Digital Humanities: Visions and Applications

Volume 3

Editor:
Edgar Bisset Alvarez

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ABOUT THE SERIES

Advanced Notes in Information Science (ANIS) is a book series that will publish conference proceedings, monographs, and thematic volumes from the information sciences field. ANIS will consider research works covering topics (but not limited to) such as information retrieval, information systems, information architecture, information behavior, digital libraries, information literacy, information management, data management, library studies, user experience design, knowledge management, sociology of information, science communication, mass communication, organizational communication, among others. The series intends to serve as a platform for students, researchers, and practitioners from the public or private sectors.

PREFACE

""Digital Humanities, as a possible research field, or even some of its initiatives as an investigation object for information scientists, seems to be imperative for the development and expansion of Information Science in a society increasingly mediated by digital and subordinated to new technologies, — and worrying — algorithmic logic of life".

Ricardo Pimenta

Digital technologies have revolutionized studying, analyzing, and interpreting human culture, history, and society. Digital humanities (DH) combine traditional disciplines such as literature, history, and philosophy with computational methods and digital tools. DH allows scholars to collect, organize, and analyze vast amounts of data, uncover patterns and relationships previously hidden, and create visualizations and models that enhance our understanding of complex cultural and social phenomena. By combining humanistic inquiry with cutting-edge computational techniques, DH offers new paths for research and scholarship, allowing us to explore and interpret our cultural heritage in unprecedented ways. The rise of DH also raises important questions about the role of technology in shaping our understanding of culture and history. As we continue developing and applying new digital tools and methods, we must remain attentive to our work's ethical and social implications. We also must ensure that technology enriches and deepens our understanding of the human experience rather than diminishes or distorts it.

DH has rapidly evolved over the past few decades, with an increasing number of scholars and practitioners exploring the intersection between digital technologies and humanities research. This book: "Digital Humanities: Visions and Applications", seeks to provide a comprehensive overview of this diverse and rapidly changing field. While some scholars may focus on the technical aspects of digital tools and methods, others may be more interested in using tools to ask questions and generate new insights. This book seeks to provide a broad overview of the DH field, highlighting its strengths and limitations and offering insights into the many exciting possibilities.

In the first chapter, titled: "Digital Humanities indexed in DOAJ: An analysis of scientific publications," authors analyze publications on DH indexed in Portuguese in the Directory of Open Access Journals (DOAJ) from 2017 to 2021. The results were presented in three sections representing three major fields of study, making it possible to conclude that publications on the topic have been growing. It was also noticed that some of the articles retrieved misinterpret what Digital Humanities is. In the second chapter, titled: "*Déjàvu* Project as a digital solution to help the appraisal of documents focused on digital humanities", the *DéjàVu* Project is analyzed as a complementary solution to the archival function of document appreciation in the digital humanities. It develops a case study of the digital solution developed in the DéjàVu Project and exploratory and qualitative research with technical procedures related to the bibliographic study of digital humanities and documental evaluation in the literature.

The third chapter is titled: "Digital humanities and visual project management: Use of tools in libraries". The authors started from the understanding that the techno-

logical tools for Visual Project Management have been configured as a part to be investigated in the scope of DH. They identified if these tools are used in libraries and those based on a bibliographical survey in the Web of Science. The fourth chapter: "Digital Humanities and university extension in information science," studies the dialogue between DH and Information Science. The authors presented practical experiences about the DH actions at the Federal University of Santa Catarina. "Empathy map of postgraduate students on information science: A reflection on the relationship between students and digital humanities" is the fifth chapter. In the Federal University of Santa Catarina context, it also explores the real expectations and thinking of students attending the DH course.

The sixth chapter titles: "Access to archival collections about Brazilian federal universities' monuments through the "Access to Memory" platform". The authors propose utilizing the records description and diffusion platform "Access to Memory" to promote access to archival collections kept in the permanent archives of Brazilian federal universities related to monuments within such institutions. The study shows that Information Science, Archival Science, and Digital Humanities can establish convergent actions that are fundamental in a society more and more oriented to digital resources.

In the seventh chapter, titled: "Digital humanities project proposal: Clipping from newspapers and magazines online and printed about education and the Institutes of Education, Science, and Technology (IFES)," a clipping service is introduced. This clipping service bases on monitoring and selecting news about the Federal Institutes of Education, Science, and Technology, as well as general education published in digital and printed journals. Meanwhile, the

eighth chapter, titled: "Digital technologies as potentiating tools in the dissemination of information in museum spaces: Impact of the Covid-19 pandemic on museums," discusses the DH activity in the museological context. It is considered essential to use digital technology tools for information dissemination in museums, highlighting the period faced by the COVID-19 pandemic. Finally, the ninth chapter, titled: "Proposal for a National Bank of non-prosecution agreements," proposes a National Bank of Non-Prosecution Service Agreements in the scope of DH and Knowledge Organization for consultation with the bodies involved and the population in general. The National Council of the Public Ministry of Brazil coordinates this initiative. According to the authors, DH can be applied within the scope of the Anti-Crime Package (Law nº 13.964/2019), specifically in Non-Persecution Agreements. The lack of communication channels between the twenty-nine Public Ministries that can sign such agreements prevents verifying who has signed them. Thus, one of the legal requirements of this measure cannot be guaranteed.

We invite readers to explore DH's exciting and rapidly evolving field and engage with the diverse perspectives and debates shaping its future. Whether you are a scholar, student, or simply curious about the intersection of technology and human culture, DH offers a rich and dynamic space for exploration, creativity, and discovery.

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CONTENTS

Digital humanities indexed in DOAJ: An analysis of scientific publications

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ABSTRACT
It presents an analysis of publications about Digital Humanities indexed in Portuguese in the Directory of Open Access Journals (DOAJ) from 2017 to 2021. A simple search was performed using the term "digital humanities" which retrieved 33 articles published in 25 open-access scientific journals. The results are presented in three sections representing three main fields of study. It was possible to conclude that publications about digital humanities have been growing and that some of those publications' concerns are to show projects and the digital tools used on them. In addition, they mention distant reading, big data, and the COVID-19 pandemic. It was also noticed that some of the articles retrieved misinterpret what Digital Humanities is. The expansion of databases is suggested for future research on this subject, favoring even the information literacy of researchers interested in this theme.

Keywords: digital humanities; scientific journals; DOAJ

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1. INTRODUCTION

Finding a single definition for Digital Humanities (DH) is a complex task, but there is some consensus that the Jesuit Roberto Busa carried out the first Digital Humanities project (Rojas Castro, 2013; Galina Russell, 2011). In a summarised and simplified way, it can be said that DH seeks "to understand the impact and relation of computational technologies on the work of researchers in the Humanities." (Galina Russell, 2011, p. 3-xx). Rojas Castro (2013) identifies interdisciplinarity as a feature of Digital Humanities and states that "the collaboration between humanists, computer scientists, graphic designers, and librarians is the typical way of working in Digital Humanities centers" (Rojas Castro, 2013, p. 78).

Given the interdisciplinary nature of the subject, this research sought to analyze publications on Digital Humanities indexed in the Portuguese language in the Directory of Open Access Journals (DOAJ) between the years 2017 and 2021. Initially, the methodology employed to conduct the research and the results obtained are presented. The detailed presentation of the results shows the main characteristics of the retrieved articles and the data extracted from them. It is divided into three subsections, presenting the articles according to the area of knowledge they integrate into.

2. METHODOLOGY

The research developed in this study is characterized as bibliographic and exploratory research. The search for articles was conducted in the DOAJ in December 2021. The DOAJ is considered a global directory that covers scientific journals that are open-access, free, and peer-reviewed, having

been created "to increase the visibility of open access journals and promote their use" (Mendes & Rodrigues, 2021).

It has opted to use as a search strategy only the term "digital humanities" (humanidades digitais, in Portuguese) and to use as a limiter the option that searched for the term in the keywords field since this way, we would have. As a result, only documents in which the authors had chosen the term "humanidades digitais" to represent them. As a result, we obtained 39 articles published between 2015 and 2021.

Focusing on analyzing articles from the last five years, the publications before 2017 were excluded, along with a document from 2017, because it was a book review. In total, 33 articles were analyzed, one published in Spanish, two published in English, and the remaining published in Portuguese. Figure 1 presents the number of publications per year. It is noted that publications in Portuguese and open access have increased in the last two years.

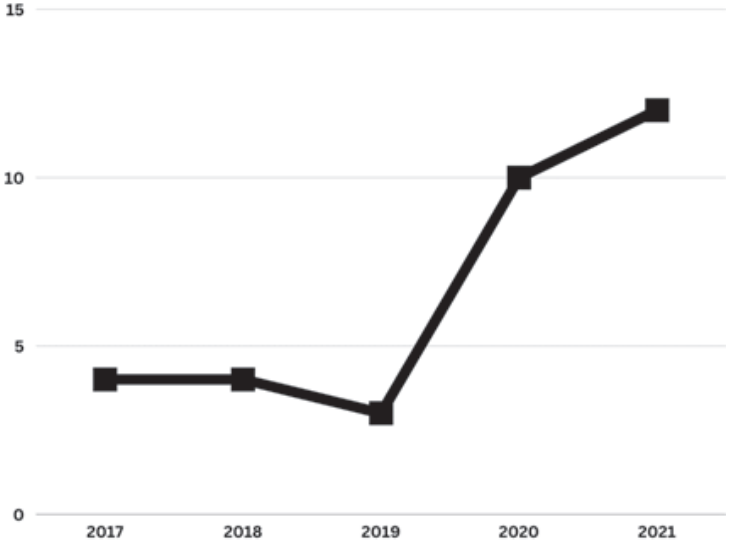

Figure 1. Yearly publication output on Digital Humanities in DOAJ.

3. RESULTS AND DISCUSSIONS

During the reading and extraction of data from the articles for analysis, we sought to identify: whether the publications presented a definition of what Digital Humanities was; whether they reported on a specific project and indicated the digital tools used in that project; authorship patterns; identification of the journal of publication; scope of the journal in which the article was published; and the theme of the article.

A wide variety of publications was noted concerning the journals in which the articles were published. The 33 articles were divided among 25 different journals, with the *Revista de Humanidades Digitales* having the largest number of articles (4), followed by *Estudos Históricos* (3), *Esboços* (2) and *Pessoa Plural* (2). All other journals only presented 1 article, each indexed with the keyword "humanidades digitais". These 25 journals were divided into four areas, according to their scope of publication, to facilitate the presentation of the data. Table 1 shows each of these areas with their respective journals. The area with the largest number of journals is Linguistics, Modern Languages, and Arts, followed by the Humanities. The journals characterized as Interdisciplinary or Multidisciplinary have the third largest number of journals. With the lowest number of journals is in the area of Applied Social Sciences.

Table 1. Division of journals according to their scope of publication.

Area	Journals
Linguistics, Modern Languages and Arts	Gragoatá; Pessoa Plural; Entreletras; Texto Digital; Linguamática; Materialidades da Literatura; Manuscrítica; Linha D'Água.

Area	Journals
Humanities	História da Historiografia; Esboços; Estudos e Pesquisas em Psicologia; Locus; Fronteiras; H-ART; Caderno CEDES.
Inter/ Multidisciplinary	Revista de Humanidades Digitales; Estudos Históricos; Revista Lusófona de Estudos Culturais; História, Ciências, Saúde – Manguinhos; Holos; Revista do Instituto de Estudos Brasileiros.
Applied Social Sciences	Encontros Bibli; Revista Observatório; Anales de Documentación; Em Questão.

Analyzing the authorship of the articles, it was noticed that there is a balance between articles published by a single author and articles published by two authors. There are 14 articles published by two authors, while those published by single authorship are 12. Only three articles indicate more than three authors, while the other four have exactly three authors associated. For a better presentation of the panorama presented by the research recovered in the survey, we identified the main themes of the articles published in journals whose scope is interdisciplinary or multidisciplinary. Each of these articles was grouped into the other three areas of knowledge.

3.1. Digital Humanities in the field of Linguistics, Modern Languages, and Arts

Few articles present any specific definition of Digital Humanities. Pelaes (2018), for example, states that the

> Digital Humanities can be defined as an area that is characterized as a 'trans-subject' that incorporates

> the methods, devices, and heuristic perspectives of the social sciences and humanities while simultaneously mobilizing the unique tools and perspectives opened up by digital technology (Pelaes, 2018, p. 69).

Santos *et al*. (2020) bring the report about the *Primeiro Encontro sobre Literatura Distante em Português* (*First Meeting on Distant Literature in Portuguese*) held in 2019 at the University of Oslo and, instead of bringing a broad definition of Digital Humanities, they propose the concept of distant reading as an area within Digital Humanities, being distant reading "a specific and increasingly evolving interdisciplinary area that combines the domains of Literary Studies, Computational Linguistics, and Applied Informatics in the analysis of large collections of texts, which, by its nature, comprises data of significant volume" (Santos et al., 2020, p. 280).

Another mention of distant reading within Digital Humanities is made by Josiowicz (2021, p. 348). The author argues that both areas "aim to observe large systems of cultural productions, starting from a cultural critique of computation and a large volume of empirical data and utilizes abstract patterns to analyze the cultural meaning". Finally, Pereira and Silva (2021) rely on several other authors when they bring the definition of Digital Humanities within the article but state that:

> If, on the one hand, the Digital Humanities encompass the collection of research and experiments aimed at facilitating the use of digital resources in social sciences and humanities, they are not limited to a simple transfer of the environment. It is

> also about problematizing the process of knowledge construction. (Pereira & Silva, 2021, p. 71).

Freitas (2017) brings a very simplistic definition of Digital Humanities, stating simply that it is "the use of computers in the humanities" (Freitas, 2017, p. 1208) and that digital humanities "have as principles the use of open data, sharing and a deep interdisciplinarity" (Freitas, 2017, p. 1212). In her article, the author aims "to observe language from the lens of computational tools" (Freitas, 2017, p. 1208); for this, she uses the N-Gram Viewer tool. Another article that showcases the use of a specific tool is Barbosa and Pittella's (2017). The article explains a Digital Humanities project focused on Fernando Pessoa's work, *Livro do Desassossego*. In this project, the tool used is TEI (*Text Encoding and Interchange*).

Still focusing on Fernando Pessoa's work as the object of a project in the Digital Humanities field, there is Portela's (2018) article, but it only explains the project's development without delving into the use of a specific tool. Also focusing their article on presenting a project, Vieira (2018) presents *Voyant Tools*, a digital tool for textual analysis. In the project, the tool examines the writings in letters from Spanish and Portuguese captives between the 16th and 18th centuries. Two other tools were also used for visual interpretation of the content of these letters, the Cirrus tool (for creating word clouds) and TermsBerry (which relates word frequency to other terms). The letters used in the research were taken from a Digital Humanities project developed by the University of Lisbon, entitled *P.S. Post Scriptum: Arquivo Digital da Escrita Quotidiana em Portugal e Espanha na Época Moderna (P.S. Post Scriptum: Digital Archive of Daily Writing in Portugal and Spain in the Modern Era)*.

Continuing with articles that present projects and the use of digital tools, we have Santos, Bick, and Wlodek's (2020) article, which presents a report on creating a collection of Lusophone literature within the D*istant Reading for European Literary History* project. In addition to making this collection, called ELTeC-por (*European Literary Text Collection*), the authors present, in detail, the use of the PALAVRAS-NER tool, which is used to check entities within texts. Josiowicz (2021) uses authors Jorge Luis Borges and Clarice Lispector as references to analyze reading habits during the COVID-19 pandemic on Twitter. Wolfram Mathematica software was chosen to extract the necessary data from the mentioned social network for the research.

Presenting a project but not explicitly mentioning the use of a specific tool is Pelaes' (2018) text. The article brings the notions of digital poetry and interpoetry into Digital Humanities. It presents the *DenZeLeio* project developed by the Laboratory of Digital Humanities (LHUDI) at the Presbyterian University Mackenzie. Boaventura, Santos, and Barreiros (2021) present ways in which digital can be used within the field of philology, using the writer Eulálio Motta's collection as an example. Finally, Pereira and Silva (2021) report on the creation and availability of the *Introduction to Classical Egyptian* (*Middle Egyptian*) course on a digital and open-access platform, inserting the reported project as part of Digital Humanities.

3.2. Digital Humanities in the Field of Humanities

Within the field of Humanities, a few articles also present definitions of what Digital Humanities would be. The main focus of the articles is the presentation of projects inserted within the field. Rollo (2020, p. 21), for example, does not address the definition but brings up that the contributions

of Digital Humanities to the scientific field and society, in general, are: "[in] safeguarding and preserving digital heritage; [in] education and training; [in] organizing information; [in] articulating with other scientific areas; [in] accessibility, dissemination and sharing of knowledge; [and in] commitment to society." An interesting placement found in the article is the author's statement that there is a shortage of skills and competencies for using digital tools and languages in the field of Digital Humanities. The article is concluded with the presentation of the *Memory for All* program, which brings together several projects in the area of Digital Humanities.

Marino et al. (2021, p. 592) state that "With the technological enhancement of the turn of the century, the digital humanities have revitalized themselves in research and scientific dissemination experiences interested in reconfiguring the precepts of scale and scope, on diverse fronts", being three examples of "fronts" cited by the authors the distant reading (used mainly in the area of Linguistics, Modern Languages, and Arts), the use of Geographic Information Systems (GIS) and Big Data. Focusing the article on Brazilian digital archival initiatives themed on the COVID-19 pandemic, the authors introduce the concept of "informal archives", explaining that "The political meaning of informal archives, beyond establishing competition with established powers, offers the possibility of preserving vestiges of historical personages who, in the traditional archival structure, would probably be ignored" (Marino, Gajanigo, Souza & Nicodemo, 2021, p. 567).

Santos and Costa (2021) present a ponderation on using digital tools in the context of historical research. For them, Digital Humanities emerged as a field "dedicated to thinking exactly about the methodological changes

engendered by digital informatization" (Santos & Costa, 2021, p. 205). Another point made by the authors is regarding the existence of a movement called *Digital History* 2.0, which "intends to create a new relationship between the historian and their sources, as well as with their audience, making a more pertinent use of digital technology" (Santos & Costa, 2021, p. 205).

The article by Santos and Costa (2021) also presents the project *Vida Cotidiana na Comarca do Rio das Velhas no Século XVIII* (*Daily Life in the Rio das Velhas District in the 18th Century*), which began to be developed at UFMG in 1992, using as a research object the documentary collection of *Casa Borba Gato*. As the project was started in 1992, the authors were concerned with describing how this work was developed and the technical difficulties faced at the time. The objective of the research reported in the article was to use the database of this previous project and update it based on the new technological tools available today within the parameters of Digital Humanities.

Also addressing "digital history" is the article by Pires and Amorim (2021). The authors insert the article: "In the intersection of the fields of History of Education and Digital History, to think about the implications in the historian's doing from working with digitized historical sources and digital repositories" (Pires & Amorim, 2021, p. 2). The text begins with an explanation of the historian's work and the changes in this process, mainly related to new sources of information in digital support, either digitalized or born-digital. They state that "in the weavings of the digital universe, from the moment the search network becomes wider, the historian's look also expands and complexifies" (Pires & Amorim, 2021, p. 5). The authors proceed to discuss the historical sources that are digitalized and the digital

repositories, presenting, at the end of the article, the repository of the Swiss journal *Pour L'ère Nouvelle*.

The other two articles bring the theme of education and/or teaching, that of Narita (2021) and Rodriguês, Godoi, and Costa (2021). Narita (2021) focuses his article on discussing history teaching in the Latin American context from three main ideas: coloniality and decoloniality, history teaching within physical and digital spaces, and the crisis in the humanities. To him, he states,

> The *digital humanities* [author's underlining] are not only the translation of contents to the digital environment but a condition of school knowledge in the humanities that, in dialogue with the infrastructure of storage and circulation of data, links the teaching, research and learning to the new socio-technical relations of the networks (Narita, 2021, p. 257).

The author complements his definition of Digital Humanities by posing, "The most visible edge of the digital humanities is in the provision of resources for teaching and research" (Narita, 2021, p. 258). Rodriguês, Godoi & Costa (2021), on the other hand, focus their article on the execution of a textual analysis of the journal *Educational Review*, published between the years 1891 and 1921, to verify and understand the "ideas about a teaching of algebra for elementary instruction" (Rodriguês, Godoi & Costa, 2021, p. 198) that were linked in the journal, using the software IRaMuTeQ for analysis of the articles.

Nicodemo and Cardoso (2019) present, in their article, the idea of the writing of history through a non-human writer, that is, a writing generated exclusively through a computational program, making it clear that the goal of the article is not to work on the replacement of the historian

by a program, but to think hypothetically about this possibility. One of the concepts discussed in the work is that of the archive as a physical space where data is accumulated so that later on, the idea of the hyper archive is introduced, which would be responsible for feeding the "historian robot". The processes and tools necessary for creating the robot are widely and thoroughly discussed in the article, as well as the ethical issues involved, emphasizing the discussion on neutrality and objectivity.

Another article that addresses ethics and, mainly, the issue of neutrality is the work of Rodrigues (2020, p. 66), who describes a project related to the creation "of a database on the enslaved population that lived in the region of Mariana (Minas Gerais) in the 18th century". Concerning neutrality, the author states that:

> In the case of digital history, the analogy of discussions on ethics and big data is that databases are not neutral, especially since the process of producing the historical information we compile was crossed by a series of social relations in the past. (Rodrigues, 2020, p. 72).

For this very reason, the author explains that, in his project, were developed "methodologies that allow the user to see the asymmetrical power relations embodied in the documents". (Rodrigues, 2020, p. 73).

Laitano (2020) deals with the relationship of human sciences with digital technologies and the possible practices for historians to insert themselves in this new era, in which the digital is predominant. The author brings practical examples of the historian's performance within this space. An interesting question raised by the author concerns the need to create subjects, such as digital humanities

and digital history, to work in the human sciences within a world already wholly inserted in the digital. He explains that "The trump card of digital history and digital humanities lies in the ability to reinvent the subject, to resignify traditions that seem to lose their meaning, to renew our [historian's] craft." (Laitano, 2020, p. 176).

Another Digital Humanities project was introduced by Ferla *et al*. (2020) entitled *Paulicéia 2.0*. The project was developed to collaboratively map the history of São Paulo from 1870 to 1940. The execution of the project is explained in detail throughout the article, and the authors also address the use of computing within history and by the historian, including the challenges faced and ways of adapting to technologies by this professional.

