in research in History and History of Education, based on the publications available on the Journal Portal and the Thesis Bank of the Coordination for the Improvement of Higher Education Personnel (CAPES). The following research questions were defined to guide the search in these sources: a) Which technologies were employed? b) In what context was the technology adopted? The answers to these questions can help researchers in the proper selection of technologies for use in research.

The work is organized, from this introductory section, as follows: Section 2 presents the theoretical basis, section 3 presents the methodology adopted, section 4 presents and discusses the results and, finally, section 5 presents the conclusions about the study.

1. Theoretical background

The History of Education as a discipline emerged at the end of the 19th century, but not as an area of History, but of Education itself (GALVÃO, LOPES, 2011). In Brazil, the History of Education has incorporated into the regular school curriculum since 1928, and its evolution culminated with the creation of the Working Group on the History of Education of the National Association for Post-Graduate Studies and Research in Education in 1984 (ANPED, 2018). This action provided expansion in the field of research, generating significant changes such as improvements in conceptual and methodological contours, as well as the development of possibilities on objects and sources. Among the theoretical-methodological trends adopted, cultural history stands out, which, according to Chartier (1990), points to the need to study the materiality of cultural objects, considering the form of production, circulation, consumption, and appropriations.

From this perspective, the sources, the raw material of the historian, emerge as an enriching means for the knowledge of the context surrounding it. In his search for elements that bring out evidence about the investigated object, the researcher should then consider as many sources as possible, questioning them and relating them to obtain the closest possible proximity to the investigated scenario in the face of the evidence found. As Tuchman (1991, p.11) mentions: "We can never be sure that we have recaptured the past as it was. But the least we can do is stay inside the evidence".

It is worth noting that, in the context of documentary sources, Le Goff (1996) warns that the document is not a portrait of reality, but the result of conscious or unconscious choices, both in its elaboration and preservation stages. The past is known based on preserved documents, which were written by people who applied their views there. In his concept of a monumental document, Le Goff (1996) mentions:

> The document is not innocuous. It is, first of all, the result of an assembly, conscious or unconscious, of the societies that produced it, but also of the successive times during which it continued to live, perhaps forgotten, during which it continued to be manipulated, even by silence. The document is something that remains, that lasts, and the testimony, the teaching (to evoke the etymology) that it brings must first be analyzed, demystifying its apparent meaning. The document is a monument. It results from the effort of historical societies to impose on the future - voluntarily or involuntarily - a particular image of themselves. At the limit, there is no real document. Every document is a lie. It's up to the historian not to play the naive part. The medievalists, who have worked so hard to build a criticism - always useful, no doubt - of the false, must overcome this problem, because any document is both real - including perhaps especially the false ones - and wrong because a monument is first and foremost a garment, a deceptive appearance, a montage. It is necessary to start by disassembling, demolishing this assembly, destructuring this construction, and analyzing the production conditions of the monuments documents. (LE GOFF, 1996. p. 538).

The search for "production conditions", indicated by Le Goff (1996), compels the historian to considerations of additional sources that elucidate a situation initially given as a documentary fact. The examination of these various sources imposes the use of resources that make it possible to identify the most significant number of pieces of evidence that relate to the scenario and object investigated. For this, it is necessary that the researcher adopts technologies that allow storing, cataloging, and consulting sources of research.

Such technologies have had their use of multiplied by historians since the 1980s (LOMBARDI, 2000). Some of the factors that contributed to this were the cheapening of the equipment, and the increased use of microcomputers, which appeared in the 1970s, in the United States, and Brazil, in 1974, with the "Cobra" computer. This equipment was an evolution of the 1972 "Pato Feio" project, which involved a team with members from the University of São Paulo (USP), Pontifícia Universidade Católica do Rio de Janeiro (PUCRJ) and the Federal Data Processing Service (SERPRO). This team created the first commercial computer, totally designed and built-in Brazil (WAZLAWICK, 2016), becoming popular mainly among public companies and universities. Since the 1990s, the computer has also been used by private companies, consolidating computerized practices in business. The use of computers and the high volume of data generated promoted the emergence of the Internet in 1992. Initially, with non-commercial use, restricted to the academic and military sphere, the Internet evolved from the creation of the browsers Mosaic in 1993 and Netscape in 1994 (WAZLAWICK, 2016). With this new resource, the Internet is now used by non-technical users and researchers from various fields, including those in the History of Education.

New technologies are essential for research in the History of Education and has been the subject of work, highlighting the debate held in August 2000, promoted by the Working Group on the History of Education of ANPEd, during the seminar "The impact of new

technologies on research and training of researchers in the History of Education", which resulted in the publication of the book "Archives, sources and new technologies: issues for the history of education" (FARIA FILHO, 2000). Thus, authors in the field, such as Gondra (2000) and Fonseca (2000) and Lombardi (2000) started to indicate that this is an imposition of the present time for researchers in the History of Education, who should appropriate and benefit from the resources provided by the new technologies.