To conclude, the article by Motilla Chávez and Esqueda López (2021) describes two projects (or initiatives) linked to Digital Humanities. The first is the *Sistema de Información de la Práctica Artística*, which aims to create a repository of works by artists connected to the State of San Luis Potosí, in Mexico. The authors point out that the materials included in this repository are analyzed "through the use of methodologies and perspectives specific to the field of digital humanities, including the creation of databases, digitalization, and the processing of archives through text mining" (Motilla Chávez & Esqueda López, 2021 p. 87). Throughout the rest of the text, the authors describe the project's development and explain that the Omeka software was used as a tool. The second project described by Motilla Chávez and Esqueda López (2021) is the *Centro de Documentación Artística Jesús Ramos*, an unfolding of the previous project, which has its physical headquarters but also carries the concern of preserving its physical collection in a digital environment.

3.3. Digital Humanities in the Field of Applied Social Sciences

Within the area of Applied Social Sciences, it is more common, in the articles, the presentation of one or several definitions of Digital Humanities. Coneglian and Santarém Segundo (2017, p. 89), for example, define it "as the subject capable of performing intersection between technologies and the humanities, in the search to make more effective the access and retrieval of information generated by the humanities, through the application of technologies." Bomfim and Lucena (2019, p. 80) put that "In general, the Digital Humanities (from now on also referred to as DH) can be considered as a field of knowledge resulting from the confluence of different academic areas related to the social sciences and humanities intermingled with the technological-digital dimension."

Führ, Bisset Alvarez, and Araújo (2021, p. 2) define Digital Humanities as the "use of information technologies for the development of research in the humanities and social sciences," while Castro (2020, p. 28) considers that:

> DH emerges to categorize a contemporary reality of technological presence in the field of traditional sources of information, which were previously enjoyed only in their physical format. This is a movement that, by impacting the area of humanities and social sciences, leads peers to the perception that research now becomes mediated and determined by technologies. (Castro, 2020, p. 28).

Information Science stands out as an area in the Applied Social Sciences. Pimenta & Gomes (2019, p. 32) clarify that "about DH and Information Science, it is possible to

claim that their common interest lies in the study of networks and other systems or structures through which recorded information transits.". The authors present in their article the report of a Python language course held by the *Laboratório em Rede de Humanidades Digitais* (Larhud) (Digital Humanities Network Laboratory), offered to researchers from the Postgraduate Programme in Information Science of IBICT/UFRJ. It is explained that the program was planned as the need to capacitate researchers and students to use computational tools to treat large volumes of data in research was perceived.

Another author who addresses the skills in the use of digital tools by researchers is Castro (2020). For him, information literacy is presented as a point of convergence between Digital Humanities and Information Science. The author states: "The informational environment has undergone strong transformations that have not been accompanied by all individuals in a symmetrical pace. In this context, arise the reflections around information literacy that problematizes this process in its amplitude" (Castro, 2020, pp. 33-34).

In addition to information literacy, a recurrence in articles that unite Information Science with Digital Humanities is the use of techniques linked to research metrics, such as bibliometrics and scientometrics. Using scientometrics, Brasil Jr. and Carvalho (2020) use articles indexed in the Scielo database, from 2002 to 2019, in the area of Human Science, elaborating a mapping of these publications through a scientometric perspective. The authors explain the entire methodology and the results achieved with the analysis, but the article focuses on analyzing patterns in scientific publications. Brasil Jr., Carvalho, and Helayel (2021) also use scientometric techniques, initially

using the Scielo and Web of Science (WoS) databases to search for the main themes and research areas that use Celso Furtado's work and, subsequently, perform an analysis of the flow of access to entries (related to the author) that are available on

Führ, Bisset Alvarez, and Araújo's (2021) work analyze articles published in Information Science and Digital Humanities in three databases: Dimensions, WoS, and Scopus. Still, in the scope of Information Science, the article by Romeiro and Pimenta (2021) studies the theme of violence against women, using techniques and theories from Information Science and Digital Humanities. The authors justify the union of these two areas in the research by stating that:

> The variety of tools and the plasticity of the approaches taken when defining what to search for in the media and based on what criteria, together with humanistic issues around aspects and categories of analysis dealing with violence, sexuality, gender, and privacy, among others, transcend the boundaries of the Information Science (Romeiro & Pimenta, 2021, p. 116).

Coneglian and Santarém Segundo (2017, p. 89) approach *Europeana* as a digital humanities project "as it allows an integration between traditional cultural objects, with their representations in digital and virtual environments." They focus their article on the tools and languages used by this virtual library to organize knowledge (or their knowledge objects). Sousa and Anjo (2020) insert Digital Humanities within the area of tourism, also inserting the theme of literature, thus addressing literary tourism and its insertion within the digital environment. Like some articles from

Linguistics, Modern Languages, and Arts, the paper focuses on the work and life of the poet Fernando Pessoa.

4. CONCLUSION

With the growing consolidation of Digital Humanities as a field of study, publications on this theme have increased over the years. Its interdisciplinary character can be proven by the result of the search conducted here, which retrieved articles linked to History, Information Science, Sociology, Linguistics, Arts, Literature, Tourism, Psychology, and Journalism, among others. These articles insert the use of digital technologies in their specific areas and fields, describing and mentioning projects and, in some cases, specifying the digital tools employed. However, it is noted that even though some authors - such as Sousa (2018), Bomfim and Lucena (2019), and Waeny and Macedo (2020) - have chosen to index their work with the term "humanidades digitais", their articles fail to understand what this field represents.

Mentions of big data and distant reading are recurrent. Bibliometric and scientometric studies linked to Information Science are also recurrent. In the articles published between 2020 and 2021, there is mention of COVID-19, which in some moments becomes the central theme of the article and, in others, becomes a justification for the importance of Digital Humanities. Social media, formal and informal archives, documents, and literary works were some of the objects of the study found in the retrieved articles.

It is important to clarify that the work presented here brings a cut of the research related to Digital Humanities indexed in Portuguese. Since the space for the presentation of the results is limited, it was chosen to search only one database (in this case, one directory), which does not represent the totality of research conducted in the area.

Therefore, it is a suggestion for future research to expand databases to recover results, favoring even the information literacy of researchers interested in this theme.

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Déjàvu Project as a digital solution to Assist the appraisal of documents Focused on digital humanities

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Abstract
This article aims to analyze the DéjàVu Project as a complementary solution to the archival function of document appraisal in the digital humanities. It is exploratory and qualitative research with technical procedures related to the bibliographic study of digital humanities and documents. The digital solution refers to the combination of digital activities of data collection and cleaning, followed by organization and synchronization for later understanding and inference in various fields, including appraisal support. We concluded that using the solution developed in the DéjàVu Project has the potential to be used complementary to document appraisal. It provides a context substrate for a more accurate, pluralistic, and representative appraisal of social demands. It primarily facilitates the attribution of social values in the Macro-Appraisal process.

Keywords: document appraisal; digital humanities; DéjàVu Project

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1. INTRODUCTION

The Information Society was established in the 20th century with the development of computing-driven technologies (Capurro & Hjorland, 2007), which initiated a generalized process of redefining the world. In Archival Science, this was reflected in discussions on the theory, practice, and epistemology of science (Soares, Pinto & Silva, 2015) and also on the nature and purpose of the archive and the role of archivists and institutions in preserving documentary heritage (Eastwood & Macneil, 2016, p.7).

In Canada, Archivology found fertile ground for renewing its discourse, especially under the leadership of the theorist and archivist Terry Cook, within an approach that became known as Functional or Postmodern Archival Science and which also has names such as Brien Brothman, Rick Brown, Bernardine Dodge, Verne Harris, Eric Keteelar, Joan M. Schwartz, and Tom Nesmith, to name a few.

The Postmodern Archival Approach resides, according to Tognoli (2013), in Archivology, taking into account the sociocultural and ideological contexts of document production, which constitute assets for the construction of social memory. The same author argues that in this approach, the context is more important than the document itself since information registration has been endowed with symbolism, ideologies, and intersubjectivity since its creation, and these must be considered. As important as the context for understanding documents, postmodernists face two central questions, as Eastwood and Macneil (2016) and Cook (1997) point out: That archivists are agents in the formation of documentary heritage, and that archival theory must also be based on the context of production and use of information by users, instead of presenting itself as unique and static.

In this document, we propose as a background the Document Appraisal archival function, which refers to the detailed study of the uses of documents regarding the period in which they were produced to establish values and, based on these values, the periods of custody and the destination of the sets (disposal or permanent storage). The appraisal aims to maintain the administrative, tax, and legal capacity for the necessary time, vestigial probative and informative capacity, and the production of the documentary heritage of an organization or community. This ulterior purpose is directly related to humanistic interests since the trail of remaining documents allows society, based on the past, to act in the present and future, correct routes and social injustices, and exercise citizenship and social leadership. However, the archivist must know the document production and use context to carry out the assessment. In this context, digital technologies can streamline the process once done manually; or they can even generate patterns of social behavior that are auxiliary in understanding the context beyond that of the organizational production, that is, from external sources of information.

The DéjàVu project emerges as an initiative at Unicamp that uses content mining from different sources, on and off the web, to reconstruct contexts related to phenomena, objects, and specific places, followed by the organization of the material based on spatial and temporal coherence and, finally, opening space for different inferences regarding the content. Therefore, it is assumed that the survey of material related to the context through the digital solution can benefit the appraising of a set of documents. A problem that motivates this research is knowing which aspects of the DéjàVu Project can be used to appraise documents. Therefore, this article aims to analyze the DéjàVu Project

as a digital humanities solution that complements the archival function of appraising documents.

2. METHODOLOGY

Based on the purpose, the proposed research is mainly exploratory since it is a preliminary study to provide greater familiarity with the DéjàVu Project to aid the document appraisal process (Lakatos & Marconi, 2003). It also has a descriptive character, considering that the description of the conceptual aspects reflected upon their insertion in the dimensions of mediation is sought. The research can also be considered predominantly qualitative, given that it "deeps into the world of human action and relationship meanings" (Minayo, 1994, p. 22), a side best represented by the focus on subjectivity.

As for the technical procedures, this research is bibliographical, dealing with a "general overview of the main works already carried out, important, for being able to provide current and relevant data related to the theme" (Lakatos & Marconi, 2003, p.158). Therefore, it comprises a survey of information dealing with the Digital Humanities themes, especially from the perspective of the Digital Humanities Research Group of the University of São Paulo and the researchers Rodríguez-Yunta and Galina-Russel; and on Appraisal of Documents, from the understanding of Rousseau and Couture, Eastwood and Macneil, Trace, Schellenberg, and Cook.

Subsequently, the research was complemented with the technical procedure of a Case Study or Monographic, which starts by studying a representative case in depth and about its particular aspects (Lakatos & Marconi, 2003). In this article, the study refers to the Project "DéjàVu: Temporal, spatial, and characterization coherence of heterogeneous

data for integrity analysis and interpretation," here called DéjàVu solution, based on information published on the project's blog by the team of producers from Unicamp. Finally, from the reflections obtained by the thematic interlocutions and the software, an interpretative and reflective analysis was carried out, resulting in the present article.

3. DIGITAL HUMANITIES

Since the second half of the twentieth century, society has undergone a restructuring process driven by new information and communication technologies and the establishment of a dominant form of informational capitalism, which is reflected in various sectors of everyday life, such as the economy, the business world, work, culture, time, and space. Technologies mediated and facilitated the establishment of an Information Society, which, according to Castells (2016), acquired characteristics such as the use of information as an input, the penetration of new technologies, the connection of groups to achieve goals processed in networks and systems integrated and based on flexibility and dynamism.

Science has also used computing and digital technologies as a key to processing scientific information in general, even more so considering that first-hand sources began to be produced in digital media, and many of those found in analog media have already been digitized. Digital Humanities is an interdisciplinary field combining digital technologies with research and work in the humanities. The Digital Humanities "incorporate the methods, devices, and heuristic perspectives of the humanities and social sciences while mobilizing digital technology's unique tools and perspectives" (Grupo De Pesquisa Humanidades Digitais, 2021, online).

Some elements indicating the consolidation of this field, as Galina-Russel (2011) points out, are the formation

of associations, organizations, and specialized centers, graduate programs, publications, projects, and events. Overall, the objectives of Digital Humanities are:

> To create databases with digital resources relevant to the Humanities. This includes capturing, structuring, documenting, preserving, and disseminating data. 2. To develop methodologies for generating new elements derived from this data. 3. Generate research and knowledge to increase our understanding of the Humanities (Galina-Russel, 2011, p. 3).

The interest in the "Digital Humanities" label has been present in the social and cultural demand for humanistic sources; in the epistemological reflections of the humanities in terms of the evolution of these disciplines and the impact of new technologies; and because the word "humanist" denotes a defense of what is human, suggesting a humanization of technology. As Rodríguez-Yunta (2013) points out, the Digital Humanities arouse particular interest in the sciences that deal with information, especially regarding the creation of libraries, repositories, and digital archives for research in the humanities and the development of electronic resources for their access. Thus, the Digital Humanities are critical in safeguarding and preserving digital heritage.

Also in this context, the United Nations Educational, Scientific and Cultural Organization (UNESCO) brought in its "Charter on the Preservation of the Digital Heritage" the recognition that this heritage is composed of cultural, educational, administrative, or scientific resources, which contain technical, legal, medical, or other types of information originating from the knowledge or expression of human beings, created digitally or later converted to the digital format (UNESCO, 2003). In addition, this

document aimed at highlighting the awareness that access to digital heritage allows more excellent opportunities related to the creation, communication, and sharing of knowledge, including the risk associated with the disappearance of this heritage if its conservation is not treated as an urgent matter.

As the Digital Humanities Research Group (2021) pointed out, a common feature in Digital Humanities projects has been to provoke the relationship between traditional practices and new technologies. It is also worth noting that in the Information Society, the perspective of digital technologies combined with networks allows for an infinity of possible connections, which help provide information and enable the opening of new opportunities at a low cost to facilitate the optimization of traditionally carried out processes. Networked digital technology allows the segmentation of users, the maintenance of a multifaceted semantic context, and the phenomenon of mass self-communication (Castells, 2016).

Thus, information science, such as Archival Science, is special in understanding this contemporary social structure, digitally technological and structured in networks, and may represent a great engine for the Information Society and the Humanities in the 21st century. The Digital Humanities inserted in this context can provide instruments to enable greater agility in obtaining and applying informational inputs, ultimately favoring the achievement of humanistic objectives directly related to the records of human activities.

4. DOCUMENT APPRAISAL AS AN ARCHIVAL FUNCTION

Rousseau and Couture (1998) defined seven main archival functions (production, classification, appraisal, description, acquisition, diffusion, and preservation); however, we will

only bring the appraisal function to the center of the debate. The appraisal of documents emerges intimately linked to representation as it selects from the documentary background the representative part of this whole that will be kept for posterity and the part that will be discarded, thus being an essential task for the professional archivist. Carol Couture (2005, p.83) corroborates this understanding by stating that appraisal "is one of the most significant aspects of contemporary archival science: it is its "noble function," its central core.

According to Eastwood and Macneil (2016, p. 8), recent literature has given special importance to the role of archives in ensuring organizational and collective personal accountability "[...] on the one hand [due to] the scandals that resulted from the incapacity, from public or private entities, to provide an appropriate account of their activities through their documents," which denotes a concern that necessarily involves thinking about how activities are being represented and kept for reference; moreover, thinking about these activities long before the destination. However, before entering into the discussion on the appraisal of documents from the postmodern perspective, we must understand how this function appeared in the international literature.

According to Trace (2016), the first approaches to the subject date back to the end of the 19th century. Before the French Revolution, the appraisal favored the historical importance and the reduction of the documental volume, and it was not concerned with the administrative use of the documentation. In pre-World War I, England, there was an attempt to establish retention periods concerning the document's age, use, and integrity. The British Hilary Jenkinson, an influential theorist of his time, limited the archivist role in the appraisal to separating identical

copies. At the same time, the destruction of the material that could be eliminated would be decided by the producers at the production site. In Germany, at the beginning of the 20th century, according to Trace (2016), theorists Karl Otto Mueller and Heinrich Otto Meisner also studied the value of documents. They defined it as the age and location of the producer in the administrative hierarchy.

In the United States, in the 1940s, State Department Archives employee Phillip C. Brooks started to state that documents were related to their source activities, and knowledge of these relationships was the key to identifying formal and content similarities and their destination. For him, producers could learn about the usefulness of documents for administrative functions, and archivists could learn about the effectiveness of documents for historical research. His successor G. Phillip Bauer, in turn, defended the sole and restricted custody based on the frequency of use: Even if the document had historical importance, it should be discarded if its use did not justify the cost of keeping it (Trace, 2016).

It was in the 1950s that the American Theodore Roosevelt Schellenberg, also an employee of the State Department Archives, presented an appraisal theory that defined the bases for the modern appraisal of documents. Schellenberg's document appraisal approach was based on documents' primary and secondary values. Aware of the growth in document production, driven by government activity and the use of reproduction technologies shortly after World War II, Schellenberg (1973) defended the careful appraisal of documents as a solution to the storage problem and a facilitating instrument for erudite research. According to the author, the appraisal process should be based on the analysis of the values inherent to the documents: Primary, related to the interest it represents for the producing body

itself, for administrative, fiscal, and legal purposes; and secondary, relating to the use by other entities and private users, for purposes other than those for which they were produced. Secondary values, in turn, could be divided into probative and informative.

For Schellenberg (1973), the determination of document values did not meet general standards, although the general principles presented by him could guide it; such regulations should be applied with moderation and common sense, based on a deep analysis of the documentation and not on intuition. The archival professional, according to Schellenberg, should look for specialists to help them in the assignment of value, not without first doing the work of analyzing and describing the information contained in the documents; thus, the archivist would act as the moderator with the specialists; that is, they would be responsible for showing them that a careful selection would not imply damage to the research or the maintenance of the institution's memory.

Schellenberg theorized aiming at solving the government document proliferation issue from the mid-twentieth century onwards, and this approach proved to be effective for a long time; however, for contemporary archival science, this motivation may seem somewhat reductive given current discussions involving the public interest, social memory, and the role of archivists, which Schellenberg did not contemplate. As shown by Trace (2016), other appraisal theories emerged in the 1970s and 1980s, among which she mentions those by Brichford, Frank Boles, Julia Young, F. Gerald Ham, and Hans Boom, with an emphasis on the last two who signaled an initiative to broaden the appraisal scope. Ham's contribution was to suggest that the archivist's work should be more collaborative, look beyond its destination to the larger context of information, the social;

and recognize through archives those who had no voice in society; assumptions that were also part of Hans Boom's appraisal theory, called "The Documentation Strategy," according to which the document should continually be appraised with the society at the time in which it was created, with the importance that society attributed to them.

But it was with the advent of the digital document and postmodern discussions that two new Canadian appraisal theories dictated the discussion in the last decade of the twentieth century and on which this research intends to focus: The Social Theory of Appraisal, by Terry Eastwood, and the Macro-Appraisal, proposed by Terry Cook. The Social Theory of Appraisal is based on the idea that appraisal in a democratic society must be found on the uses to which documents were submitted by the producing society during the document's existence, integrating its immediate use in the past and current use; and which should meet citizens' needs to know about their identity and place, as well as serve as accountability for democratic governments. For Terry Eastwood, the best appraisal decisions are demonstrably based on the standards of the breeding society. Therefore, archivists would better use their time by dedicating themselves to understanding the immediate and situated use of the documentation to allocate (Trace, 2016, Couture, 2005).

Terry Cook, in turn, combined theory, strategy, and methodology to develop his Macro-Appraisal. Between 1989 and 1990, Terry Cook began theorizing about the appraisal of archival information with a new perspective without giving it a specific name. In the publication The Archival Appraisal of Records Containing Personal Information: A RAMP study with guidelines, presented to the International Council on Archives, Cook suggested that archivists should shift the appraisal focus from explaining

the reason for the disposal to justifying the number of records to be kept. According to Cook, as documents result from transactions involving people and a context, they reflect an image of society. An aggregate of personal documents should be kept if it refuted the "official" image created by an institution so that it could provide evidence to review the "official" picture. A preservation scheme should be created once these evidence values have been verified. This perspective, which reviews man's interaction with structures to capture dissonant voices, became the embryo of the Macro-Appraisal theory (Cook, 1991).

For Cook, a conventional appraisal was doomed to perform a microanalysis of the document or organizational structure. According to Trace (2016), Cook also rejected the idea that historical research producers and trends should be responsible for assigning some value to the document. With some influence from pioneers Gerald Ham and Hans Boom, Cook placed social values at the center of appraisal.

> In a single summary sentence, the macro-appraisal assesses the social value of the structural-functional context and culture of the workplace in which records are created and used by their creator(s) and the interrelationship of citizens, groups, organizations – "the public" – with this structural-functional context. Suppose the appraisal assigns the long-term value of the record content – or series of records' content – to their possible research values. In that case, the macro-appraisal will assess the significance of their creation and contemporary use context. A conventional appraisal is about records; the macro-appraisal is about its broader context (or "macro") (Cook, 2005, p. 102).

In documents referring to the Macro-Appraisal of Documents in the Canadian national archive system, drafted by Terry Cook and approved by Library and Archives Canada, the Macro-Appraisal is described as based on the context and contemporary use provided by social values, those which, in turn, are only understood in light of the interaction between administrative structures, business functions, and citizens.

> While no one can *objectively* know or state with complete assurance what the elements of societal value(s) are or have been within any given generation, archivists can develop appraisal strategies and methodologies that are most likely to provide a comprehensive documentary memory of what has transpired in society over time (Library And Archives Canada, 2001, p.4)

In summary, the idea is to research functional profiles and governmental structures and verify their impact on individuals so that it can document how the government operates and affects Canadian society. It is not intended to provide archival evidence as an end in itself (Library And Archives Canada, 2001).

According to Cook (1991, 2005), document appraisal is a co-creation of files, the exercise of power over memory; therefore, it requires an interventionist character from the archival professional, capable of identifying generic points of conflict and intersections between producers, socio-historical models, and clients or citizens in the structure. Given its importance, Macro-Appraisal should not be a routine procedure but a detailed work of archival, diplomatic, and historical analysis of functionalities, structures, values, systems, flows, and technologies and their presence over time. Therefore, macro-appraisal constitutes

an intellectual stage before micro-appraisal, which is the operationalization of the assessment itself (or traditional assessment, based on primary and secondary values).

In short, the main trends of Canadian postmodern approaches to appraisal are, according to Couture (2005, p. 100):

- Those proper to the National Archives of Canada: macro-appraisal, based on the appraisal of the institution (the context of creation) that precedes the appraisal of its documents (from the top down);
- Those that support the use of archives as a primary consideration for appraising documents;
- Those that support the importance of providing evidence of the whole of society; and
- Those proper to Québec insist on the essential role of a retention schedule closely and necessarily tied to a needs assessment.

In conclusion, new discussions on Document Appraisal have become part of the archival discourse and the international scenario from the postmodern perspective, involving accountability mechanisms that need to be incorporated into document management and those related to social memory. Such an arduous task, which requires knowledge of social dynamics, can benefit from using digital technologies such as the DéjàVu project, which we will see below.

5. THE DÉJÀVU PROJECT

As the scope of digital humanities and the Appraisal of Documents concept have been outlined, we can return to the purpose of this article, that is, analyzing how the DéjàVu solution can be a technological increment to the appraisal function to function as a digital support.

The project "DéjàVu: Temporal, spatial, and characterization coherence of heterogeneous data for integrity analysis and interpretation," here called DéjàVu solution, was created by Professor Anderson Rocha, from the Instituto de Computação da Unicamp. Inspired by similar projects from international universities, the idea behind DéjàVu is to retell what has already happened, therefore reconstructing visual and textual records linked to an event to interpret it better. The project works by mining content from different sources – on and off the web. This information from textual and audiovisual pieces is captured, synchronized, and organized around an event, place, or object. Finally, the organization of this data can provide a denser understanding of the object or fact, the order of events, and its relationship with people and other objects, and offer subsidies to checking facts and other purposes, such as the appraisal of documents (Ferreira, 2018). Figure 1 provides an overview of the project.

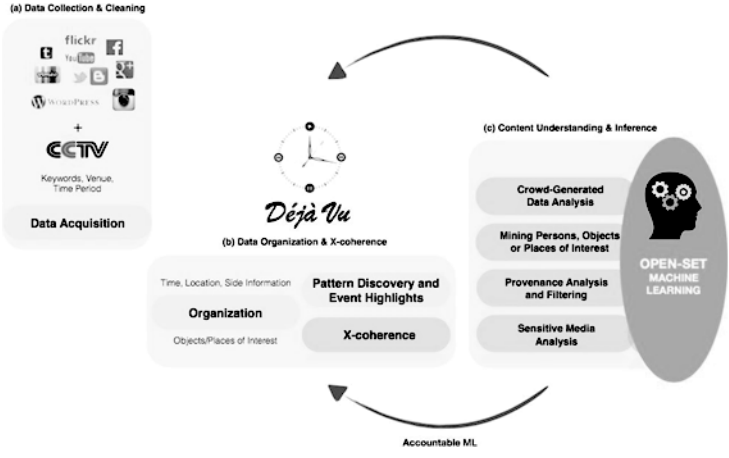

Figure 1. Déjàvu's project overview. Source: Rocha; Pedrini & Carvalho (2021, online).

Therefore, the structure of the DéjàVu project is divided into three main and interrelated strands, namely: A) Data Collection and Cleaning; B) Data Organization and Coherence X (data synchronization); and C) Understanding and Inference regarding the content. The data collection and cleaning strand, according to Rocha, Pedrini, and Carvalho (2021), refers to the acquisition of data itself related to a specific location, object, or event, which has been posted in various places (social networks, video security cameras, information collections) or that have been seized in operation or grouped for any other purpose.

The strand of data organization and coherence X (synchronization of events) consists of putting together the pieces of information on the previously chosen topic based on their spatial (geographical) and temporal (position in time) coherence, called Coherence X (being X, the topic to be analyzed). This step includes analyzing how to connect different information related to the event in the physical and virtual environment; how to synchronize the pieces in the temporal aspect; how to organize the pieces about the event (before, during, and after)

> With pieces consistent with topic X, we can: (i) look for specific clues (authorship, related topics); (ii) mine possible suspects, objects, or places of interest through biometrics and machine learning techniques; (iii) fake combat news and media reuse through provenance analysis methods; and (iv) evaluate sensitive content through various filters (e.g., violence), all based on open-set recognition techniques (Rocha, Pedrini & Carvalho, 2021, online).

This organized information and inferences will be used in strand C) Content understanding and inference. Therefore, in strand C) that we find scope for the Appraisal of Documents in an organization, as the correlations allowed by the software from a large quantity of data provide a substratum for evaluative decision-making.

Marino, Silveira, and Nicodemo (2020) highlight, for example, the use of the DéjàVu project together with the Centro de Humanidades Digitais IFCH-UNICAMP for the development of the Memória COVID-19 Brasil project, in which they corroborate to understand the tool affinity for Writing of Digital History around the global synchrony event of the COVID-19 Pandemic; mapping the circulation of publications, including false news or fake news; and the development of a relevance detection algorithm to help historians and archivists work with digital documents in large volumes (Big Data).

> The aim is to establish phylogenetic relationships within a database of publications based on crossing both the metadata of these records, such as authorship and date of publication, and the semantic analysis of the publication content. Using an identification tool specific to social networks and NoSQL data processing (Non-Structured Query Language), the aim is to map the circulation of news and rumors about the pandemic, making it possible to know when and how certain contents circulated, what reactions they engendered among users, and which audiences were most affected. As stated above, this tool will make preserving what should not be remembered possible but is no less important (Marino, Silveira & Nicodemo, 2020, online).

We believe in the software's potential not for writing history based on archival selections but as a support for selecting documentary sets based on different criteria. The main hypothesis we advocate is that to appraise documents, an organization needs to be equipped with an analysis of events, objects, and places of interest; and that their understanding can be maximized by software, such as that developed in the DéjàVu Project. This is because from the mining of varied data, inside and outside the organization, produced organically by other entities and correlated with data collected via crowdsourcing, it will be possible to understand the social context (in the form of behavior patterns, trends, and possible correlations) to make inferences about values than (in the case of Macro-appraisal, about social or macro-appraisal values, and in the case of micro-appraisal or traditional appraisal, about primary values – administrative, juridical, and legal – and secondary values – probative and informative) about what documents this organization should keep and for how long. However, it is not defended that software will replace a thorough human analysis; the solution is complementary to the traditional appraisal function and should be used to facilitate the process. Nor is the interventionist character of the archival professional working with the solution excluded, who can identify the generic points of conflict and exceptional interest in the structure.

It should be noted that the context becomes an essential element for Archival Science, an importance that extends to the Appraisal of Documents. Context can be understood as

> [...] the environment in which the action recorded in the document takes place. In analyzing the context of an archival document, the focus ceases to

> be the document itself and begins to encompass the entire structure surrounding it, that is, its documental, legal-administrative, procedural, provenance, and technological context. (Conarq, 2020, p.19)

We would also add to the above concept the relational context of the documents with the citizens who use the service, which is of special attention when dealing with public archives, as well as the sociocultural context in which the document transactions occur, implying power, customs, and interest relations that form the social fabric. Thus, the advantage provided by the DéjàVu Project is mainly presented regarding the digital tabulation of information that helps to understand the context in which certain activities and events are documented; and that, if collected manually, would take much more time and resources to be carried out. Therefore, it is also inferred that the DéjàVu Project can be especially beneficial in social analysis for the attribution of social values, which is a typical function of Macro-appraisal.

This is because the DéjàVu Project collects/mines the greatest amount of data on an event, given the parameterized sources for each event, to reconstruct it, check it, and retell it from various media so that it can, among other things, provide a basis for the archivist appraisal. The appraisal with this data tends to be more precise and suppress gaps in understanding about the phenomenon, clarify ambiguities, and make the impacts of events on citizens' lives more noticeable.

Let us take as a model the example of Rocha (2018), about the fire that devastated the Grenfell Building, in London, on June 13, 2017, for two days, resulting in 71 deaths at the time. The results of the survey of security cameras,

police vehicles, records posted online by residents, and other forms of coverage mined by the Project would facilitate police work and forensic work in understanding how the fire spread in a timeline, how each death followed, and whether there would be a need to investigate suspects concurrently with the investigations. Additionally, all the documentation derived from the episode and accumulated by public security agencies later would need to be evaluated, and for the appraisal to take place, the set of documents related to the event would need to be contextualized. Therefore, the DéjàVu solution would come as revisiting the media that portrayed the event, providing an overview of the event, posterior and diachronic to the time it happened. This panorama of the event, before, during, and after it, answers the questions "how, where, when, and who" was involved; that is, it makes it possible to understand the situation, which is crucial to the appraisal. Additionally, the algorithms to be developed by the system also allow the creation of relevant criteria to aid in selecting materials.

Thus, from a primary value assessment perspective, the set of administrative, juridical, and legal documents related to the event and the functions of the security agency in the anecdotal example would be observed; from a secondary value perspective, the probative and informative potential of the accumulated documents would be observed; and in the view of a macro-appraisal, the social values related to the importance of the building, considering the social commotion and the impact of the event for Londoners, for the history of civil construction and public safety, etc. All these aspects could be aligned with the media repertoire accumulated by the DéjàVu Project so that the attribution of values takes place with adequate density and informational precision.

As advocated in this study, the DéjàVu Project can potentially consider the phenomenon's impact on the organization and the informational density necessary to record the analyzed phenomena that should (or should not) be kept for posterity. Therefore, it is technically and epistemologically aligned with the needs of a postmodern Appraisal of Documents. By extension, it is also inserted in the Digital Humanities perspective since the purpose of Appraisal of Documents is, ultimately, humanistic, being linked to the creation of heritage and social memory and the strengthening of community identity. There is also a connection with Digital Humanities based on the assumption of the Digital Humanities Research Group (2021) that it would be provoking the relationship between traditional practices (in this case, appraisal) and new digital technologies, the latter as facilitators of conventional procedures.

Additionally, the same organization could use the fact-checking and possible false news appraisal process, as well as the original analysis of the materials it wants to incorporate into its collection, which is also functionalities made possible by the DéjàVu solution, but which we will not delve into in this study.

6. FINAL CONSIDERATIONS

The appraisal of documents has become one of the archival functions that comprise an issue to be resignified by Postmodern Archival Science. Not only because it is the function that allows selecting what will constitute the informational asset of an institution aiming at the best use of financial resources for its management and maintenance (which, in itself, is already a great responsibility that falls to the archivist), but also because the social aspect of this function started to be studied with greater focus by some

scholars. In other words, the appraisal of documents has been analyzed as a function that defines, on the one hand, which evidence of groups, organizations, and structures will represent the informational heritage of an organization or nation for posterity, and, on the other hand, which evidence will be relegated to oblivion.

To dive deeper into these discussions, it is assumed that digital technologies with a humanistic background can facilitate the appraisal and determination process of macro and micro values based on a better understanding of the social context. Among these technologies, this research sought to study the DéjàVu Project case. The digital solution developed by the DéjàVu Project refers to the combination of digital data collection and cleaning activities, followed by their organization and synchronization for later understanding and inference in various areas. Within the scope of an organization that seeks to appraise its documents, Project data mining is carried out internally and externally to the organization, providing administrative and social data that allow apprehending the context related to the production, processing, and use of documents as well as the impact of the activities recorded in the society in which the organization is located. Analyzing a set-in relation to a producing event, for example, answers the questions "how, where, when, and who" was involved, allowing disambiguation and filling in gaps that may exist after simple textual analysis.

Therefore, it is assumed that the solution can make the assessment more precise by suppressing gaps in understanding about the phenomena that generate the documents and clarifying uncertainties, as well as making the impacts of events in the lives of citizens more noticeable, contributing, to a second moment, so that the remaining

documents from the appraisal form a documentary heritage worthy of documenting the social memory, of documenting how organizations operate, and representing the identity of either that organization or, in the case of documents from public bodies, of society itself.

Despite the DéjàVu Project facilitating the apprehension of the context for the attribution of values, its primary function overall is to help define social or macro-value values, those typical of Macro-Appraisal and which refer to social criteria by which specific sets of documents must be maintained. This is because the Project comprises data mining that goes beyond the activities of the organization itself produced by external entities in various media, with diverse and plural interpretations of the events/phenomena that originated documents, which would allow covering more extraordinary nuances of the community and the maintenance of a heterogeneous documentary heritage, which would serve the creation, communication, and sharing of knowledge in the future – to the detriment, for example, of protecting only "the producer's version" or "an official version". Social analysis carried out traditionally would involve more time and resources than the time and resources employed when using the software. Even so, it might not have the same success in collecting and tabulating heterogeneous social information.

Finally, it appears that the solution developed in the DéjàVu Project can be complementary to the appraisal of documents, providing a context substrate to allow a more precise, plural, and representative appraisal of social demands.

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Digital humanities and visual project management: Use of tools in libraries

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ABSTRACT
This paper stemmed from the understanding that technological tools for Visual Project Management have been configured as a part to be investigated within the scope of Digital Humanities .Therefore ,it proposed identifying in the scientific literature whether these tools are used in libraries and what they are from a bibliographic survey carried out in the Web of Science database .This research is characterized as qualitative, exploratory ,descriptive ,and bibliographic .As for the results obtained, only one paper was identified that described the adaptation panels of the Notion tool for project management.

Keywords: digital humanities; visual project management; tools; library

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1. INTRODUCTION

The advancement of information and communication technologies has changed the behavior, use, treatment, and processing of data and information. New forms of communication and decision-making have been provided with the advances of the digital world, generating a new form of interaction between people and technologies. In this scenario of challenges and possibilities, with the introduction of these technologies in research in Human and Social Sciences, as well as social-cultural changes caused by the protagonism of the digital in today's society (Kirschenbaum, 2012). This developing phenomenon is called Digital Humanities, and, according to Kirschenbaum (2012), it assembles various discussions related to the digital environment and humans.

The working groups of the *Network for Digital Methods in the Arts and Humanities* (NeDiMAH) delimited typologies of research in Digital Humanities (Guerreiro, 2017), one of them being that of *Information Visualization*, which integrates different types of interaction, technologies, and tools for visualizing information, whether for descriptive or analytical purposes. Visual Project Management refers to a set of actions, tools, and models that aim to promote greater visualization of the project development process (Teixeira, 2015). In the study by Viola (2019), which depicted the librarian performance regarding their maturity in project management, the author identified that most of the librarians in the studied sample used agile methodologies configured within visual project management: Kanban and Canvas.

Therefore ,given the above ,by understanding that technological tools for Visual Project Management have been configured as a part to be investigated within the scope of

Digital Humanities ,the present paper proposed to identify in the scientific literature if these tools are used in libraries and what they are. A bibliographic survey was carried out in the Web of Science database.

2. SIGITAL HUMANITIES AND INFORMATION AND VISUALIZATION

Digital Humanities may be considered "a new way of approaching research in humanities and science, particularly, crossed by the technological imperative" (Moura, 2019, p. 60). According to Moura (2019), this field of research has become possible due to the expressive digitization of data masses, adding to the need to compress the nature of the data obtained, expand collaborative research, and change the scientific production chain. Andrade (2020) stated that Digital Humanities might be defined as the use of digital technologies for humanistic doing; however, it goes far beyond "understanding the impact of technological innovations on academic research, as well as seeking to determine which methodologies, theories, and practical procedures need to be reviewed for their development" (Santos & Venâncio, 2017, p. 06).

According to Kirschenbaum (2010, p. 56):

> Digital Humanities, also known as humanities computing, is a field of study, research, teaching, and invention related to the intersection between computing and the disciplines of the human sciences. It is methodological by nature and interdisciplinary in its scope. It involves investigation, analysis, synthesis, and presentation of information in electronic format. It studies how these media affect the disciplines in which they are used.

To Pimenta (2019), the significant thematic variety around Digital Humanities configures as a fact. The author highlighted that its richness in Brazil is still unknown to many because the academic production in Digital Humanities still does not dialogue much with other works of digital humanists to discuss productions, ideas, questionings, and concepts. In Library Science and Information Science, as products and services derived from information retrieval systems converged into the digital environment, Digital Humanities also began to integrate them (Andrade, 2020).

According to Paletta (2018), this integrative movement was due to the creation of digital sources being an irreversible trend in our increasingly connected society, leading to discussions about the challenge of introducing new methods, models, and approaches for conducting research mediated by these technologies. The working groups of the *Network for Digital Methods in the Arts and Humanities* (NeDiMAH) delimited typologies of research in Digital Humanities (Guerreiro, 2017), namely:

- Space and time: studies addressing the visual representation of complex data, network analysis, mobile computing, and the semantic annotation of places, times, and events.
- Information and visualization: integrates different types of interaction, technologies, and materials for visualizing information with descriptive or analytical purposes.
- Linked data and ontological methods: includes studies dedicated to the development of tools that favor the publication of structured data in an open, collaborative, and accessible environment, with the application of ontologies to projects for semantic definitions and the indication of other actions to be implemented to aggregate a large number of diverse and dispersed sources into a coherent data set.

- Building and developing collections of digital data for research: contemplates making digital or digitized collections available in the Web environment and using digital technologies in all phases of digital editing.
- Using large-scale text collections for research: studies addressing the use of tools and methods for analyzing and mining large and complex data sets, allowing the extraction of patterns and hidden data.
- Scholarly Digital Editions: investigates digital editing arising from large-scale digitization programs and editorial initiatives" (Andrade, 2020, p. 445-446).

This article addresses the bias related to information and visualization. According to Gonzalez Aguilar and Paletta (2020), visualization is defined as the communication of information through graphic representations. Images have been used as a communication mechanism long before spoken or written language. A single image may contain a large amount of information and may be processed faster than a page of text.

3. VISUAL MANAGEMENT OF PROJECTS AND LIBRARIES

Project management is an increasingly growing field deployed in public and private institutions. According to Silva Júnior, Ferreira, and Salcedo (2019, p. 443), "the growing number of studies on project management, understood as a tool in organizations, points to the need to specify how it takes place in the various organizational environments, given that the instruments and techniques must be adapted to the different realities encountered".

However, as Massis (2010) stated, distinguishing projects from routine activities is necessary when identifying

library work that should use projects. According to the author, much of the work carried out in libraries is framed as an operation; however, when there is work that involves the building and implementation of new technologies, the reorganization of strategic goals, or any other work to expand the boundaries of the library beyond its daily operational flow, the project approach should be adopted.

Cobo-Serrano (2016) understood that project management is one of the necessary demands for librarians since it allows strategic alignment with operational planning and, thus, promotes the achievement of the expected result according to the strategies and plans were drawn up. Valauskas (1988, p. 1) realized that project management is directly related to the mission of libraries by its definition of "planning, organization, monitoring, and control of resources to meet a single goal". Spudeit and Fenherof (2017) stated that good practices in project management allow reducing costs, improving quality controls, and optimizing resources and efforts. With an emphasis on information units, which "are increasingly viewed as service-providing organizations, the main input of which is information that adds value to institutions and intellectual capital formation" (Silva Junior, Ferreira & Salcedo, 2019, p. 429).

Thus, it is possible to realize the relationship and importance that project management makes possible for the management of information units to improve the provision of their services and the offer of their products. However, several factors influence the achievement of success in project management, some of them being organizational culture, communication, methodologies, techniques, tools, documentation, training, and professional qualification (Pmi, 2017; Viola, 2019; Kerzner, 2016; Silva Junior,

Ferreira, & Salcedo, 2019). Massis (2010) understood that adopting methodologies for project management might contribute to solving planning problems and monitoring goals, which would lead to project failure.

Some studies highlighted and reported how the use of project management methodologies contributes to achieving the goals set in the projects. Dulock and Long (2015) and Stanley, Norton, and Dickson (2003) described different methods; the first addressed how using the Scrum methodology contributed to the digital collections development project at the Library of the University of Colorado. The latter reported on using the PRINCE 2 methodology at the Library of the University of Leeds, just as Carpenter (2011) addressed the PRINCE methodology for libraries, archives, and museums.

Stanley, Norton, and Dickson (2003) reported that one benefit of using methodologies is reducing the administrative burden for the project manager. According to the authors, it may even be that in the first project, the time required for management to apply the methodology is longer; however, as one gains experience, one will obtain time optimization. The non-use of a method will inevitably lead to a more significant overload in project management time.

Kachoka and Hoskins (2017) described the use of PMBOK in the renovation project of the physical space of the *Chancellor College Library of the University of Malawi*. The project was considered successful, although it faced financial, human resources, and time constraints. They were guided in part by the PMBOK recommendations; however, they did not follow a standardized approach as was the initial goal, nor did they use an adequate methodology since the PMBOK is not a methodology but a body of knowledge as a guide. Therefore, they emphasized the importance of

adopting methods and techniques to guarantee the success of a project throughout all its stages and recommended using simple and flexible approaches according to the reality and size of the libraries.

Faced with this perspective is a landmark in project management: the Agile Manifesto[1]. In 2001, 17 renowned software development professionals met in Snowbird, Utah, USA, and discussed problems faced in software projects that lead to failures and delays. As a result of this meeting, the Agile Manifesto emerged, containing four priority values relative to others: 1 – Individuals and interactions over processes and tools; 2 – Working software over comprehensive documentation; 3 – Customer collaboration over contract negotiation; 4 – Responding to change over following a plan.

These values unfold into twelve principles: 1 – Our highest priority is to satisfy the customer through the early and continuous delivery of software of value; 2 – Accept changes in requirements, even at the end of development. Agile processes adapt to changes so the customer obtains competitive advantages; 3 – Deliver working software frequently, on the scale of weeks to months, preferably shorter periods; 4 – Business-related people and developers must work together daily throughout the project; 5 – Build projects around motivated individuals. Giving them the necessary environment and support and trusting that they will do their job; 6 – The most efficient and effective method of transmitting information to and within a development team is through a face-to-face conversation; 7 – Functional software is the primary measure of progress; 8 – Agile processes promote a sustainable environment. Sponsors, developers, and users must be able to maintain

1 Available at http://agilemanifesto.org/

constant steps indefinitely; 9 – Continuous attention to technical excellence and good design increases agility; 10 – Simplicity: the art of maximizing the amount of work that did not need to be done; 11 – The best architecture, requirements, and designs emerge from self-organizing teams; 12 – At regular intervals, the team reflects how to become more effective, then adjust and optimize their behavior accordingly.

From these values and principles, project management methodologies and techniques were developed using visual, interactive, and simplified tools (Highsmith, 2004), and they were assigned the nomenclature of Agile Project Management. This approach was included in the sixth and most recent editions of PMBOK. The primary motivator of the expansion and consolidation of Agile Project Management was the fact that traditional practices began to present limitations when used in dynamic environments with high levels of uncertainty and constant changes, in which a project is hardly executed according to the initial planning (Dawson & Dawson, 1998; Williams, 1999; Perminova; Gustafsson; Wikstrom, 2008; Steffens; Mastinuso; Artto, 2007).