2. Methodology

The methodology adopted considered the characteristics and procedures of applied research, which is its purpose aims to obtain knowledge directed to a specific situation (BOAVENTURA, 2004; KOTHARI, 2004; GIL, 2010; PERDIGÃO; HERLINGER; WHITE,2012). In its objectives, the research is classified as exploratory and descriptive, allowing the gathering of information on the object - the new technologies applied to the History of Education, and the identification of its characteristics and conditions in the researched productions (SEVERINO, 2007; GIL, 2010; HABIB, PATHIK, MARYAM, 2014). As a research strategy, searches were made in the Journal Portal and the CAPES Thesis Bank, identifying published works that employed new technologies in the context of History or History of Education and verifying the objective of using these resources in the own researches. The final milestone set for the publications was May 2018. The terms used for the searches were: digital technology, new technologies, history, and history of education. These words were organized as follows: ("digital technology" OR "new technologies") AND ("history of education" OR "history"). After the search, the title and abstract were read for an initial selection. This action was considered the alignment of the work with the objective of this investigation.

After the initial selection of papers, based on the titles and abstracts, it was developed to investigate and validate with focus on the objective before the interests of this research. Data on the type of technology and the context of its application have been extracted below. After the organization of the data obtained, the results were analyzed and discussed under a qualitative approach, making it possible to understand the information that emerged in the specific scope of the new technologies applied (BOAVENTURA, 2004; BLANCHE, DURRHEIM, PAINTER, 2006; SEVERINO, 2007).

3. Results and discussion

Based on the criteria adopted in the search for the works, the result was the identification of eighteen productions that presented, in the title or abstract, the application of new technologies in research in the field of History or History of Education. Faced with the questions that guided this investigation, it was found that the technology most employed by the researchers is digitalization, found in fifteen works. The authors focus on the use of digitization for document preservation.

Considering that work can address the application of more than one technology, ten productions were identified in which their authors implemented databases. It is important to note that this is a relevant action for the consolidation of information storage and cataloging repositories, facilitating the development of new investigations or expanding existing ones. For the storage, preservation, and distribution of contents, nine works were identified that used the CD or DVD media. With fewer works, the site, as a technology that also allows the distribution of content, was approached in seven productions. Next, the use of natural language processing (PLN) in work was verified and, finally, the only article with a proposal developed for a virtual museum. The representation of these data concerning the total practices investigated is presented below.

Graph 1 - Technologies used in History or History of Education articles.
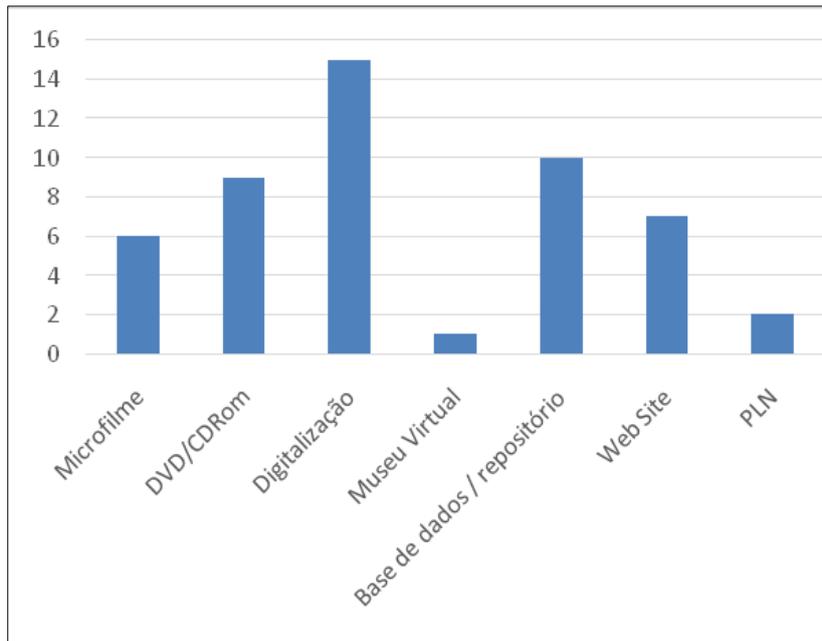
Source: The authors, research data (2018).

Regarding the context in which the technology was employed in the productions, it was identified that there is a greater tendency to use it for document preservation and reduction of physical space for storage. In Vieira's work (2011), which deals with the Public Archives of the State of Paraná, the advances that are microfilming and the digitalization of public documents can bring to researchers in the History of Education are presented. Bonato's work (2004) has an approach to the useful contribution of new technologies to the expansion and diversification of sources in research on the History of Education. However, she sets out the need for attention on the monitoring of the means used for storage. According to Bonato (2004), it is essential that the transfer of information to new media be carried out at the risk that shortly, it will not be possible to obtain access to it due to an obsolete technological format.