Albino, Souza, and Prado (2014) reported differences between agile and traditional approaches based on their quantitative and qualitative focuses. Quantitatively, agile methods utilize only the necessary processes, plans, and control to realize a project, moving on to project execution and value delivery to the customer. In other words, their planning is the minimum necessary for an execution more aligned with the interest of those involved in the project. Qualitatively, these approaches are based on adaptive systems that view the project as a non-linear delivery and changes as something natural, unlike traditional methods, which understand projects as linear and mechanical works.

Teixeira (2018) explained how information visualization impacts the planning, execution, and monitoring of projects, highlighting Visual Management as a project guide, as it allows those involved in projects "to visualize and understand the project, rendering the situation more transparent and helping to prioritize and improve what is necessary" (Teixeira, 2019, p. 33). "The need for qualified, standardized, and easy-to-use information makes the user interface a fundamental part of project management models" (Teixeira, 2018). With this focus, Teixeira (2018) proposed a new model for project management, aiming at the understanding and clear monitoring of project development processes concerning the visualization of the stages, activities, and tasks to be carried out through information visualization.

In projects, it is common for some weaknesses to appear, such as a lack of clarity in the functions and responsibilities, lack of initiative, lack of creativity, lack of innovation, poor communication, excessive bureaucracy, and difficulty coordinating between departments, allowing conflicts arising from misunderstandings, communication failures, interpretation errors, frustration, and disputes, which consequently hinder the evolution and productivity of the team at different levels: organizational, procedural, departmental, sectoral, and individual (Teixeira, 2018).

It is in this sense that Sibbet (2013) defended the advantage of making syntheses visually so that global thinking is facilitated through mapping ideas, locating patterns, and making comparisons so that designers, data analysts, decision-makers, and other interested parties may focus their cognitive and perceptual attention from the visualization of information. Visual management is creating a well-organized workspace that eliminates information deficits (Galswortg, 2005, p. 10), and visual project management

is a set of actions, tools, and models that aim to promote greater visualization in the project development process. Viola (2019) identified that most librarians in their studied sample used agile methodologies configured within visual project management: Kanban and Canvas.

Kanban is a term of Japanese origin that may be translated as "signboard" or "billboard". It emerged from the card systems used in manufacturing industries, the purpose of which was managing the workflow through development organization. With its signaling mechanism, it aims to present a work-in-process activity. It has been applied more to software development projects and has gained space in other project areas with the expansion of the agile methodology. It considers three phases: to-do, doing, and done. By separating these phases on a board, activities are circulated according to these divisions. Its benefits are directly related to the agile approach: planning flexibility, agile development cycles, continuous and incremental deliveries, development efficiency, favored communication, priority setting, simplified use, and cost reduction.

Canvas: Its main characteristics are the graphic format and the use of scratch pads that serve as a tool for recording the fundamental activities of the process, promoting the reuse of information from one project to another, and having an area with specific goals to be completed by the team. The model considered pioneering that suggests using Canvas in projects is the model by Finocchio Júnior (2013), called Project Model Canvas (PMC). The author emphasized using the model in the context of building the planning for a project as an alternative to the traditional project management plan. It is organized into thirteen areas referring to basic concepts of projects, divided into five blocks containing six questions in the following sequence: Why? Refers to the project's

justifications, goals, and benefits; What? Refers to two fields: the product and its requirements; Who? Addresses the main people involved in the project, divided into *stakeholders*, external factors, and project team; How? Defines project premises, deliverables, and constraints; When and how much? Refer to the risks, timeline, and costs of the project.

According to Finocchio Júnior (2013), two premises must be met for using the PMC model. First, the project plan must be built together collaboratively with the integration of project participants. And the other premise is the need for it to be carried out by a team in which at least one member has basic knowledge about project management so that there is better dissemination, knowledge, and use of good practices. According to Morais *et al*. (2017), the specific Canvas for innovation projects is the Innovation Project Canvas (IPC) created by a Brazilian company, which has several boxes that may be filled by using post-its or writing directly in the appropriate places, namely: problem, necessary resources, financial analysis, idea, risk and uncertainties, alternative solutions, and action plan.

Currently, it is possible to find a variety of digital tools and systems for managing projects and monitoring their processes (ClimbApp, Miro App, Trello App, Nialli, Pipefy, Asana), focusing primarily on the ease of decision-making to streamline the activities to be executed and strategies to be aligned. As such, these tools use knowledge areas such as Information Design and User Experience (UX) to design the dashboards that best meet the informational needs of the teams involved. Therefore, it is necessary to identify whether libraries and librarians have used such Visual Project Management tools to better understand the visualization of information in the project approach from the perspective of Digital Humanities.

4. METHODOLOGICAL PROCEDURES

The present research has a qualitative approach, as it does not have a statistical focus for its primary analysis (Haguette, 1995). It is characterized as descriptive because it intends to describe the characteristics of the problem pointed out (Richardson, 2015), exploratory due to the intention of knowing a particular subject better (Richardson, 2015), and bibliographic, given that as its objective, it is a bibliographic survey.

To identify the digital visual project management tools used in libraries or by librarians reported in the scientific literature, a search was carried out in the Web of Science database with the following search strings: 1) "project management " AND "libraries" AND "tools"; 2) "libraries" and "visual management". Filters related to Information Science and Library Science were included in all databases. The period selected for the search was January 01, 2000, to December 31, 2021.

From the recovered data, articles that related visual management in libraries to using project management tools in libraries were selected according to the information in the titles and abstracts. After this identification, the articles were read fully to identify the tools described. The following section presents the results found and their analysis.

5. RESULTS

First, the search was conducted with the search string "project management" AND "libraries" AND "tools", selecting all fields for the search and the period from January 01, 2000, to December 31, 2021, together with the application the Information Science and Library Science filter, allowing the retrieval of 16 articles. After reading the titles and abstracts

to identify the articles that addressed, more specifically, visual management, project management, and libraries, eight articles were selected for full reading to determine what was exposed about using a visual management tool for digital projects, as shown in Box 1.

Then the search was carried out with the search string "libraries" AND "visual management", selecting all fields for the search and the period from January 01, 2000, to December 31, 2021; this, together with the application of the Information Science and Library Science filter, made it possible to retrieve only one article, which was selected for reading in full. Thus, a total of nine articles were selected for full reading so to identify visual project management tools used in libraries or by librarians. Table 1 shows the reference of each of the selected papers.

Table 1. Articles Selected from the Web of Science database (Source: Prepared by the authors).

	Articles selected for full reading – Web of Science
01	Zhang, Y., & Bishop, C. (2005). Project-Management Tools for Libraries: A Planning and Implementation Model Using Microsoft Project 2000. *Information Technology and Libraries*, 24(3), 147-152.
02	Calvert, P. (2004). Project Management: Tools and Techniques for Today's LIS Professionals, *Online Information Review*, 28(5), 381-382.
03	Erik T. Mitchell. (2018.) Lightweight Tools and Dashboards for Program Management in Libraries, *Technical Services Quarterly*, 35(1), 68-82.
04	Carranza-Diez, K. E.; Arquero-Aviles, R. & Alberdi-Zubiaurre, E. (2021) *Ibersid-Revista De Sistemas De Informacion Y Documentacion*, 15(2), 37-46.

	Articles selected for full reading – Web of Science
05	Porter, S. (2019). Project management in higher education: a grounded theory case study. *Library Management*, 4(5), 338-352.
06	Russell Michalak & Monica DT Rysavy. (2020. Gerenciando Projetos Remotos Efetivamente com um Painel de Ação, *Journal of Library Administration*, 60(7), 800-811.
07	Chang, M. (2010). An Agile approach to library IT innovations. *Library Hi Tech*, 28(4), 672-689.
08	Melissa Bauer & Sara Klink. (2021. Two Libraries, One Synchronous Workshop *Series: Creating a Shared Learning Experience, Technical Services Quarterly*, 38(1), 54-63.
09	Shen, Y. (2018). Library Space Information Model Based on GIS — A Case Study of Shanghai Jiao Tong University. *Information Technology and Libraries*, 37(3), 99-110.

According to the results obtained, there was little literature on the topic researched from the perspective of Information Science due to the low number of items retrieved and selected. According to Viola (2019), there is a significant gap in the literature on Information Science and Library Science and Project Management, very little literature, thus being a field to be further explored. It should also be noted that no article was retrieved written by Brazilian authors or referring to project management or visual management in libraries in Brazil. From the reading of the selected articles, no indication or reference to digital visual project management tools was explicitly found. Some papers, such as those by De Zhang and Bishop (2005) and Michalak and Rysavy (2020), reported using the tools MsProject and Notion; however, none of them was whol-

ly aimed at the visual project management mode but had screens with dashboards for following up and monitoring project activities and actions.

In this sense, we highlight the article by Michalak and Rysavy (2020), in which the authors described the entire process they carried out in Notion to create the Actio Dashboard to facilitate the visualization of high-level tasks for everyone in the team as problems were occurring such as missed deadlines by some of the members, and variety of projects occurred simultaneously, making it impossible to have clarity and certainty of the status of a given project; consequently, the team faced difficulty in future planning due to lack of clarity in project schedules. Thus, the solution visually organized and prioritized the information regarding the tasks in progress, status, date and time requested by the manager, the person responsible, priority, requested by, task, last updated, last updated by, project, deadline, manager's comment to the team, and clarity of directions. According to the authors, using these panels in the Notion tool enabled better compliance with deadlines by the team, ease of understanding, and progress of the project by all involved. It should be noted that the paper reported was because the library service became home-based due to the COVID-19 pandemic, requiring a new way to manage library projects.

In the paper by Bauer and Klink (2020), tools for sharing content in digital environments by video, audio, and text were mentioned to help create websites; however, no project management tool was described. The study by Mitchell (2017) described tools the authors used to create dashboards for following up and monitoring projects, including Google Sites, Google Docs, and Google Script platforms. In this paper, the author highlighted the relevance of information visualization for better communication by the project

team, facilitating its management from the most strategic to the operational level and prototyping panels and tools stemming from other existing ones. In the other selected papers, descriptions and reports on using tools in library project management were not identified, especially regarding visual management.

6. FINAL CONSIDERATIONS

It was noticed that both project management and visual management are still poorly addressed topics in Information Science and Library Science, thus requiring further studies on this theme. Regarding the identification of visual project management tools in libraries, the closest found was the adaptation of panels in the Notion tool for the project management of the Hirons Library & Learning Center (HLLC) and the Office of Institutional Research & Training (OIRT), reporting benefits of this approach for strategic and operational decision-making and planning of their projects.

Thus, it is concluded that research on visual management of projects and libraries is relevant, both for being an approach that optimizes its management and for understanding how this new dynamic happens from the perspective of Digital Humanities. Therefore, we suggest future similar studies conducted in other databases and surveys through questionnaires and interviews with library managers and teams to identify the use of such tools and their informational flow regarding the Digital Humanities.

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Digital Humanities and university Extension in information science

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ABSTRACT
At the beginning of the twenty-first century, the understanding, effectiveness, and influence on society of issues related to information and its flow are increasingly sought, taking into account not only documents but also subjects, behaviors, and people, among others. Several areas of knowledge have given attention to this phenomenon due to its fast, instantaneous, and punctual social impact, favoring those with a greater understanding to use it according to their needs. Digital humanities, in dialogue with Information Science, are a transdisciplinary opportunity to contribute collectively and consciously to future generations, starting with the present in the face of past experiences, but without making the same mistakes, and also contribute, through ethics, respect and humanity, to the reduction of social inequalities using technological and digital tools. Thus, we dialogue with this study, presenting a possibility of practical action in Digital Humanities in the socially vulnerable community. Through university extension, the articulation between the academic community and the external community, through a relationship of equal rights and duties, promotes a cultural and scientific educational process, which, reaching awareness, allows the territory and society to be transformed and the academic world itself.

Keywords: digital humanities, information science, university extension, emancipation, democracy

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1. INTRODUCTION

On a global scale, today's society has been identifying itself with the information flows integrated into the private and public spheres connected to the financial market. However, with various inconclusions about its epistemology, meaning, and social intervention in a sustainable planetary and civil manner. More and more, the "study of information, its production, circulation and consumption assumes crucial importance" (Kobashi & Tálamo, 2003, p. 8), and given its complexity, it demands a conceptual elaboration that enables sociopolitical and economical alternatives to the contemporary society of the century we are entering, emphasizing the need for each area to recognize its specific object in information, clarifying its interpretation beyond functionalist mechanics and its indecisions (Kobashi & Tálamo, 2003).

At the beginning of the twenty-first century, the understanding, effectiveness, and influence on society of issues related to information and its flow are increasingly sought, taking into account not only documents but also subjects, behaviors, and people, among others. Several areas of knowledge have given attention to this phenomenon due to its fast, instantaneous, and punctual social impact, favoring those with a greater understanding to use it according to their needs. Most users who access pieces

of information interpret them according to the "reading" of those who intentionally reproduced and disseminated them with particular or collective interests, that is, a single piece of information can be passed on with different meanings and according to each region's culture.

Information is compelling and can standardize or emancipate people; therefore, it is essential to understand it with all its processes, flows and possibilities in the most varied areas, aiming at planetary and humanitarian sustainability. "Both Social Sciences and Media Sciences deal today with many aspects that, for Information Science, are understood under specific perspectives, corresponding to the relevance of information in society" (Capurro, 2014, p. 14), making it necessary to perceive this phenomenon critically in all spheres of social life. The search for this understanding in Digital Humanities (DHs) is already happening:

> For David M. Berry, the dispute about the greater or lesser benefit that the humanities can obtain from the permanent change of digital technology is exposed; the increase in research in the human sciences that uses instruments, processes, methodologies and records derived from computer technology is also evident. These developments are, of course, variable, depending on the disciplines that carry them out and how they use digital technology. 'Digital humanities,' with huge databases and virtual libraries, are not exactly behind this reconfiguration of knowledge (Cuartas, 2017, p. 71).

Technological advances are increasingly evident and decisive in our society. In the last century, advances encompassed photography, radio, credit cards, refrigerators,

smartphones, GPS, automatic doors, social networks, X-rays, and solar energy. We entered the twenty-first century with the arrival of Artificial Intelligence (AI) and, along with it – as the uninterrupted scientific advance – questions, doubts, and reflections do not cease to appear: is humankind prepared for this further transformation? How will society be organized, will there be jobs for everyone? Will robots replace human beings? Will access be for everyone or just for a portion of the population? What will be the consequences for planetary sustainability?

According to Harari (2018), billions of people may be irrelevant to the labor market in up to 20 years, as machines and robotics will change the current professions significantly; most people worldwide have no idea what the job market will look like in 2050. "So are we on the verge of a terrifying social upheaval, or are such forecasts yet another example of ill-founded Luddite hysteria?" (Harari, 2018, p. 28).

> Fears that automation will create massive unemployment go back to the nineteenth century, and so far they have never materialised [sic]. Since the beginning of the Industrial Revolution, for every job lost to a machine at least one new job was created, and the average standard of living has increased dramatically.[1] Yet there are good reasons to think that this time it is different, and that machine learning will be a real game changer (Harari, 2018, p. 40).

Social elements exist in all historical phases of the construction of information systematization processes. However, we are currently experiencing a social paradigm where social networks are relevant in exchanging, understanding,

and using information. Large companies that work with digital technologies collect data on their users and use them as capital to be negotiated according to whoever buys this documentary record's interest, need, or project. As this situation is in full development, it is necessary to be ready for the exercise of critical analyzes of this historical situation, accompanying "this process with critical interdisciplinary studies that show positive and negative forms of the impact of digital capitalism on different societies, as well as at the global level" (Capurro, 2014, p. 14).

> The so-called New Information and Communication Technologies (ICTs) open up new ways of being with others. We are no longer the same, and in this ontological sense, ICTs, like all technologies, are not neutral. However, neither do they inexorably present us with a utopian or dystopian future (Capurro, 2014, p. 11).

The current society has been identified as an information society. This recognition was confirmed with information technology becoming expressive given its digital nature and occupying a prominent place in economic development in political performance with capital, work, and its inputs from its increasingly constant global impact. The way of obtaining, storing, and disseminating information has been expanding its meaning, importance and social impact, hence the importance and need to understand the use of DHs, which seeks an ecologically sustainable society focused on planetary citizenship with social awareness. "They emerge as an interdisciplinary field willing to shelter the reflections and practices raised by the changes resulting from the introduction of digital technologies in the

universes of culture and Information Units" (Almeida & Damian, 2015, p. 8). Thus, the emergence of DHs points to a change in the communication process from traditional technologies to contemporary sociocultural discussions, which are more than discussions about tools and theoretical, philosophical, and social issues that address the humanities.

Given these considerations about social and technological advances based on information, this study reflects on the possibilities of social advances based on obtaining, storing and disseminating information with DHs along with Information Science (IS), pointing out possible action and social impact utilizing university extension, through the experience of the extension program of the Department of Information Science at the Universidade Federal de Santa Catarina. The reflection is based on possible concepts of DHs and IS, presenting a practical experience of university extension as one of the possible actions in DHs, with the differential of being carried out outside the university physical space and within the socially vulnerable community.

2. INFORMATION AND INFORMATION SCIENCE IN DIGITAL HUMANITIES

There are increasing studies on Information, Information Competency and DHs and their real meanings, influences and importance in society as scientific knowledge that enables vulnerable communities to be socially transformed. The interdisciplinarity made possible by knowledge information has been growing year by year, and its use has been appearing not only as something informative but also as

privileged influence tactics.[1] Its use and reuse in various ways, by different people and institutions, with a multitude of interests that can be personal or collective, personalized or standardized, targeted or generalized, confuse the role of Information Science in society, giving rise to the questions: what is the role of Information Science in society? Who is it serving? With what intentions?

In 2015, UNESCO contributed to the understanding of this question by declaring September 28 as the International Day for Universal Access to Information, strengthening a right that is in several countries' legislation to provide information seeking to endorse democracy and raise political awareness and equal rights confirming the importance of information as a "basic condition for economic development along with capital, work and raw materials, but what makes information especially significant today is its digital nature" (Capurro & Hjorland, 2007, p. 149).

The beginning of the twenty-first century is marked by globalization, from technologies and their impact power, characterizing the contemporary moment as an Information Society.

> The impact of information technology on the natural and social sciences in particular has made this everyday notion a highly controversial concept. [...]

1 Influence tactics privileged by the ability that information has, in an interdisciplinary manner, to enable power to its holder, creator, and disseminator. According to Sandra Braman (2009, pag.11), "the definitions of information fall into several groups: information as a resource, as a commodity, as perception of pattern, as a basin of possibility, as an agent, and as a constitutive force in society," thus, the information can be interpreted and reinterpreted from different angles and emphasized according to the interest of those who disseminate it.

> The fact that the concept of knowledge communication has been designated by the word *information* seems, prima facie, a linguistic happenstance (Capurro & Hjorland, 2007, p. 149).

The primordial concept of a word takes us back to its history with its events, intentions, and meanings, from its specific and temporal contexts, until reaching the present day, where the complexity of information transits through several areas of scientific knowledge and in different fields such as physics, mathematics, biology, philosophy, sociology, and technology. "For a science like information science (IS), it is, of course, important how fundamental terms are defined; and in IS, as in the other fields, the question of how to define information is often raised" (Capurro & Hjorland, 2007, p. 149).

Even having its beginnings based on the theory of information and cybernetics, it is necessary, when thinking about the meaning of the word 'information,' to consider, in an objective, clear and conclusive manner, several parameters because of the innumerable situational and interpretative possibilities, whether semantic or not, evaluating different perspectives that may or may not be decisive for the whole information process. For Capurro & Hjorland (2007), there is a tension between a subjective approach and an objective one, and the concept of interpretation can be the bridge between these two poles; however, it is necessary to take into account the variety of professions involved, understanding that "the most important thing in IS (as in information policy) is to consider information as a constitutive force in society and, thus, recognize the teleological nature of information systems and services" (Braman *in* Capurro & Hjorland, 2007, p. 151).

> Discussions about the concept of information in other disciplines are very important for IS because many theories and approaches in IS have their origins elsewhere. [...] Starting with an objectivist view from the world of information theory and cybernetics, information science has turned to the phenomena of relevance and interpretation as basic aspects of the concept of information (Capurro & Hjorland, 2007, p. 150).

Since every information system is destined to support the production, collection, organization, interpretation, storage, retrieval, dissemination, transformation, and use of knowledge, Capurro states that "information is not something that connects two cognitive capsules based on a technological system" (Capurro, 2003, p. 10). Still, it is conceived within the framework of a concrete social group and for determined areas.

> Born from the post-World War II information explosion, IS is strongly conditioned by technological determinations and strategic interests. At first, it finds itself better served by the references of the exact sciences. IS comes closer to the social sciences from the 1970s, with the "discovery" of the user. But it only achieved a profound approach to the social element in the 1990s (Araújo et al., as cited in Pimenta, 2020, p. 09).

The concept of information has always been connected to its historical time, and it is connected to several areas, never being isolated. Each has less or more explicit objectives and policies that pervade the reflection of the social context in which it is found. The more globalized, the less evident the specificity of the information of informing. Activities

in IS should be based on and attentive to the social and cultural impacts of the interpretive process since "information is not a phenomenon that appears with modern technology but rather the product of complex interactions between technology and culture" (Capurro & Hjorland, 2007, p. 174).

Knowledge is always connected to action, with its consequences regarding the cognitive and practical processes related to the search for scientific information stored on computers (Capurro, 2003). Thus, it is necessary to consider Library and Information Science and documentation as predecessors of IS, which was born in the mid-twentieth century. "Information science has, so to speak, two roots: classic library and information science or, more generally, the study of problems relating to the transmission of messages, and the other is digital computing" (Capurro, 2003, p. 6).

Since the beginning of the last century, Library and Information Science and documentation have received notoriety for having information as their existential beginning. It took place with the Information Desk offering reference services – the specialized library provided, in addition to the book, the availability of information, emphasizing the documentalist as the first information scientist. The conceptual relationship between Library and Information Science, documentation, and information appears in the face of the enthusiasm for information technology, information theory, and information processing. Capurro & Hjorland (2007, p. 178) states that: "a serious risk arises such that concepts and theories related to information theory tend to reduce the study of documentary communication to computer science and cognitive science, thus removing the basis of the field in its own right" (Capurro & Hjorland, 2007, p. 178).

There are more and more possibilities for registering and disseminating information and an increased need for other information services and their management using IS. Library and Information Science and scientific documentation pervade IS and its specificities to collect, store, disseminate and retrieve information, adding unlimited access to information as part of human rights.

> Special librarianship and documentation (and later information science), on the other hand, were much more concerned with research libraries, databases, and with activities connected to the seeking and dissemination of scientific literature–and also the application of information technologies (Capurro & Hjorland, 2007, p. 78)

Always connected with Library and Information Science, there is a contradiction in the praxis of information retrieval starting from its collection and storage because what happens is the retrieval of documents with information to be accessed and/or disseminated whenever necessary.

The individualist perspective, isolated from the context, does not fit in the social paradigm, where "the object of information science is the study of the relationships between discourses, areas of knowledge and documents concerning the possible perspectives or access points of different communities of users" (Capurro, 2003, p. 10). This is its added value from the perspective of capital, as it has the adequate capacity to apply knowledge according to the concrete, necessary, or desired demand, contextualizing and re-contextualizing knowledge, that is: "information is knowledge in action" (Kuhlen as cited in Capurro, 2003, p. 11).

> Under this perspective, knowledge is potential information. It is not difficult to see here the relationship between our discipline and the always difficult and risky work of interpreting, especially if this work is not reduced to deciphering an obscure text, but rather encompasses all real problems, no less obscure and "anomalous" of human existence (Capurro, 2003, p. 11).

Even though it was incessantly recognized in Library and Information Science and scientific documentation in the last century, at the beginning of the twenty-first century, the transdisciplinarity between areas of knowledge is emphasized, confirming its various meanings and elucidating, in IS, understanding as a grouping of fragments of disciplines that speak about information (Capurro & Hjorland, 2007). In this so-called information society, for sociology, political science, and economics, the concept of information is phenomenal because of its possibilities of interpretative and conceptual variance, producing a great social impact, and this study focuses on information from Digital Humanities.

3. DIGITAL HUMANITIES IN THE INFORMATION SOCIETY

DHs pervade the presence of human beings while active in society through digital tools built by technological advances in favor of the common good for a sustainable planet. In this contemporary digital era in which social sciences and technical sciences are divided, DHs contemplate several areas both in academia and in social culture, registering, promoting, and signaling a transdisciplinary approach that is concerned with the human condition and its relationship

with itself and with the planetary system, seeking to understand and preserve it for new generations, keeping the humanity memory and its historical processes, and thus contributing to the understanding of DHs themselves.

Through the data flow, cyberspace is increasingly crucial to humankind's daily life, economy, and planetary security. "Humans want to merge into the data flow because when you are part of that flow, you are part of something much bigger than yourself" (Harari, 2016, p. 388). Despite involving traditional political issues, such as sovereignty, borders, privacy, and security, its construction process was not democratic. The Internet looks like a free and lawless zone that erodes State sovereignty, ignores borders, eliminates privacy, and poses the most formidable risk to global security: "Just as free-market capitalists believe in the invisible hand of the market, so Dataists believe in the invisible hand of data flow" (Harari, 2016, p. 388).[2] DHs play a fundamental role in this historical moment of society.

Seeking understanding and truth ethically, valuing the correct and fruitful legacy from one generation to another, more than registering, DHs also provoke questions in humanities and digital sciences when researching published, reproduced, and disseminated information according to their interests. Understanding the stored records' meanings, motives, and intentions is also possible. The methodology used for this process has its influence and directs to reflective criticism or informative reading; they also serve as

2 According to Harari (2016), the confluence between biological sciences – recognized as biochemical algorithms – and computer science – recognized as electronic algorithms – enabled Dataism, based on the data flow. "Dataism puts the two together, pointing out that exactly the same mathematical laws apply to both biochemical and electronic algorithms" (Harari, 2016, p 370).

investigative studies and production of new learning, curiosities and political, social, and technological advances in favor of planetary life, as stated by Amanda Visconti (2016):

> Digital humanities takes [sic] the work already done in the humanities (that is, research, teaching, and learning in areas like literature, history, and the arts; everything related to our past and present cultural heritage). But! It does this work in digital ways, such as making and using computer software, websites, and mobile phone apps to teach, or to help researchers and learners (Visconti, 2016, p. 2).

Visconti (2016) provokes us to look beyond the use of "digital tools and methods and formats in humanities work; it's also about applying humanities thinking to the digital" (Visconti, 2016, p. 2) and brings as an example social-political platforms aimed at human rights, such as feminist and racial themes or hidden opinion present in the historical records made in America.

> For example, a DHer might think through what a feminist social media platform would look like, or look for the hidden interpretative work that goes into creating a shiny map of political opinions in America. What gets represented, and why? What gets elided and glossed over? (Visconti, 2016, p. 2).

It is necessary to perceive the possibilities of influencing the organizational attitudes and educational DHs work. Critical thinking accompanies the indifferent creative thinking of the working professional, hence the importance of recognizing social-political induction in the DHs performance based on critical, reflective participation and possibilities of particular interests.

History shows the scientific presence in all social transformations. According to Harari (2016), Homo sapiens conquered the world through connectivity, flexible and large-scale cooperation, and the ability to reinvent their social system, re-signifying the world with the writing invention. That species transformed the global ecology, dominated the rest of the animals, domesticated the useful animals, and extinguished the useless ones in its system. Aware of the damage caused to the ecosystem, human beings justified their actions through religion. However, in humanism, they stop believing in a great cosmic plan that gives meaning to life and starts seeing their own experiences as a source of a sense of the great cosmos.

While in the Middle Ages, it was believed that everyone was involved in a great cosmic plan and that there was a purpose and script for the life of each living being, in modernity, the new scenario was composed of the search for power in a meaningless universe. Invent, discover and grow in pursuit of omnipotence, causing existential anguish. Capitalism has reduced human violence and increased tolerance and cooperation. It urged people to stop thinking of economics as a zero-sum game: *your profit is my loss*. And it starts considering economics a win-win situation; *your profit is also my profit*. To ensure perpetual growth, we must discover an inexhaustible source of resources. Thus, the biggest challenge is to save the economy from freezing and the ecology from boiling (Harari, 2016).

> It is not surprising that in this scenario, DHs grow and provoke looks of approval and disapproval. Their resources and new ways of producing manners of seeing and accessing or processing information and data from such diverse research suggest that we are witnessing a unique moment

> of an epistemological and methodological turning point in the Humanities researcher's work, bringing it closer to the debates characteristic of those of Information Science and the paradigms they already know well (Pimenta, 2020, p. 16).

DHs look at the rupture between the previous and current views of DHs themselves, translating forms of expression and talking about digital environments. "They emerge as an interdisciplinary field willing to shelter the reflections and practices raised by the changes resulting from the introduction of digital technologies in the universes of culture and Information Units" (Almeida & Damian, 2015, p. 08). Thus, the DHs' emergence points to a change in the communication process.

According to Almeida & Damian (2015), "Digital Humanities transcend the exclusive concern with the use of computer tools applied to the humanities, also configuring their own theoretical and philosophical issues" (p. 08). Harari (2016) states that with the 1789 freedom-equality-fraternity humanist revolution, Dataism[3] is the first to create innovative values: freedom of information - free

3 Dataism was born from the explosive confluence of two scientific tidal waves. In the 150 years since Charles Darwin published On the Origin of Species, the life sciences have come to see organisms as biochemical algorithms. Simultaneously, in the eight decades, since Alan Turing formulated the idea of a Turing Machine, computer scientists have learned to engineer increasingly sophisticated electronic algorithms. Dataism puts the two together, pointing out that exactly the same mathematical laws apply to both biochemical and electronic algorithms. Dataism thereby collapses the barrier between animals and machines and expects electronic algorithms to eventually decipher and outperform biochemical algorithms (Harari, 2016, p. 370).

circulation; convinces by its general dependence on information: immediacy provokes people's desire for mobility after sharing where and when they want to go, the system can refine the data and optimize time, however, for that it is necessary to give up privacy.

From a humanitarian point of view, every human being wants to be recognized as a subject who participates and contributes something: whether in society, in the family, or among friends, he/she wants to be noticed, and for something extraordinary: it is spectacular. "People just want to be part of the data flow, even if that means giving up their privacy, their autonomy and their individuality" (Harari, 2016, p. 387). Having their names glorified is a dream built by humanist science and facilitated by technologies in social media, driving the growing production of artistic and scientific creations through worldwide collaboration (Harari, 2016).

> [...] "digital humanities" are connected to what is known as "imagined communities." Due to the multiple applications of the word mapping, the humanities have the possibility of constructing (or envisioning) new points of observation of any type of matter, regardless of being historical, scientific, political or cultural. Take Italy for example; mapping art, language, customs and regions, sports, Italian cuisine, etc., the "digital humanities" way of proceeding consists of making all the graphic representations (or "maps") that the ideas propose, each unit contributing to consider new and better ways of understanding the object in question (Meeks, as cited in Cuartas, 2017, p. 71).

E-mails, phone calls, articles, conversations, information exchange, uploading, downloading, and other Internet

possibilities provide many data bits. For Dataism, regardless of the person's level of knowledge, the important thing is to participate in the data transmission flow, exactly as traditional religions claim that every word and action is part of a great plan of God, a God who watches and cares about people's thoughts and feelings. The capitalists' faith in the free market is similar to the Dadaists' faith in the data flow (Harari, 2016).

Through actions that provide reflection, contextualization and re-contextualization, besides recording, DHs make it possible to oppose activities that reproduce everyday life and place the human being as a maneuvering tool at the service of the market. Ortega (2013) clarifies that scientific-technical knowledge and the digital environment go hand in hand:

> According to the previous conventional definition of Digital Humanities – field of convergence of the technical-scientific development of computational languages, the digital medium, and the humanistic disciplines –, the fact that digital studies on visual arts and cultural art in general are part of this field should not raise doubts, since these - Digital Humanities- have been presenting themselves for some years as the great field of reflection, action and intervention of the arts and humanities as a whole, including the field of cultural heritage (Ortega, 2013, p. 4).

DHs can be defined as the convergence space of computer science, digital media, and humanistic disciplines in the search for new interpretative models and new paradigms of knowledge following the transformations operated in the information society. Transformations that are already evident and are both inclusive and exclusive, given the

impossibility of access in all spheres and social locations. In this convergence, the performance of the university world through its educational tripod – education, research, and extension – is decisive for the possibilities of actions in DHs that can decrease social inequality.

Education contributes to social transformation through awareness of access to knowledge and its contextualization in reality, which is the reason why university extension is essential in the subjects' emancipation because of the great access provided to and direct impact on the most remote places in society, such as communities in significant social vulnerability. "Thus, it is necessary to expand its bases so that they not only cover education and research but also favor the intellectual development of social subjects, strengthening the interactivity between the institution and community" (Jesus & Gomes, 2021, p. 03). From education, research, and extension, the university produces, monitors, creates, recreates, and disseminates knowledge and awareness that can contribute and impact to the point of transforming the culture and reality of a territory.

3.1 University Extension: A methodological possibility in DHs

Preparation strategies for technological and social advances must also pass through universities while citizen makers. The university world plays a fundamental role in education, research, and extension. Its operational expertise varies from place to place, which produces and systematizes knowledge in line with education quality, providing social impact in tune with society's current needs.

With the university extension, it is possible to mediate scientific knowledge and popular knowledge in a true integration that favors the problematization of already

established certainties and the construction of new knowledge, adhering to the phenomenon of epistemology-pragmatics between both institutions, with possibilities of results of great transformer impact on the social reality and the university world of scientific production. "Research needs to grow and qualify at the local, national and international level to contribute and impact emerging challenges, including thinking about the best way to transition to a more cybernetic world" (Mendes et al., 2023, p. 3). University extension plays a fundamental role in scientific research, raising awareness, and preparing society for the future. It takes science to society's most vulnerable places and dialogues with the local culture without discriminating against it (Mendes et al., 2023).

Among the possible praxis of extension in DHs, we have the university extension that takes place within the community outside the university, in a natural context, through a democratic practice built collectively and with an emancipatory bias, given each participant's involvement in all processes of the developed action. Because it was built collectively, it runs through the participatory methodology, where information and knowledge sharing are appropriated between the subjects from the university and the external community. Articulation between the academic community and the external community, through a relationship of equal rights and duties, promotes a cultural and scientific educational process, which, reaching awareness, allows the territory and society to be transformed and the academic world itself. "The connection that is established between these two poles is an exchange relationship, in which the university [...] offers subsidies for the subjects' intellectual development [...] the community contributes its values and culture" (Jesus & Gomes, 2021, p. 03).

The university has a bureaucratic structure under State control with objectives that serve the dominant interests, especially in a capitalist society. Still, the university also has contradictions, and extension has contradictory space. Its structural organization does not happen mechanically, but due to the complexity of social relations and the external community, there is a greater possibility of spontaneous, participatory, and democratic dynamics (Incrocci & Andrade, 2018). Thus, even when considering the warning of Pedro Demo (2000) about the fact that state educational action in capitalist society seeks to consolidate social domination and control while maintaining class differences: "It is not just a question of stuffing ourselves with information in such a way that we no longer know how to handle it, but above all of using it for its opposite, in the more precise sense of cultivating ignorance" (Demo, 2000, p. 37), the participatory action of exchanging knowledge, based on scientific knowledge, provides reflection and clarification accompanied by criticism, which can generate awareness of the social organization and the place they are located.

An example of a university extension experience developed in the external community – with the socially vulnerable community and aimed at people's emancipation through academic science with the possibility of preparing for new occupations and citizen participation – is the *Cibercidadania* University Extension Program, carried out by the Universidade Federal de Santa Catarina, through the Department of Information Science in the subject of Community Interaction I and II, based on goal 12.7 (Federal Law No. 13.005, dated June 25, 2014) of the National Education Plan (Minghelli et al., 2021).

> This goal determined that 10% total workload of undergraduate courses should be composed of

> extension activities, involving all of its students. Thus, even if timidly, the CIN/UFSC, composed of Library and Information Science, Archival Science and Information Science courses, restructured its curricula in 2016, creating a common core of subjects and, among them, Community Interaction I and II (Minghelli et al., 2021, p. 114).

Gathering high school students from a socially vulnerable community school and university students, through meetings with conversation circles, socialization, training workshops and social coexistence, both in the university city and in the school territory, an attempt is made to reduce the distance between the academic world and peripheral community, through the possibility of scientific, cultural, and popular learning.

The projects are developed by creating personas[4] to know the students' profiles.

> In the method design, the inspiration came from the studies of Vygotsky (1991), on the characteristics of the Zone of Proximal Development. It can be understood as the difference between an individual's actual developmental level and the potential developmental level (Minghelli, et al., 2021, p. 116).

The first project, *Horizonte Digital* [Digital Horizon], is a web platform to provide information about courses and forms of entering and continuing to attend college. The second project, *Território Digital* [Digital Territory], continues

4 Method used to know the students' profiles, based on the experience of Bonnardel, N. & Pichot, N. (2020). Enhancing collaborative creativity with virtual dynamic personas. Applied Ergonomics, 82, 102949.

the previous one, with content and materials developed by the school teachers. Workshops encourage people not to drop out of studies and provide information about access to and permanence in higher education. The third project, *Projeto X* [Project X], aims to subsidise existing or potential entrepreneurial actions in the school territory, resulting in the Data Security Assistant course named DPO-X.[5]

Each semester, undergraduate students are divided into teams with the choice of a leader and a mentor. Members are responsible for the projects undertaken. University students interact directly with school students and the community, carrying out the participatory proposal of exchanging knowledge, experiences and, among others, culture through a horizontal relationship of commitment to the actions built:

> The fact that I perceive myself to be in the world, with the world, with others, brings with it a sense of 'being-with' constitutive of who I am that makes my relationship to the world essential to who I am. In other words, my presence in the world is not much of someone who is merely adapting to something 'external,' but of someone who is inserted as if belonging essentially to it (Freire, 2011, p. 53).

In the twenty-first century, anti-democratic actions that exclude rights resurface with force, making us reflect on the need to strengthen pedagogical interventions. Technological advances characterize an Information Society focused both on the subjects' emancipation and on manipulation

5 Data Protection Officer = person in charge: natural person, indicated by the controller, who acts as a communication channel between the controller and the holders and the national authority; according to Art. 5th § VIII of Law No. 13.709, of August 14, 2018.

that sustains individualized interests, and "[...] in the face of pragmatic, reactionary, and fatalistic neoliberal philosophizing, I still insist, without falling into the trap of 'idealism,' on the absolute necessity of conscientization" (Freire, 2011, p. 54).

> [...] the humanities studied and taught with digital tools and in an environment that is at least partially digital [...] being innovative and critical in the use of digital technology for the humanities that often shies away from the concept of stable digital 'products.' Although it often depends on digitization processes (or has them as an additional result), it is not simply about improving access or dissemination, but about studying (and sometimes creating new) ways of creating and managing knowledge. [...] it is not about the discovery or the 'solidity' of what is known, but about representing (with digital models) that knowledge and in some cases representing the research process [...] (Spence, 2014, p. 44).

University extension is among the possibilities of intervention for raising awareness, so we share the experience lived by CIN/UFSC, named *Cibercidadania* Program, which has as one of its objectives the intention of demystifying, with the school community, the impossibility of dreaming beyond subordinate services, as Freire (2011, pag. 99) warns, that "a minority who holds power may use and squander the fruits of the earth while the vast majority are hard pressed even to survive and often justify their own misery as the will of God," and that access to university is for very few. DHs pervade the consideration of the presence of the human being as an active being in society, through digital

tools built by technological advances, in favor of the common good for a sustainable planet, and, for this reason, the development of university extension outside the university takes place.

From the experience of the *Cibercidadania* Program and with a view to the importance and possibility of intervention with the social impact of the university extension carried out in a socially vulnerable community, we present, in short, part of the community intervention project of the UFSC Department of Information Science (CIN/UFSC) Extension Program, carried out in partnership with the Marista Escola Social Lucia Mayvorne [Marist Social Center Mont Serrat] high school, in the Monte Serrat community in Florianópolis, Santa Catarina, as a methodological possibility of DHs.

Table 1. *Cibercidadania*: *Território Digital* Project (Source: Elaborated by authors, 2023).

Project identification
Study and information platform about accessing to and keeping on attending the Universidade Federal de Santa Catarina with basic education content applied and experienced in the classroom by teachers and students from Marista Escola Social Lucia Mayvorne, located at the Monte Serrat community in the *Maciço do Morro da Cruz*, in Florianopolis, SC. The platform design and development took place through the *Cibercidadania* Program – a university extension project of the Department of Information Science of the UFSC Technology Center, in partnership with the external community involving professors/teachers and students from both institutions.

Situation Contextualization
Through participatory methodology, in 2018 and 2019, the platform was developed by the subjects involved in the *Cibercidadania* Program, and was no longer used due to the pandemic in 2020, and then became little used by the school students. In the territory where the school is located, digital media appropriation culture translates into using social media for communication and entertainment and not for studies and/or professional work related to family income. Even the technical knowledge of computing technology basic tools, such as the Office 365 itself, is limited.

Rationale	Problem
Once the platform is ready and open for expansion, qualification and updating of its content, it is necessary to create a motivational strategy for the school students, in order for them to use it to prepare themselves for the university entrance exam.	Platform existence is not enough, it is necessary to use it: how can this technological tool, through its media action, relate to the community and contribute to accessing the university world?

Objectives	Target Audience
To create practical motivational strategies for use of the *Horizonte Digital* platform, enabling high school students from the partner school to prepare themselves for the UFSC entrance exam.	High school students at Marista Escola Social Lucia Mayvorne, located at the *Maciço do Morro da Cruz*, Florianópolis, SC - Monte Serrat community. University students of the subject Community Integration I and II

Action description/methodology

1. To resume and present the platform to school students, dialoguing and reflecting on its importance in the process of preparation for university entrance exams and ENEM [National High School Exam]
2. To listen to the students through a questionnaire and a conversation circle about the possibilities and suggestions for motivational strategies to use the platform.
3. To collect and compile information, followed by the organization of action strategies, based on students' suggestions.

Execution time: three months

Possible impacts

- To transform an idleness platform, which was built by the community itself, into a useful tool which can be used by it.
- To demystify and expand the use of digital media beyond entertainment and informal communication, making it useful for study and work as well;
- To enable university students to reflect on the importance of their professional activities for a fairer and more democratic society.
- Present a reflection on understanding the meaning and importance of Digital Humanities for socially vulnerable communities.
- Make it clear to socially vulnerable community students the necessary path to enter and keep on attending the UFSC, transforming their daily life from access to a higher education course;

Partnerships and interfaces	
Department of Information Science of the UFSC Technology Center	Marista Escola Social Lucia Mayvorne [Marist Social Center Mont Serrat] (Marist Basic Education Network)
Resources	
Physical, material, and personal structure of the Marist Social Center Mont Serrat	Physical, material, and personnel structure of the CIN/UFSC university extension program
Coordination	
UFSC representative coordinator professor	School representative coordinator professor

DHs can contribute to reducing emerging social inequalities, which may still arise from the technological advances that happen quickly without providing the necessary time to adapt to new realities.

4. FINAL CONSIDERATIONS

The Dataism dogma is likely the challenge and the political and economic project of the twenty-first century. Even if Dataism is wrong, it could take over the world as it spreads across all scientific disciplines and promises human aspirations. It is not known how or why data flows come to produce awareness or subjective experience. Perhaps organisms are not algorithms. It is doubtful that life boils down to decision-making, and the algorithm may adopt a distorted view of life. Life is unlikely to be reduced to data streams (Harari, 2016). If Dataism conquers the world, what will be humankind's fate? Humanistic projects may be irrelevant, and it is possible that what has already happened between Homo sapiens and other animals can occur. We cannot predict the

future; nobody knows what the job market, families, and ecology will be like in 2050. With so many possible scenarios, human beings must discover what to pay attention to because having power means knowing what to ignore.

To overcome and break with the possibility of massive chaos in the face of technological advances in the transformation of jobs by 2050, we need to build unprecedented economies and develop new social and economic models with the principle of protecting human beings and their basic social and emotional needs and planetary sustainability. We will overcome all challenges in a collective and transdisciplinary manner, combined with planetary sustainability, with life at the center of all advances and evolutions. We have surpassed steam engines, railways and electricity. When no one else needs this profession, people will already be prepared and qualified for the new functions that will arise, with the contribution of Information Science promoting and developing individuals through the mediation of knowledge to coexistence and social well-being in a broad and qualified manner.