In terms of preservation, the work of Pena e Silva (2008) presents document digitalization to protect historical documents. For effective management of this documentation, the authors propose a methodology for the implementation of an electronic document management system (EDM), which promotes the democratization of online information access. The focus on document digitalization was also identified in the production of Lopes et al. These authors describe their work in creating a DVD with sources for the History of Education in Ouro Preto do Oeste, State of Rondônia, containing videos of sixty-four interviews, as well as other documentary and iconographic sources. The DVD aimed to allow preservation of the History of Education, often unknown, about that city. Still focused on historical preservation, Cabral's work (2002) presents the digitization process as a way of conserving and preserving informative materials in libraries and archives, highlighting the importance of planning for the adoption of new technologies and presenting as advantages the economy of physical space and meeting of documents, now dispersed in the same place.

In Siqueira's work (2005) the result of the Education and Memory Group (GEM) of the Federal University of Mato Grosso (UFMT) is presented, with the organization of written sources and interviews through the creation of a database, a voicebank, and a source bank,

and generating CDs that integrated a set of private, public and family sources. These actions aimed to facilitate access to researchers on the History of Education in that state. In the same line of preserving sources, Souza's work (2013) was identified, which points out as essential the debate on conservation and documental protection as a condition for the development of the country's educational heritage.

In line with the reflections promoted by Souza (2013), the work of Silva (2011) also addresses the importance of preserving documents from school archives, pointing out as urgent the intervention of areas such as Archivology and Information Sciences with researchers of History and History of Education. The dialogue and interdisciplinary work between these fields are necessary for the search of updated means for the safeguarding and efficient provision of documents. This perspective on school documents was also identified in the work of Fernandes (2010), which points out the fragility of technological and human resources for archiving and document preservation activities in schools, compromising the recovery of historical memories. This author highlights the urgent need for digitization of the collection of these institutions. This action involves the issue of school management, an aspect present in the production of Toschi and Rodrigues (2003), where the work of preparing a CD with audiovisual materials for the subjects of History of Education and Teaching Practice is exposed. The same content was used for the creation, by the authors, of a virtual museum on education. Toschi and Rodrigues (2003) collected, in the school environment of the cities of Goiânia, Anápolis, Jataí, and Catalão, their study sources. The authors' reflections point to the need for articulation between the academic, technical, and management dimensions.

Pereira (2011) focused on school reality, worked with several documents for the history of education, including CDs, DVDs, and diskettes. The author sought to classify and prioritize the content found to constitute the memory of public primary school in the Federal District. The author also created a model of the digitalization process for the compilation of a documentary collection. This resource was used in the work of Soares, Braga, and Lima (2015), who present the digitalization of documents related to education during the military regime. The process was developed by classification, digitalization, storage, and availability through a digital repository. These same technological means were used by Louveira and Ferro (2013). These authors have created a photographic database of children and childhoods from southern Mato Grosso, creating a catalog called "FotoMemo", which was made available for use through CDs and DVDs. The CD media was also adopted in Werle's work (2007) as a form of support for identity and institutional history research, discussing the digitization and organization in CDs of documents that allow the reconstruction of the history of school institutions.

The work of Góes (2008) presents a database on the History of Education, related to productions at the Stricto Sensu level of educational institutions in Salvador, Bahia, with a focus on reducing the search time for researchers, in addition to ensuring the integrity and preservation of the collection, and access to the public. Also, about the northeast region, Andrade (2016) presents the experience of creating a digital repository with sources of History of Education about the city of Bananeiras, in the state of Paraíba, intending to allow the sharing of documents for research purposes.

Finally, Piotrowski (2012) and Pettersson et al. (2016) identified the works that used natural language processing to extract information for the analysis of historic documents, allowing the expansion of information discovery in an automated way. This technology made it possible to detect patterns in documentation written in English, from 1504 to 1900, indicating occurrences on education in the investigated sources.

Conclusion

Although no standard has been identified about a specific technology to be used in the treatment of sources for the History of Education, it was possible to see that digitalization has been the most used resource in the work of researchers in this field. It is possible to infer that this occurs due to the objective, indicated as urgent by the authors, of attending the necessary preservation of collections. However, it should be noted that the medium or media used for digitization in a given period may make it impossible to rescue the source at another time. It is necessary to consider that the technological update currently occurs dynamically and involves the equipment itself for the access, visualization, and reading of this collection.

It was observed that there is a concern of the authors to build a collection from their research. The documents collected are most often made available on CD or DVD. Some authors have invested in the development of databases to catalog their works. With less incidence, researchers implemented sites or digital repositories for content distribution. This scenario indicates the concern not only to digitize the sources but also to develop means of searching and consulting the information. Besides, Piotrowski (2012) warns that researchers in the history of education cannot stop only at cataloging, but must also seek information through natural language processing, which will allow the use of computers for the understanding and interpretation of human language.

Thus, it becomes necessary for the researcher to master such techniques, not for the creation of technological resources, but their use in everyday research. This will allow for document preservation and scientific advancement related to educational history research, democratizing access to the academic community. This is a path that, although it has already been traveled by several researchers, still demands a greater interest in the expansion of the use of new technologies. As suggested by Faria Filho (2000), there is a need to create a national virtual repository of the History of Education, which in addition to unifying access by researchers, would subsidize historical research, allow data conservation, and integrated searches to a knowledge base.

Acknowledgements

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