The creation of possibilities to value educational experiences that already exist in institutions in an ethical, respectful and participatory manner – serving as a stimulus to the expansion of the existing educational dynamics, strengthening and qualifying personal and collective training, considering the various participating fields of action and different perspectives, taking into account that DHs manage to encompass interdisciplinarity and access transdisciplinarity naturally, because of the various skills that may arise during the process of construction and implementation of the proposal –, permeates a transforming action in the organizational and motivational dynamics in any educational institution.

> As much as I like to work toward what I want my DH to be, I don't want to give anyone the impression that DH is some utopia. It's not better than other fields, but it has in its favor some more ways for people to regularly, actively move the field to be a little bit better at a time (Visconti, 2016, p. 15).

The possibility of considering records, posts, socializations, a work attitude full of values and planetary awareness focused on human rights, sharing the learning process and being connected with other people and experiences permeates the opportunity to see and review their practice, meaning it more and more for a humanist practice. DHs are a transdisciplinary opportunity to contribute collectively and consciously to future generations, starting with the present in the face of past experiences, but without making the same mistakes, through ethics, respect and humanity, using technological and digital tools.

Information Science still has very few actions aimed at University Extension in the external socially vulnerable community. However, its capacity to act is gigantic, especially in this context where society is; the *Cibercidadania* Program is a gateway. Even though it is still not so recognized by the university environment as a great promoter of social transformation and strengthening of Human Rights through the people's emancipation, and even if not using all its potential impact on society, the University Extension, with its function of connecting university and society for the promotion of knowledge, without confusing the actions with assistance given its conservative and domesticating perspective, is the one that presents conditions to reach the society's most distant and vulnerable places, through the most varied areas of activity, dialoguing with the local culture without discriminating against it and without the

intention of providing cheap and self-serving assistance that does not promote the people's emancipation.

The university extension is essential for the university's interaction with the external community, and the *Cibercidadania* Program demonstrates how it is possible to conceive an extension program in which the subjects are actors and the democratization of knowledge, the means. Experiencing Vygotsky's concepts from Freire's perspective, the program transformed CIN/UFSC undergraduates' and Marista Escola Social Lucia Mayvorne students' training and impacted the professors and teachers from both institutions. What was built constitutes a solid base for new actions and inspires other institutions to insert extension programs in their curricula with an emancipatory teaching-learning process through DHs.

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Empathy map of postgraduate students on information science: A reflection on the relationship between students and digital humanities

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ABSTRACT
The digital humanities (DH) subject is a significant opportunity to learn about what encompasses DH for the postgraduate academic community. This research aimed to observe the DH discipline and its students of the postgraduate course in Information Science at the Federal University of Santa Catarina. This is an exploratory, descriptive character of a qualitative nature. The empathy map model, developed by Xplane, was used to analyze the results. From this research model, it was possible to understand and explore the real expectations and thinking of students attending the DH course.

Keywords: digital humanities, empathy map, postgraduate degree in information science

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1. INTRODUCTION

Changes in the learning environment have become evident, as well as the search for the assertiveness of knowledge in the academic community regarding the discipline of digital humanities – it is an opportunity for the development of knowledge on the historical, theoretical, and epistemological bases of the arising and development of digital humanities and its central concepts, definitions, and projects. The discipline of digital humanities is where it can be analyzed, from the perspective of Information Science and its inter and transdisciplinary ability, the dialogue established between emerging technologies and the research in the field of human sciences.

According to Damian *et al*. (2015), "the exploratory study of Digital Humanities becomes relevant and stimulating for the area of Information Science, once it is in the interest of both areas, the use of technologies that allow the mediation and higher accessibility to information" (p.80). Damian *et al*. (2015) also state that:

> The term "Digital Humanities," although it can be seen as one more generalist label, appears as an interdisciplinary area that gives place to the reflections and practices that had been raised by the changes caused by the introduction of digital technologies in the universe of culture and of the Units of Information and Culture (p. 8).

Studies that have been held reflect the increasing rise of the term digital humanities, defined as a disciplinary field,

formation profile, or a movement linked to open access (Rodríguez-Yunta, 2013, p. 37). Rodríguez-Yunta (2013) questions:

> Why talk about digital humanities? Why digital humanities and not digital science or digital academy? It is worth asking oneself what to precisely emphasize in the so-called human sciences (although DH also encompasses the social sciences) when it is not, exactly, an area that stands out from the domain of new technologies among its researchers (p. 13).

However, reflecting on the relationship between students and the discipline of Digital Humanities is necessary to understand what is thought, felt, said, and seen about it. The objective of the research was to elaborate an empathy map focusing on the student's expectations and understandings regarding the Discipline of Digital Humanities in the Post – Graduation Course on Information Science, second semester/2021, through a critical and empathetic view of the online debates in classrooms.

An empathy map is a method that helps to imagine a persona (character) that helps its clients. The name does not matter – knowing the client to establish an empathetic relationship profoundly is essential. As the name itself says: Empathy Map, that is, put yourself in the shoes of your client and try to see life through the client's universe (Quaiser, 2017). In the case of the Discipline of Digital Humanities case, this instrument allowed adherence to a procedure of visual and dynamic diagnosis, which can be reconsidered. According to Valdrich and Cândido (2018), six needed different reflections to fill in an empathy map (p. 114):

- What he Hears: Here, it is essential to reflect upon what your students' friends say, as well as the professor, classmates, influencers, etc.
- What he Sees: At this point, we have to see the environment your student attends.
- What he Thinks and Feels: One of the most challenging points is understanding what crosses the student's mind. To understand what matters, main worries and aspirations, informational needs, and thoughts that keep their heads busy.
- What he Says and Does: Understanding what he says and does is, above all, an exercise of observation, appearance, and behavior that are considered.
- Weaknesses: What are the main obstacles students face to meet their informational needs and achieve success? What are their fears, frustrations, and obstacles?
- Gains: Usually, everything is aimed once the fears are overcome. What are their desires, needs, ways of measuring success, etc?

Following, there are the methodological procedures of this study.

2. DEVELOPMENT

The research is qualitative, descriptive, and exploratory regarding its objectives. According to Gil (2017), the experimental study has as its characteristic of getting to know a fact or phenomenon yet little known by science, and the researcher aims to get acquainted with the phenomenon intended to be studied. Yet, according to the author, descriptive research describes a population's characteristics, context, sample, or phenomenon. The objective was to draw an Empathy Map to reflect on the relationship be-

tween the Discipline of Digital Humanities students from the Post – Graduation course in Information Science at UFSC and the understanding of Digital Humanities.

The Empathy Map is a tool that belongs to the *Canvas* methodology for Business Models, and it was created by the consultancy of *Design Thinking* at Xplane, which aims that put ourselves in the business clients' shoes.[1] Therefore, the tool exercises reflections about what the client says, does, sees, thinks, feels, hears, and yet lists the pains and the possible gains in this relationship between the client and the investigated person, aiming to help in the business model. This survey aims for a critical and empathetic look at data and information that can clarify the relationship between users and the analyzed context. In addition, it provides the notion of new actions or the improvement of the already implemented activities. In this regard, the empathy map can serve as a parameter for planning short, medium, and long-term actions, whose focus is the users that belong to a specific context, to provide a beneficial and attractive experience with the environment in which it is inserted.

The empathy map can be used in other contexts of action to reflect the relationship between the individual or a specific group inserted in a scene. Given the above, the analyzed context for this work is the Discipline of Digital Humanities, more specifically, the students in the Post – Graduation course on Information Science at UFSC, including Master's Degree and Doctorate students of diverse formations, who are registered in the discipline in the second semester/2021. This public was chosen because the

1 Pereira, D. (2021). *Mapa da Empatia*: o que é? In: *O Analista de Modelos de Negócios*. http://analistamodelosdenegocios.com.br/mapa.

author studies the discipline and facilitates data collection. The empathy map aims at gathering information through the other look. In this respect, this work's author watched the recorded classes' videos to reflect on the relationship between the students and the Discipline of Digital Humanities, having as a base theoretical references that had been presented in the discipline.

For the drawing of the empathy map, some stages were followed – firstly, a bibliographic survey on Digital Humanities and Empathy Map was held for the theoretical foundation. The following stage refers to filling in a picture that contemplates all the quadrants of the Empathy Map drawn in a Word document. The information collection period happened in December 2021. After filling in the map's stage, the terms or words that represented the central idea of each note made were selected to be added to the graphic picture that represents the empathy map. Table 1 relates to the six quadrants that form the empathy map.

Table 1. Parts of the empathy map. **Note:** Elaborated by the authors and based on Xplane (2017).

	Reflections
What does he hear?	Reflect on what other people say about Digital Humanities - DH
What does he see?	How does he see DH?
What does he think and feel?	What are the worries and expectations of DH?
What does he say and do?	How does it work? Observe what he already knows about DH and if it is applicable.
Weaknesses	What are the difficulties in understanding, fears, frustrations, and obstacles?
Gains	What are the earnings? What is it aimed?

As we can observe, each part of the empathy map allows the reflection in a critical and empathetic way, listing points to be improved and the ones that can be preserved in the discipline of DH. Through this table, the author reflects on how the relationships between students and the discipline of Digital Humanities occur, running through each part of the empathy map. They present the following result: The proposed map gives us an overview of how Postgraduate students in Information Science at UFSC perceive Digital Humanities (see Figure 1).

Figure 1. Empathy map on digital humanities. **Note:** Elaborated by the authors and based on Xplane. (2017).

3. RESULTS AND DISCUSSION

For the analysis and discussion of results, each quadrant of the Empathy Map is presented. The first analyzed quadrant of the map referred to what students hear about

Digital Humanities. According to some cited authors in the discipline's theoretical framework, the concept of DH was listed, and it was observed what the students debated in the classroom.

Damian *et al*. (2015) say:

> Digital humanities appear as an interdisciplinary field aimed at the reflections and practices raised by the changes resulting from the introduction of digital technologies in the universes of culture and Information Units. Then, the emergence of Digital Humanities points to the difference in the communication process as a whole (p. 79).

According to the students, in the type of debates in the classroom, Digital Humanities are human and social sciences linked to technology; it is an area of knowledge in technology, and there is no clear definition of digital humanities. The second analyzed quadrant refers to what is seen. It is considered the concept of Digital Humanities discussed in the classroom, and students' diverse opinions about DH, as the act of being and seeing the world through technologies, the used technologies for spreading social humanities, and the relationship between technology and the environment.

After, the analyzed quadrant is related to what is thought and felt. There were considered the discipline's pre-concepts, first understanding and last one. Thinking and feeling in students' Digital Humanities were initially expressed as ICTs – Information and Communication Technology, the use of technology that is applied to humanities and, in the end, it is concluded that it produces real effects for the society. The further quadrant in the map is linked to what is said and done. At this moment, the student could

present what he says and does on DH. It is noted that Digital Humanities had already been applied in the past but with a different name. Digital Humanities has multiple uses, strengthened through existing groups and research.

Guerreiro & Borbinha (2014) corroborates with the ideas debated by the students in the Post-Graduation course on Information Science from the second semester of 2021. He says:

Digital Humanities are consolidated as a new field of knowledge and, as such, show the indexes of a new field that has been reached through numerous associations, study centers, departments, teaching programs, specialized journals, and congresses (p. 2).

Then, there are the weaknesses and gains that students feel in the scope of understanding and use of the concept of Digital Humanities. The lack of knowledge with a theoretical basis initially mistakes for understanding what is related to technology; the most significant weakness is understanding DH as a digital project and making "digital" typical and expected. And, finally, the quadrant that refers to the gains: the incorporation of technology in humanities and disclosure of the culture of many countries, the access to information, sharing, and humanities that benefit from technologies.

Through this initial analysis, we can consider the Empathy Map as a supporting tool in planning actions for developing new content for the Digital Humanities discipline. Teachers' performance was primordial because it supports students in understanding the teachings provided during the classes through the contact with bibliography and debates among classmates. The following actions in the discipline were suggested: a group project configuring the use of the concept of Digital Humanities. All students

presented their projects which another group of classmates evaluated in the discipline, the professor, and the moderator of the presentations.

4. FINAL CONSIDERATIONS

The discipline of Digital Humanities is an essential part of the academy, broadening the debate around the main concepts, definitions, and projects in Digital Humanities. It analyzes the role and participation of the professional and the information institutions in the development of research and projects. Since Digital Humanities, it has been gaining prominence in the scientific community. The objective of the study was to elaborate an empathy map to reflect on the relationships between students from the Discipline of Digital Humanities in the Post –Graduation course on Information Science in the second semester – 2021 and the presented discipline, which has been reached and can be used as a parameter for future actions.

The Empathy Map was elaborated by considering all its quadrants, and it was presented in this study in the development section. In the end, the unit of analysis and discussion of results was introduced, in which each item from the Empathy Map was listed under the author's perspective. The methodology of the empathy map is very rich because it allows a reflection under the student's view, bringing his experiences and appropriations regarding the understanding of Digital Humanities. In short, reflecting on the empathy map under DH's scope made exchanging ideas and experiences about this relationship possible and a new look at Digital Humanities and Information Science.

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Access to archival collections about Brazilian federal universities' monuments through the "Access to Memory" platform

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ABSTRACT
This study proposes utilizing the records description and diffusion platform "Access to Memory" to promote access to archival collections kept in the permanent archives of Brazilian federal universities related to monuments within such institutions. The initiative is in the Digital Humanities area, which advocates the adoption of digital tools aimed at promoting and developing actions and studies that result in knowledge production for the Humanities. This study shows that Information Science, Archival Science, and Digital Humanities can establish convergent actions that are fundamental in a society more and more adhesive to digital resources. We can conclude that adopting the digital tool "Access to Memory" to provide access to archives and information referring to monuments of federal universities stimulates reflection and comprehension about these symbolic objects that represent the culture, the memory, and the history of the country.

Keywords: digital humanities, information science, archival science, historical archive, monuments, federal universities

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1. INTRODUCTION

Digital technology is increasingly present in society: through varied and dynamic applications, it is introduced into different areas and segments, such as education, health, communication, commerce, etc. Consequently, digital tools are also instruments applied in research and studies, for example, in the humanities and social areas, thus enabling the conception of initiatives and projects included in the scope of Digital Humanities.

Digital Humanities can be defined as:

> A transdisciplinary research field where issues and objects related to the various disciplines of humanities, social, and applied social sciences meet with resources from computing, thus leading to the possibility of new developments in the production of knowledge in the Humanities in the digital environment (Pimenta, 2020, p. 2).

Therefore, through these digital resources, Applied Social Sciences and Humanities develop and deepen their studies, reflections, and understandings of human beings and their social environment. Digital Humanities emerged in the late 1940s when "Roberto Busa, an Italian Jesuit priest, conceived a computer tool allowing researchers to navigate

within the massive *corpus* of Aquinas's works" (Tâut, 2017, p. 101). As for the details of Roberto Busa's project that gave rise to Digital Humanities, we highlight:

> The Index Thomisticus project was the beginning of a very fruitful application of digital technologies in linguistics and literary analysis, generating a considerable epistemological optimism that catalyzed the formation of a broad epistemic field known as the field of Digital Humanities. However, recent findings show that the Digital Humanities are still far from being a unified field capable of encompassing new views on human culture (Tâut, 2017, p. 102).

Since several areas of knowledge (and their subareas) use digital resources aimed at Humanities studies, such as Arts, Literature, History, Philosophy, Sociology, etc., this study is limited to the scope of Information Science (IS) and Archival Science. These fields, in their research and reflection processes, in addition to developing methodologies for organization, maintenance, retrieval, and access to information, use digital tools.

Thus, by presenting a propositional approach and establishing the interaction of IS and Archival Science with the Digital Humanities, this study analyzes the characteristics and potentialities of the application of the Access to Memory (AtoM) document description and diffusion platform to provide access to the archival collections kept in the permanent archives of Brazilian federal universities, specifically, to those that refer to monuments located within these institutions.

Le Goff (2013) explains that the Latin word *monumentum* refers to a sign of the past and can refer to a sculpture

or a commemorative work of architecture, such as a column, a trophy, a portico, etc. The monument relates to the power of perpetuation, voluntary or involuntary, of historical societies and is a legacy of the collective memory (Le Goff, 2013). For Kornalewski (2015), the concept of the monument is broad. If there are physical specifications, we could talk about, for example, commemorative works and memorials.

According to Kornalewski (2015):

> Monuments are an information source in a three-dimensional format and embedded with iconic symbols, which allows us to engage in numerous discussions, memories, and interferences that were part of the construction process of this mnemonic support, for example: memories of family, historical, religious, military institutions, among others (p. 66).

Le Goff (2013) also presents the conception that every document is a monument since, over time, it has been established that, like monuments, documents are subject to the partiality and subjectivity of their context, actors, time, and power relations established in society. Therefore, it is not a neutral register since it results from choices and intentions.

Here, it is essential to point out that although making archival documents available (minutes, certificates, correspondence, reports, etc., in printed or digital form) is a way of providing access to monuments (since documents are considered monuments), this study focuses on those with three-dimensional characteristics (dimension expressed in height, length, and width), such as sculptures, busts, bronze plaques, obelisks, etc., and which are located in

federal universities. This approach is based on the concept that access to archival documents related to three-dimensional monuments is a way to help understand the reasons for establishing these symbolic objects and reflect on what they represent and mean to society over time. Therefore, in this study, the term "monument" will refer mainly to objects and structures with three-dimensional characteristics.

Moreover, considering that in the fields of IS and Archival Science, there are many publications dealing with access to archival documents, but on the other hand, there are fewer studies that relate archival documents to three-dimensional objects (which can be archival documents if they have an organic relationship with the set of documents) or to three-dimensional monuments, this study is also relevant for addressing a little topic explored in these areas. We assume that access to archival collections related to three-dimensional monuments can promote the development of reflections and research in dialogues between IS and Archival Science and with History, Education, Museology, etc., thus placing this initiative in the Digital Humanities field.

As for the methodological aspects, this study has characteristics of a qualitative approach since it analyzes the theme inductively, with the process and its meaning as the main focus of the investigation (Silva & Menezes, 2005). Furthermore, it has an exploratory characteristic - as the topic is in a preliminary stage - and its purpose is to provide more information about the investigated subject (Prodanov & Freitas, 2013). Regarding the technical procedures, this is bibliographic research because it was based on already published material (Prodanov & Freitas, 2013), such as journal articles that deal with conceptualizations and characteristics of the Digital Humanities and approaches that establish its relation with IS and Archival

Science. Consulting information about the AtoM tool, mainly through its official website,[1] places the study in the sphere of documentary research, which uses sources that do not aim to analyze the subject in question (Mascarenhas, 2012).

The following section presents conceptualizations and characteristics related to the Digital Humanities and some of its possible relations or dialogues with IS and Archival Science.

2. DIGITAL HUMANITIES, INFORMATION SCIENCE, AND ARCHIVAL SCIENCE: POSSIBLE DIALOGUES

The Digital Humanities can be defined as an interdisciplinary field that, through the knowledge and work of different researchers and other professionals, uses digital technology resources to promote research, projects, and actions to produce new knowledge about human and social aspects. In short, the Digital Humanities is a new domain that announces the complete synthesis between the ancient Humanities and contemporary digital technologies (Tâut, 2017). Cuartas (2017) formulates a definition that leads to a more precise understanding of the aspects of Digital Humanities. For him, Digital Humanities can be broadly understood as encompassing the Humanities, all those school activities related to writing through digital media and technologies that involve processes of production, practice, and analysis of digital media (Cuartas, 2017). Digital Humanities are also seen as a new field that advocates using digital resources for new research possibilities.

1 https://www.accesstomemory.org/pt-br/. Accessed: Feb. 12, 2023.

Galina Russell (2011) states that:

> Digital Humanities is a term that encompasses this new interdisciplinary field that aims to understand the impact and relation of computing technologies on the work of researchers in the Humanities. It is also known as Digital Resources for the Humanities, Computing for the Humanities, Digital and Cultural Computing, and Computing for the Humanities. This new field has become increasingly important in the international academic arena and offers exciting new possibilities for the development of research and teaching in the Humanities (p. 3).

It is noteworthy that the process of adopting computer technologies has been going on for a few decades, but "the concept of Digital Humanities has only been unanimously adopted since 1990. Previously, this domain was described under other names, such as Computational Humanities or Computational Linguistics" (Tâut, 2017, p. 102). Other definitions aid in understanding the breadth of Digital Humanities, according to Cuartas (2017):

a. A non-unified "field" whose ways of relating to information technology have resulted in cyberculture.
b. Multimedia configurations and digital tools have displaced the printing of documents and caused the dissemination of knowledge.
c. Redefining journals and magazines in a digital format and understanding them as web-based transmedia tools.
d. Experimentation in all subjects, including the Humanities, using digital technologies.

Thus, there is no consensus about the epistemological configuration of the Digital Humanities, which are sometimes called "scientific field", "discipline", "field of study", and "phenomenon", among other designations. This turns out to be an obstacle to its delimitation, which can affect its strengthening and consolidation. Tâut (2017, p. 103) explains that no clear normative criteria can delineate, in a decretory manner, the legitimate territory of the Digital Humanities. In sum, this is why we can find other attempts to understand Digital Humanities less exclusionarily, not as an epistemic domain, but as a set of shared values (Tâut, 2017, p. 103). Without a detailed analysis of the epistemological boundaries of the Digital Humanities, but taking as a reference the common purpose of sharing values and knowledge from different areas, the Digital Humanities adopt, among others, the following aims:

a. To create databases of digital resources relevant to the Humanities. This includes data collection, structuring, documentation, preservation, and dissemination.
b. To develop methodologies that allow the generation of new elements from this data.
c. To generate research and knowledge to increase our understanding of the Humanities (Galina Russell, 2011, p. 3).

The goals set by Galina Russell (2011) indicate a fundamental characteristic within the Digital Humanities, which is the availability of data and information in digital media to produce new knowledge in humanities. This conception is relevant since Digital Humanities are not based on the simple automation of tasks and activities using digital resources but on pursuing new ways of learning and

discovery through these tools. Thus, Digital Humanities develop in multiple dialogues. Visconti (2016) points out that the Digital Humanities is a new way of developing existing activities in the humanities thanks to digital technology:

> Digital Humanities includes the work already done in the Humanities (research, teaching, and learning in areas such as Literature, History, and the Arts, all related to our past and present cultural heritage). However, they do this work digitally, as in making and using computer software, websites, and cell phone applications, to teach or help researchers and students (Visconti, 2016).

Specifying her position, Visconti (2016) states that Digital Humanities are not focused 'only' on the digitization of things and adds that Digital Humanities projects generally do so [that is, take on this focus] as a way to study or improve the process of digitization ... create inspiring and valuable ways to interact with these materials online once they have become digital" (Visconti, 2016). Visconti's (2016) considerations reveal how digital resources can make the processing, sharing, and access to information about a given collection, work, or object more dynamic and interactive, adding new ways of acquiring knowledge about humanistic elements. To elucidate how digital resources allow new study and analysis approaches, the following are some examples of projects developed in the scope of the Digital Humanities.

Visconti (2016) mentions the Photogrammar at Yale project,[2] designed to make available thousands of photo-

2 https://photogrammar.org/intro. Accessed: Feb. 9, 2023.

graphs from the North-American Great Depression and World War II hosted by the US Library of Congress. In short, "What Photogrammar does, is to add an appealing interface that makes you interested in looking at these photos, then supports you as you start to have questions you'd like to answer about the photos" (Visconti, 2016, n.p.). Another example is pointed out by Romero Frías (2017), who, when listing the best Digital Humanities projects of the year 2016, presented ILLUMINATED: Manuscripts in the making Toolkit,[3] a project that opens a window into the world of medieval Renaissance painting, with dazzling colors and exquisite details, preserved in the Fitzwilliam Museum (Cambridge). Romero Frías (2017) also mentioned the French Renaissance Paleography project,[4] which presents over one hundred carefully selected French manuscripts written between 1300 and 1700, with tools to decipher them and learn about their social, cultural, and institutional surroundings.

As the examples indicate, the Digital Humanities projects, besides presenting characteristics that favor public interaction with the material made available (more dynamic and interactive), allow the identification of information about the collections and works, which would not be possible without the help of digital technology. A painting, for example, that to the naked eye shows specific colors and strokes, when submitted to a precise digitalization process (or even X-ray scanners), can reveal various information previously indistinguishable, such as the modification of colors over time, the shapes and strokes hidden by layers of paint, the approximate period of creation of the work, the

3 https://www.fitzmuseum.cam.ac.uk/illuminated/. Accessed: Feb. 9, 2023.

4 https://paleography.library.utoronto.ca/. Accessed: Feb. 9, 2023.

composition of the other materials used, as well as details of the composition of the frame, the base fabric, and the bristles of the brush used to create it, etc. In other words, additional information about the work allows a more accurate recognition of its historical, cultural, and social context.

Several Digital Humanities initiatives have started from studies in Linguistics, Arts, and Literature: the first step in the development of Digital Humanities was dominated mainly by linguistic and literary analysis, and this trend will progress with some well-known text digitization and encoding projects (Tâut, 2017). Nevertheless, in the evolution of Digital Humanities, its applications have been broadening to encompass other human and social subjects, which has led to its interaction with IS. The Digital Humanities contain numerous subjects, particularly those closely linked with Librarianship, Information Science, and Computer Science (Galina Russell, 2011). In addition, there is an interaction with Archival Science:

> Research in the field of digital humanities can contribute to the archival field in the way they make archival information available to their users, with innovation and the use of digital technologies coupled with community impact and engagement (the notion of community) as a starting point. By exploring this relationship, a convergent point stands out between this emerging territory of the digital humanities and Archival Science as a scientific field. However, it is still little explored in the archival literature in the Portuguese language (Vieira et al., 2019, p. 50).

Regarding the connection between Digital Humanities and IS, Pimenta (2020) explains that, significantly since the

1990s, with the introduction of the Internet and the use of home computers, in addition to the progressive emergence of social networks, e-commerce, and other institutional representations (in their political, social, and cultural configurations), the web has "digitalized" the social world. Thus, research in Digital Humanities increasingly requires knowledge, dialogue, and a set of actions that give it a transdisciplinary characteristic, which involves IS (Pimenta, 2020). As for the academic and scientific bias, when referring to research developed in IS on the Digital Humanities, Pimenta (2020) states that it is necessary to think of the Digital Humanities as a possible field of study and, in some initiatives, as the very object of investigation of information scientists. After all, digital technology has increasingly mediated society and subordinated to new algorithmic logics of life, resulting in interest in social, political, economic, cultural, and educational studies, which developed from this algorithmization.

Thus, the macro context guided - in an increasingly intense way - by using digital resources influences the conceptions used for the constitution and advancement of scientific subjects, thus emphasizing the need for multiple dialogues. IS and Archival Science, when acting in the processes of organization, retrieval, preservation, and access to information, cannot be unaware of the search for understanding of how society interacts, uses, and appropriates information in a scenario that prizes the digital media.

> The role of the humanist is more critical at this historical moment than ever before, as our cultural legacy as a species migrates to digital formats and our relationship to knowledge, cultural material, technology, and society is radically reconceptualized (Presner, 2010, p. 3).

Vieira *et al*. (2019) explain that digital technologies have created a new field, the Digital Humanities. Besides benefiting from the multiplication of information produced in digital media, this field is consolidated by the increase in digitalization processes and the consequent availability of data originally accessible through analogical media by several institutions, such as archives, libraries, museums, and documentation centers.

When working in institutions that promote access to their collections and information, information professionals must use digital tools to make the interaction between the information elements in their custody and the public more fruitful. Document digitization projects, interactive exhibitions, digital tools that allow detailed analysis of a particular informational object, etc., are resources that assume the development of actions in the scope of the Digital Humanities. Pimenta (2020) points out that IS has as its research objects the resources on which both Digital Humanities and Social Computing depend to accomplish their goals. He also adds that information retrieval and preservation systems, controlled vocabularies, forms of classification, organization, and access to information, as well as other parameters that aim to access, visualize, and retrieve information mediated by their respective technologies, configure a connection of IS to the Digital Humanities in terms of methods, use of systems, and final aims (Pimenta, 2020).

Presner (2010) indicates an element that adds to this interaction between areas, the collaborative bias associated with Digital Humanities projects, which involves different professionals:

> Digital Humanities projects are, by definition, collaborative, engaging humanists, technologists,

> librarians, social scientists, artists, architects, information scientists, and computer scientists in conceptualizing and solving problems, which often tend to be high-impact, socially engaged, and broad in scope and duration (Presner, 2010, p. 3).

Therefore, IS, Archival Science, and Digital Humanities establish relations that can be increasingly tight. The digital media, as it interacts and modifies the ways of creating, organizing, storing, retrieving, and accessing information - activities inherent to IS and Archival Science -, as well as affects society's way of life, requires dialogues, studies, and humanistic reflections, thus leading both areas to similar aims and converging towards the Digital Humanities. As already indicated, this study focuses on monuments located in federal universities. According to Kornalewski (2014), monuments are present in various formats and are carriers of memories, bequeathed by one generation to the following generations. Therefore, it is vital to use them as a source of transformation, making crucial information available for the present and contributing to the evocation and construction of social memory (Kornalewski, 2014). Leite (2021) elucidates that we cannot forget the past, whatever it may be. Many historical monuments exist precisely so that we do not forget because, when we forget them, other narratives about our experiences are superimposed and gain a forced status of "truth", thus opening the side of history to socially shared fraud (Leite, 2021). Therefore, besides the contact with the monument, it is fundamental to have access to documents that help understand the reasons for its establishment, the justifications for the choice of a particular personality or event to be remembered, and other aspects inherent to these symbolic structures. Such access contributes to analyzing

the historical, cultural, and social context that influenced these decisions. In order to discuss applications with a digital perspective that can be developed within the scope of IS and Archival Science and are related to Digital Humanities, the following section presents the initiative of adopting the AtoM platform to access archival documents that deal with monuments located in Brazilian federal universities.

3. ACCESS TO ARCHIVAL DOCUMENTS: FEDERAL UNIVERSITY MONUMENTS AND THE ACCESS TO THE MEMORY PLATFORM

The availability of archival documents, especially those produced and accumulated by public organizations, is essential for people to access information that enables them to exercise their rights, to help them exercise their citizenship, and learn about the history of their society. Archival documents, from their origin to their permanent age/archive, enable readings from a historical, cultural, and sociological perspective. It is in the context of the production and use of documents that the possibilities and functionalities of access are established, and they depend directly on the archival treatment (the performance of the professionals involved in each process) based on the epistemology of Archival Science.

The intention is not to discuss archival treatment (production, classification, description, preservation, evaluation, etc.), but to demonstrate how access to archival information can contribute to the production of knowledge in several areas, thus establishing a scenario of convergence between Archival Science, IS, and Digital Humanities. The proposal of this study consists of using the AtoM platform to make available the archival collections kept in

the permanent archives[5] of Brazilian federal universities, specifically those that refer to the monuments in these organizations. The idea is to use archival documents to support the development of studies related to memory and material cultural heritage in History, Education, and Sociology, among others.

Bellotto (2014) explains that archival documents are testimonies of the lives of institutions and individuals, having an interconnection with society that cuts across government, cultural heritage/historical research, and citizenship. After meeting the goals of the entity that created them, archival documents, if they have evidential and informative characteristics, will be preserved for scientific research, cultural heritage, and social testimony (Bellotto, 2014). Informative and evidential characteristics are preponderantly associated with permanent documents, defined by Bellotto (2004) as historical documents kept in permanent archives and used for historical research (testimony), helpful to administration and historiography in the critical and scientific sense. As for permanent archives,

> There, the rights and duties of the state to the citizen and of the citizen to the state are documented: evidence and testimonies that will be stored. They will be "data" until the research rescues them, turning them into "information", that will be able to demonstrate, after all, how the state-society

5 According to the *Brazilian Dictionary of Archival Terminology*, produced by the Brazilian National Archives (BRASIL, 2005), a permanent file, also called a historical file, is the set of documents produced and received throughout the activities of a person, family, or institution, public or private, regardless of support, which are preserved permanently because of their value.

> relations took place, and analyze, synthesize, critique, and "explain" them (Bellotto, 2004, p. 25).

Considering that federal universities, or a significant portion of them, have permanent archives, the identification of documents referring to monuments - which can be represented by statues, plaques, totems, busts, sculptures, and foundation stones, among others - enables researchers, professors, students, and other citizens to have easier access to records related to these symbolic objects of the society.

These are some examples of documents related to monuments that can be made available online (through digitization or because they are born-digital documents): motions of support from the creators; an exposition of reasons for its creation and construction; inauguration speeches; graphic sketches and execution documents of the work/monument; notes, statements, reports and interviews of the artists/idealists; photographs of the monuments; recordings of solemnities referring to commemorative dates related to the monument; studies and research projects that are based on the monuments and their historical and cultural representations.

Analyzing the features and application potential of AtoM, the developer Artefactual Systems (2023) points out that this platform is a web-based open-source application for archival descriptions that was initially developed on demand by the International Council on Archives (ICA) to encourage the adoption of international standards of description. Since AtoM is open source, any organization that uses it can study, modify, improve, and distribute it, advocating accessibility so that everyone has an important tool to make cultural heritage available (Artefactual Systems, 2023). Figure 1 shows an example of the AtoM tool interface, representing documents described and made available.

Figure 1. Archival documents are described and made available through the AtoM platform. Source: Artefactual Systems (2023), available at https://accesstomemory.org/pt-br/docs/2.7/_images/search-results-objects1.png a

The AtoM platform makes it possible to translate all user interface elements and all database content into multiple languages, and these translations are performed collaboratively by the user community. Because of its multi-repository characteristic, it can be adopted as a tool to describe documents from a specific institution or act as a network/portal, accepting descriptions from several contributing institutions (Artefactual Systems, 2023). Considering that there is a wide range of AtoM users[6] in Brazil and other countries, there is a constant effort to improve the tool, and all updates and developments are made available to the whole community, which means this is collaborative work. On the platform's website[7], you will

6 https://observatoriodocume.wixsite.com/atomnobrasil. Accessed: Feb. 12, 2023.

7 https://www.accesstomemory.org/pt-br/. Accessed: Feb. 12, 2023.

find information about its current, previous, and developing versions, documentation for each version, and a testing environment. In addition, there is a forum, mediated by the developer company, for resolving issues regarding the installation and use of the tool.

Vieira *et al*. (2019) argue that research within the Digital Humanities can contribute to how information is available in the archival field. In this context, innovation and digital technologies are associated with community impact and engagement. This indicates a convergence between Digital Humanities and Archival Science, reiterating the characteristics we pointed out here. Moreover, the relevance of the diffusion of permanent/historic collections makes the information professional, specifically the archivist, an agent responsible for using new techniques and methodologies to access documents and information, and he uses digital resources in this context. Vieira *et al*. (2019) point out that if, in the past, archivists were almost exclusively focused on maintaining archives and assisting researchers in the search for primary sources of information, in the current scenario, the ways of making information available and searching for it, in addition to the needs and profile of archival users, have changed considerably. Santos (2019) points out that, in the face of digital possibilities, the importance of the information professional has increased due to the need for greater care in organizing a large amount of existing information and documentation.

The proposal of establishing the AtoM platform as a digital channel to access permanent documents that refer to the federal universities' monuments is noteworthy for being a tool that meets the international standards for the archival description of documents. In addition, it is open source, thus giving universities that use it the freedom to

study, modify, and adapt it to their needs. The fact that some federal universities already use AtoM is a factor that can favor sharing experiences and adherence to this solution by other institutions. According to a survey carried out in 2022,[8] 10 Brazilian federal universities use the AtoM platform to describe and provide access to their archival documents; this is the case with the University of Brasília (UnB),[9] the Federal University of Santa Maria (UFSM)[10], and the Federal University of Goiás (UFG).[11] In fact, through the AtoM platform of these universities, it is possible to locate documents that refer to monuments instituted in their respective areas. Figure 2 shows an example (obtained from UFG's AtoM).

Figure 2. Documents concerning the construction of a monument at UFG. Source: https://memoria.cidarq.ufg.br/index.php/prestacao-de-servicos-para-a-construcao-do-monumento

8 https://observatoriodocume.wixsite.com/atomnobrasil. Accessed: Feb. 12, 2023.

9 https://atom.unb.br/index.php/. Accessed: Feb. 12, 2023.

10 https://fonte.ufsm.br/index.php/. Accessed: Feb. 12, 2023.

11 https://memoria.cidarq.ufg.br/index.php/. Accessed: Feb. 12, 2023.

Using a digital web-based tool, researchers from diverse regions of Brazil and those from other countries have access to collections dealing with the monuments belonging to federal universities and their social surroundings. Thus, digital dissemination is promoted to value these regions' cultural and documental heritage, thus transforming these collections into support for research and studies. Monuments that might not be identified, recognized, or studied because they are geographically dispersed and/or isolated in several regions of Brazil when they are represented and contextualized in the digital environment utilizing their respective documentary sources, which are organically related to each other, can become objects of study for various kinds of research. Thus, they remain available to any professional or individual who has access to the internet, regardless of the city or country where they are. In addition, there is a continuous availability of the collection, so that access to it does not depend on an appointment or face-to-face consultation; nor does the user have to adapt to the business days and hours of the permanent archives of the universities.

On the AtoM platform, the description of documents occurs through several editable fields (date, description level, scope and content, owner entity, reproduction conditions, etc.) in compliance with archival document description standards. Because of this configuration, the studies developed due to having access to the documents can gradually provide additional information about the monuments. For example, a photograph of a monument on a particular university campus may receive a detailed description, plus explanatory notes and/or other documents. These addendums can address elements related to the history of the monument, the customs at the time

when it was created, the materials used in its construction, the event or personality to which it refers, etc. Organic relations between the documents will be possible as new research and discoveries are made. This makes it possible to increase knowledge about each monument and its respective context.

Leite (2021) explains that cultural heritage exists to remind us not to forget something, to announce the controversies of human history, and to claim the plural diversity of our cultural experience. Thus, heritage grounds aesthetic, mythical, and metaphorical references of the past and present; through them, individuals and societies give meaning to narratives about themselves and others (Leite, 2021). In the case of the analysis carried out in this study, the potential results are mapping and identification of the monuments and their respective characteristics; development of research that indicates which events or individuals have been represented over time by the monuments; fostering, in diverse segments of the academic community and society, the development of critical perceptions, reflections, and questions about aspects involving the representation of history and memory through the monuments; fostering the use of digital media to give visibility and value to the university monuments, as well as the documents related to them; encouraging the appreciation of the historical and cultural heritage through its recognition and understanding; intensifying the use of monuments and respective documents as aids for classes in various disciplines, especially the Humanities; fostering debates about the value and meaning of monuments, as well as about what they represent to society; and promoting discussion and analysis of the factors that define what is considered "worthy" of being remembered and what is left to be forgotten.

Regarding this last aspect, Kornalewski (2014) states that the sometimes intimate or conflicting relations between memory and history move society into a constant political dispute between what should be remembered and what ends up relegated to oblivion. In this dispute, certain choices are elevated and elected as a rigid social record of what should be accepted as truth. In other words, they take on the status of history (Kornalewski, 2014). Along the same lines, Corá (2014) highlights that the cultural assets that integrated cultural heritage, in general, were selected based on their ability to express official history as a supposed synthesis of memory, tradition, and national identity. In addition, the predominance of monuments reaffirming political, religious, and military powers reinforces this version. Cultural assets not belonging to the elites have long been relegated to oblivion (Corá, 2014).

More recently, in the Brazilian context and other countries, actions aimed at replacing or even destroying monuments that represent individuals related to historical processes of slavery and domination of native peoples and ethnic groups have brought up discussions about what these elements symbolize for society. Leite (2021) states that this wave of attacking statues and monuments reveals the emergence of a debate, almost nonexistent in Brazil, about the meaning of public monuments. Heritage is a dispute about what one wants to narrate, remember, exalt, or forget (Leite, 2021). As Le Goff (2013) points out, the document/monument is a product of the society that created it, thus reflecting the correlation of forces within it and resulting from its context. Only with a critical analysis that considers this does its use for collective memory and its scientific use by historians become possible. Thus, the availability of archival collections on the monuments of

federal universities has the potential to offer informational support to the Humanities fields and society as a whole for understanding the various social, historical, and cultural aspects to which the monuments relate. This is also one of the ways to foster a closer relationship between IS, Archival Science, and Digital Humanities.

4. CONCLUSION

Through the topics this study addressed, it is possible to see that Digital Humanities are becoming more important in a society that digital tools have increasingly characterized. After all, this social configuration has repercussions in the scientific fields, especially in the human and social areas, which seek to understand the phenomena that govern society and its humanistic aspects. IS and Archival Science uses digital tools to develop and share their methodologies and studies and, in this way, interact/dialog with the Digital Humanities. More than the use of digital resources for technical tasks, we aim to apply digital technology to produce new knowledge and ways of using information. Therefore, the development of the presented proposal, within the scope of the Digital Humanities and related to IS and Archival Science, may result in relevant contributions to the production of knowledge and reflections about monuments (linked, for example, to the social and political context of federal universities represented by these symbolic elements), as well as in other contributions within the scope of the recorded information.

As for the characteristics of the AtoM platform, they establish a relationship with actions and stances advocated by the Digital Humanities, such as the use of open-access tools, the collaborative approach, and the prioritization of new knowledge production through the potential of

digital technology. Also important is the performance of information professionals in a society increasingly governed by digital media. They should be able to understand and promote the interaction between IS, Archival Science, Digital Humanities, and other related areas, strengthening them in favor of the use and access to information through digital resources and, mainly, reflecting on the process in turn of the production of new knowledge in the Humanities. Finally, we consider that the potential results of applying the proposal presented here are beneficial to federal universities and society as a whole. They allow a more detailed knowledge and understanding of the nuances of their documental and cultural heritage, whose representation elements are archival documents and monuments.

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Digital humanities project proposal: Clipping from newspapers and magazines online and printed about education and the Institutes of Education, Science, and Technology (IFES)

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ABSTRACT
Clipping from newspapers and magazines online and printed about education and the Institutes of Education, Science, and Technology (IFES) is a project at the strategic and planning level of Digital Humanities (HD), presented in the Digital Humanities discipline of the Graduate Program in Information Science at the Federal University of Santa Catarina (PGCIN -UFSC). It aimed to provide society with an open access platform to search for educational information and, especially on the Institutes of Education, Science, and Technology (IFES), based on the monitoring service of news published in newspapers and magazines in digital and printed format. The methodology used for the elaboration of this project is defined as qualitative, bibliographical, and descriptive. The project proposal presented in this article is at a strategic and planning level without addressing issues of execution and feasibility. It is concluded that the clipping service is a news monitoring tool that can be strategic and even fundamental in decision-making processes and research, as well as being a facilitator for research in the field of education and a source of information for future generations. With this tool, there is no need to worry about losing information, considering it will be permanently available.

Keywords: digital humanities; libraries; information services; digital technologies; digitalization; clipping

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1. INTRODUCTION

The use of technology is a historical human fact, and each age had its share of progress and innovation. In recent decades, society underwent expressive changes with the creation and evolution of information and communication technology (ICT). From the ICT advances, human relationship with machines has become customary and often necessary even for survival. The form of this relationship, or its non-existence, highlights the differences between people and communities based on access to these technologies. Vianna and Souza (2018, p. 4899) state that those ICT:

> Can influence (enhance or reduce) domination in all spheres (social, economic, political, cultural, etc.): a) through exclusivity in the hardware and software products; b) by dominating/restricting access to global communications (e.g., internet providers); c) through control of the media and mass media - 1 to N (e.g., digital TV);

ICT encompasses all forms of technology used to create, store, exchange, and use information in its various forms. It usually includes computer technology and telecommunications systems (Viana & Souza, 2018, p. 4898, *apud*

Pinheiro & Ferrez, 2014). ICT is often used for electronic and technological devices, such as television, computer, cell phones, *tablets*, cameras, *flash drives*, *scanners*, etc. With the advent of the so-called digital age (internet and the world wide web), society followed the emergence of new technologies (digital technologies). These technologies are so impactful, transforming people's way of living, working, studying, and modifying how we perform tasks, that the relationship between man and machine changes. This has become the subject of studies and research in various knowledge fields.

Digital technologies are embedded in society at different levels and proportions, with varying degrees of impact on people's lives. In this sense, access to these technologies is directly related to the economic power and location of the individual or institution. The more financial scarcity, for example, the more likely a person is to have less or no access. As for the use of digital technologies, Paletta (2018, p. 148) identified that:

> We quickly adapt to the technological transformations that, without realizing it, are inserted into our daily lives. In addition to changing everyone's private life, this new information age modifies society's social and economic values. This transformation originates from the three following phenomena: the convergence of the technological base (digital processing), the dynamics of the industry (devaluation, popularizing the use of machines), and Internet growth (enabling access to information).

The dominant role of digital technologies in society impacts social relations and results in cultural changes,

creating several terms. Many of these concepts became research topics, such as "digital humanities."

> Digital humanities has flourished in the information age, driven by the exponential growth of digital information sources in the past decade. This newly created area is already an important field that quickly developed through the growing increase of academic centers dedicated to the topic and projects of Digital Humanities (DH). After all, it was created by the need for a more sophisticated and deep reflection on a recent locus of intense and growing activity that, with the advent and subsequent increase of digital technologies, was characterized by its trans and multidisciplinary nature. (Castro & Pimenta, 2018, p. 524)

For Andrade and Dal'Evedove (2020, p. 442), "digital humanities can be defined as the use of digital technologies to humanistic doing [...] a new field of interdisciplinary study, considering its scope and capacity for innovation in the face of technological rise". Although it is a recent topic, research groups have conducted studies on it, and it is reasonable to say that it is a reality. Regardless of concepts, the influence of technology on human behavior is a fact.

2. DIGITAL HUMANITIES

Humanities originate from philosophical thinking in Ancient Greece, with Aristotle and others. In the transition from the 18th to 19th centuries, the Humanities emerged with the human as its science object. In the twentieth century, the classification of disciplines arose within the Human Sciences, such as Sociology, Philosophy, History,

and Linguistics. Thus, understanding the human being and studying man's relationship with the phenomena is not new, and each epoch requires some study originating from changes in society. In the past, for example, the aftermath of two world wars brought up the need for understanding the motives that led men to fight these confrontations resulting in the death of so many people. Changes regarding technology are also a consequence of one of these wars.

> After World War II, the diffusion and use of information and communication technologies accelerated, and knowledge began to be considered and valued as a strategic resource. This new context, called the Information Society, uses "new methods of accessing, processing and distributing information" (Kumar, 1997, p. 15). Barbosa and Paim (2003) explain that the focus on economic resources - such as land, capital, and labor - was transferred to information, which became an organizational resource as important as the others mentioned. (Lemos & Nassif, 2015, p. 32)

The advent of the internet and the progress of digital technologies also triggered phenomena that resulted in studies related to the use of these technologies by men and their impacts on society, especially in human relations and information generation.

> Digital humanities is a term that encompasses this new interdisciplinary field that seeks to understand the impact and relationship of computational technologies in the work of researchers in the Humanities. It is also known as "Digital Resources for the Humanities," "Informatics for the Humanities," and

> "Digital and Cultural Informatics." This new field has become increasingly important in the international academic arena and offers new and stimulating possibilities for research development and teaching in the humanities (Russell, 2011, p. 3).

Digital humanities is a term under study by different authors, research groups, and areas. Their understanding has many similarities, including the sense that it is a new field, as Russell defined it. As for the definition of digital humanities as a new field, Andrade and Dal'Evedove (2020, p. 442) cite the research of Santos and Venâncio (2017): "There is consensus in interpreting the Digital Humanities as a new field of interdisciplinary study, considering its scope and capacity for innovation in the face of technological rise".

> There are several indicators of consolidation of a new field of study. Among them are the formation of specialized associations, organizations, and centers, the creation of academic teaching programs, the holding of congresses, and the publication of designed journals and books. Digital Humanities is increasingly consolidated, and an important international community identifies as "digital humanists." (Russell, 2011, p. 4)

The consolidation of digital humanities as a new field of study led several authors to define it as interdisciplinary. In this sense, it does not merely seek the use of technologies in human practice but also aims to understand the relationship between the humanities and computing.

> In a nutshell, Digital Humanities refers to practices that aim to understand and identify what occurs at the intersection between computing and

> humanities. Its academic achievements share joint interests in studies of technology from the point of view of social, cultural, political, ethical, and philosophical phenomena arising from their use by social actors. It encompasses the broad-spectrum humanities studies through technology, characteristically digital in their processes and stages (Cavalcanti, Sales & Pimenta, 2019, p. 33).

In this sense, Paletta (2018) corroborates the definition that digital humanities are an academic area that links computing to the disciplines of the humanities and that "it can be defined as new computational forms of transdisciplinary academic studies involving research, teaching, and collaborative publication" (p. 148).

According to Palleta (2018, p. 148), digital humanities provide:

> Tools and digital methods for humanities with the recognition that the printed word is no longer the primary means of knowledge production and distribution. By producing and using new applications and techniques, Digital Humanities enables new types of teaching and research while studying and critiquing how they affect cultural heritage and digital culture. Thus, a distinctive feature of digital humanities is cultivating a two-way relationship between the humanities and the digital media: the field employs technology to examine and research humanistic themes.

Cavalcanti, Sales, and Pimenta (2018, p. 34) point out that digital humanities "are reshaping relationships and ways in which and with which we interpret, inquire, and produce human knowledge in its social, political, cultural,

economic, and even philosophical and subjective aspects." Because it is a relatively recent term, as Almeida and Damian (2015) indicate, probably different researchers are working with digital humanities, although they do not use such a term.

2.1 DIGITAL HUMANITIES, LIBRARY SCIENCE, AND LIBRARIES

Historically, libraries and information professionals have sought to adapt and keep up with societal changes, especially regarding information support, preservation, and access. As society becomes increasingly digital and more services from various sectors, including education, are computerized, digitized, and available at a distance, these changes have also impacted libraries worldwide. Russell (2011, p. 4) affirms that "digital humanities encompass many disciplines and, in particular, are closely linked to library science, information science, and computer science." Andrade and Dal'Evedove(2020, p. 441) indicate that, following the evolution and needs of society, Information Science and Library Science have focused on studies, research, and digital humanities projects:

> Digital Humanities became part of Library and Information Sciences as products and services from information retrieval systems converge with the digital environment. However, the observations on how Digital Humanities can act concerning their transversality with Information Science are still imprecise.

As for the evolution of libraries, especially regarding the innovation of their information services, Fonseca (2021) observes "how the practice in offering information products

and services has changed over the decades, both in the aspect of materiality in the use of information media, as well as in the means of communication and transmission to serve the user." Thinking about access to information and devising ways to optimize search for the user is fundamental, and the clipping service can be an alternative.

3. CLIPPING SERVICE AT THE FEDERAL INSTITUTE OF EDUCATION, SCIENCE, AND TECHNOLOGY OF SANTA CATARINA (IFSC) AS DIGITAL HUMANITIES PROJECT

The Federal Institute of Education, Science, and Technology of Santa Catarina (IFSC) is one of the Institutes of Education, Science, and Technology (IFES) created, incorporated, and maintained by the Federal Government of Brazil. The Institutes of Education, Science, and Technology (IFES) are present in all states of the country. They are responsible for a large part of Brazilian scientific production and training professionals in the most diverse areas of knowledge.

Clipping is a term used to define the monitoring service of news. It is a process of collecting information from third parties, such as newspapers and magazines in print, electronic or digital form. This project will use printed and digital media to select news about education and the Institutes of Education, Science, and Technology (IFES).

> Print clipping is the most traditional and best-known format. Basically, it substantiates in clippings of articles published in newspapers and magazines [...] On the other hand, electronic clipping consists of daily monitoring of articles and programs displayed on television and radio. [...] Digital or web clipping consists of monitoring

> articles published in online news portals, blogs, or websites. Theoretically, it is one of the most accessible formats because it is low-cost, easy to produce, and enables virtual archiving (Moreira, Cordeiro & Carvalho, 2018, n.p.).

Clipping can be an important tool in the decision-making processes of private and public organizations.

> Organizations employ business techniques and strategies, such as competitive intelligence (CI) and information monitoring, to keep up with the immense information volume originating from the external organizational environment. In this context, news monitoring (clipping) can offer relevant information about market trends and competitors' actions (Lemos, Barbosa & Borges, 2011, p. 58).

There are companies specialized in this news monitoring service, and it is a common strategy at libraries, especially before the advent of the internet when news published in newspapers in print was the foundation for clipping on printed support.

> With the increasing information volume available in all media and considering how quickly this information becomes obsolete or "old news", clipping eventually became popular among managers. This service is critical for tracking news of interest, which can be archived in databases for immediate or later queries (Lemos, Barbosa & Borges, 2011, p. 65).

Currently, the clipping service at libraries and other information units is possibly reduced or non-existent. With

the possibility of digital resources and online publications, even the service of making printed newspapers and magazines available has decreased significantly in libraries and, consequently, the traditional clipping service. Clipping can aid in various activities, including labor and academia. Rather than excluding it, modernizing clipping can be an interesting approach, especially in information units like libraries. Regarding the proposal of a digital humanities project, Burdick *et al.* (2000, p. 90) reinforce that projects related to the digital humanities should seek to answer some questions, such as:

> What is the plan to support the digital project? Where will it be institutionally allocated and maintained? How will these resources be sustained? What will be the cost of continuing the project if it is permanent, and what possible sources of revenue are there to support it? The work of the teams, students, and consultants, along with the costs of hardware, software, and other materials, must be considered. This includes the intellectual commitments of the main researcher and the community of advisors and collaborators.

This digital humanities project is initially based on the first concepts of digital humanities, considering that, among other things, it proposes the digitization of news related to education and Institutes of Education, Science, and Technology (IFES) in print media. According to Rodríguez-Yunta (2012, p. 38)

> In principle, its purpose was to encompass the creation of electronic resources for the humanities, essentially collecting the processes of digitizing existing materials in the printed medium.

> However, the impact analysis of information technology was added to these disciplines. This second plan reflects the study of the transformation and rethinking of humanistic work in the information society (Hockey, 2004). Therefore, as a new academic field, it transcends the use of computational tools in the humanities, posing its own theoretical or philosophical questions (Leibrandt, 2006).

The project proposal presented in this article is at a strategic and planning level without addressing issues concerning its execution and feasibility.

3.1 FEDERAL INSTITUTES OF EDUCATION, SCIENCE, AND TECHNOLOGY

The Federal Institutes of Education, Science, and Technology (IFES) are educational institutions that offer courses at different levels of education - high, technical, higher, and graduate programs. Distributed throughout the regions of Brazil, some states have two or even more Institutes. In Santa Catarina, for example, there is the Santa Catarina Federal Institute (IFC) and the Federal Institute of Education, Science, and Technology of Santa Catarina (IFSC). Their organizational structure includes the dean's office, campus, advanced campus, innovation centers, and distance education centers.

> Instituted at the moment of the creation of the Federal Network, the institutes have the legal obligation to guarantee a minimum of 50% of their vacancies for technical courses of secondary level, primarily in an integrated form. They must also guarantee a minimum of 20% of their vacancies

> to meet the offer of undergraduate programs and special pedagogical training programs aiming to form teachers for elementary school, focusing on sciences, mathematics, and professional education. Furthermore, they are central in designing technical and technological solutions through applied research and community-focused extension actions to promote local and regional economic and social progress (Brazil, 2021, s.p).

This project is proposed to be carried out by the Federal Institute of Education, Science, and Technology of Santa Catarina, Brazil.

3.2 JUSTIFICATION

In the Federal Institute of Education, Science, and Technology of Santa Catarina (IFSC) libraries, and probably in most information units, the subscriptions for printed newspapers and magazines have ended. The lead newspapers and magazines have online versions, and those exclusively printed are subject to digitization. Consequently, it is possible to gather news from both formats and make them available on the same platform. The clipping service in an educational institution can severely impact research related mainly to education. Given that the proposal is the platform to be open access, it can serve both the IFCS's internal and external community.

Amanda Viscondi, Ph.D. in Literature and Digital Humanities from Purdue University, cautions that using an institutional platform to take advantage of records, analyze data, index content, and promote key materials can significantly impact educational advancement within the institution.

> Digital humanities are not so much focused "just" on digitizing things. Digital humanities projects often do not stop at scanning and putting humanities content like historical newspapers or photos online (although they could stop there and share their learning). Instead, digital humanities projects often do so to study or improve the digitization process or as a prelude to additional research. Digital humanities are usually focused on designing inspiring and useful ways to interact with those online materials once they have been made digital (Visconti, 2016, p. 7).

Accompanying education-related news, especially to the Federal Institute of Education, Science, and Technology of Santa Catarina (IFSC), also fosters analysis and ideas that can contribute significantly to the daily academic life and the entire management of institutional processes at the Federal Institute of Education, Science, and Technology of Santa Catarina (IFSC). It can also contribute to all the other educational institutions, researchers, and other education professionals.

3.3 PROBLEM DELIMITATION

There are numerous newspapers available daily in digital and printed form. For example, without a *clipping* service, no one can use information extracted from news published in these sources to monitor the publications about education. Daily monitoring of all *online* and print newspapers and magazines that are considered, based on previously studied and determined criteria, relevant to the *clipping* service proposed for execution at the Federal Institute of Education, Science, and Technology of Santa Catarina

(IFSC), doing it a new service of the institution for society, requires the application of digital technologies to monitor, select, store, preserve, and make this content available to the entire academic community and external to Federal Institute of Education, Science, and Technology of Santa Catarina (IFSC). Hence, the problem arises: how to monitor, select, store, and make available the volume of information on education and especially on the Federal Institutes of Science and Technology to make this information accessible to all society and future generations?

3.4 OBJECTIVE

To provide society with an open access platform to search for information about education, especially regarding the Institutes of Education, Science, and Technology (IFES), from the news monitoring service published in newspapers and magazines in digital and print media.

3.5 TARGET AUDIENCE

The proposal is to be an open-access platform. The target audience is any researcher or anyone interested in education-related news, especially concerning the Institutes of Education, Science, and Technology (IFES). Clipping can be a vital problem-solving tool for teachers and a source of innovative ideas for other education professionals. It offers an alternative for future generations to access the latest education news in Brazil, enabling them to analyze the relationships, circumstances, and phenomena in the educational sphere of the period more effectively. It also contributes to future generations that will have access to carefully selected, stored, and disseminated organized content.

4. FINAL CONSIDERATIONS

The humanities seek to understand and preserve for the new generations, keeping the memory of humankind, and its historical processes, thus contributing to understanding the digital humanities themselves. More than recording, digital humanities also elicit questions in the humanities and other fields when researching information published, reproduced, and disseminated according to their interests. Understanding these stored records' meanings, motives, and intent is also possible. The methodology used for this process has its influence and directs towards the reflective criticality or informative reading of the records made. However, the digital humanities go beyond registering, storing, and sharing content. They also serve as an investigative study and production of new learning, curiosities, and social and technological political progress in favor of life.

> Digital humanities take the work already done in the humanities (research, teaching, and learning in literature, history, and the arts; everything related to our past and present cultural heritage). But! It does this work digitally, such as making and using computer software, websites, and mobile phone apps to teach or help researchers and learners [...] (Visconti, 2016, p. 7).

It is necessary to realize the possibilities of influence on the organizational attitudes and educational work of the digital humanities. Critical thinking follows the indifferent creative thinking of the professional who is acting. Therefore, it is vital to recognize social-political induction from critical, reflective participation and with possibilities of

interest in the performance of the digital humanities. The clipping service is a news monitoring tool that can be strategic and fundamental in decision-making processes and research. Teachers, researchers, and all those who work or are interested in education and the IFs can make decisions or solve problems based on news consulted daily in clipping or have access to previous news. With this tool, there is no need to worry about information loss since it will be available permanently.

Digital humanities can naturally embrace interdisciplinarity and access transdisciplinarity, given the varied skills that can arise during the construction and implementation of the proposal. It goes through a transformative action in any educational institution's organizational and motivational dynamics. Hence, it creates possibilities to value educational experiences already existing at institutions in an ethical, respectful, and participatory manner, serving as a stimulus to the expansion of the existing educational dynamics, strengthening and qualifying personal and collective training, given the various fields of action and differentiated perspectives that participate:

> As much as I like to work toward what I want my DH to be, I do not want to give anyone the impression that DH is some utopia. It is not better than other fields, but it has in its favor some more ways for people to regularly and actively move the field to be a little bit better at a time (Visconti, 2016, p. 7).

The possibility of considering records, posts, socializations, a work attitude full of values, and world awareness focused on human rights sharing the learning process connected with several people from multiple educational units, permeates the opportunity to see and review their

practice, increasingly giving meaning to a humanistic practice. Digital Humanities is a transdisciplinary opportunity to contribute collectively and consciously to future generations, starting with the present in the face of past experiences, but without making the same mistakes, through ethics, respect, and humanity employing technological and digital tools. The proposal to implement the clipping service at the Federal Institute of Education, Science, and Technology of Santa Catarina (IFSC) aims to be a tool that facilitates decision-making at the institute and other educational institutions, as well as a facilitator for research in the area of education and a source of information for future generations.

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Digital technologies as potentiating tools in the dissemination of information in museum spaces: Impact of the Covid-19 pandemic on museums

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ABSTRACT
This chapter seeks to discuss the digital humanities activity in the museological context, considering the importance of using digital technology tools for information dissemination in museum spaces and highlighting the period faced by the COVID-19 pandemic. The methodology used for the preparation of this chapter is defined as bibliographic and exploratory. Regarding the results obtained, it was possible to determine that using digital technology tools helps in cultural propagation from the informational dissemination of museological institutions in the virtual environment, which was indispensable during social isolation. In this sense, this chapter concludes the importance of using technological tools in the museological environment to reach various audiences without the interference of time/space.

Keywords: digital humanities, technological tools, museum, virtual museums, digital media, social isolation

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1. INTRODUCTION

Seeking to break with the ideals of traditional museology, the New Museology proposes to bring a social bias regarding the development of activities within the museum sphere. Through the Round Table of Santiago, Chile, in 1972, a new way of thinking about museology was emphasized, highlighting the social nature of museums. Given this scenario, it is perceived that museums exist to represent society; in this sense, all their activities must be carried out considering this purpose, i.e., the speeches prepared for the exhibitions, the safeguarding of museological collections, and the museum objectives must be in line with the audiences that museums seek to represent. Following this logic, as spaces at the service of society, museums must always strive to understand the needs of their surroundings to serve them better. Through this perspective, it is perceived that the demands of society change over time, and museums, to continue fulfilling their role, must follow these changes.

An event that highlighted the need for museums to change their dynamics as institutions was the pandemic caused by the coronavirus (COVID-19)[1]. During the period of social isolation, establishments that were considered non-essential had to be closed to cooperate with the non-proliferation of the virus, reducing the circulation of people in cities, and museums fell within this sphere. According

1 Highly contagious respiratory infection caused by the SARS-COV-2 virus.

to United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2020), the emergence of the coronavirus caused 90% of the approximately sixty thousand museums in the world to face the complete, partial, or eventual closure of their spaces.

> In this new scenario, virtual communication took on a new meaning due to the imposition of isolation and social distancing. With the use of the digital environment as the only way for museums to communicate with their audiences, a series of factors emerged that raised some discussions permeating virtuality (Silva, 2021, p. 1)

From this context, museums underwent and still go through significant challenges in their various sectors, ranging from public service to safeguarding museum collections. Due to these circumstances, museums had to seek new methodologies in developing their activities and delivering services directly linked to their interaction with their audiences. Thus, services that previously took place through physical spaces had to be transferred and rethought to virtual spaces that were in line with the recommendations of sanitary safety standards established by the World Health Organization (WHO). This circumstance brought a new perspective on the delivery of museological services, which should work beyond the physical space of the museums. In addition to the change in the operating format of museological institutions and the delivery of their services, the social isolation period also highlighted other previously discussed issues regarding museums' existence in completely virtual settings.

Through this chapter, we intend to address digital humanities in the museological context, from the discourse

on the importance of using digital technology tools to maintain the services offered by museums. We seek to understand the impact of the use of digital platforms to fulfill the social function of museums, taking into account the adaptation of museological services in this new format and the impact of museums during the period in question. For such, a brief literature review on digital humanities within the sphere of museology will initially be carried out, seeking a general apparatus to substantiate the other subjects addressed throughout the chapter. Subsequently, the pandemic's impact on digital technology tools will be discussed, more precisely, their relationship with the consumption of cultural activities and the search for museum spaces in the virtual sphere during the pandemic. Sequentially, this article seeks to present the museums most searched on the Internet by Brazilian users during the period of social isolation, as well as the performance of the activities established by these museums in the virtual environment, to realize the impact of the use of technological tools in disseminating museum information during the period in question.

2. DIGITAL HUMANITIES WITHIN THE SPHERE OF MUSEOLOGY

Digital Humanities are configured today as a field of knowledge under construction that seeks to relate the Humanities to the digital environment. Palleta's (2018, p. 148) definition suggests that digital humanities may be understood "as new computational forms of transdisciplinary academic studies that involve research, teaching, and collaborative publication."

> Digital Humanities arise from reflections on the contemporary reality of technological presence

> within the sphere of traditional sources of information previously enjoyed only in their physical format. It is a movement that, by impacting the fields of Human and Social Sciences, leads to the perception that research is now mediated by technology (Palleta, 2018, pp. 148-149).

Even though it is a somewhat current subject, there are already several definitions of digital humanities, so there is still no consensus on its conceptualization; however, in general terms, digital humanities use digital technologies to expand the pre-existing knowledge in its areas of activity. Included in the scope of digital humanities is Museology, a knowledge area of Applied Social Sciences that aims to bring understanding about social aspects related to humanistic realities. From the thinking established by the museologist Waldisa Rússio Camargo Guarnieri (1935–1990), as a discipline, Museology was inserted into the scope of social studies (Lupo, 2020). According to her, the object of study of museology is the museum fact, which is defined as follows:

> [...] the profound relationship between man, the knowledgeable subject, and the object, part of the reality over which man acts. This relationship involves several levels of consciousness, and man may apprehend the object through the senses: vision, hearing, and touch (Rúsio, 1981, Apud. Bruno, 2014, p. 1).

This relationship between the human being and the object occurs within the museum space. It uses Museology study methodologies and seeks to exercise functions related to a social bias through the performance of its activities. By appropriating the use of digital technology tools, museums

provide their spaces with improvements in the development of their activities, thus leading to higher quality in the delivery of their services to their audiences since the digital environment allows greater access to information, in addition to being a support tool for the performance of more dynamic activities, given that its support enables the creation of various actions within the virtual sphere. Thus, considering museums as institutions that exercise social functions that refer to the cultural propagation and informational dissemination of their collections, museums seek to use digital technologies to have a better resourcefulness of the activities that occur in their spaces. In this sense, we observed the activity of digital humanities in the museological environment. Digital technologies benefit several fields of activity by allowing greater access to information, which is no different within the sphere of museology.

The COVID-19 pandemic pointed out the need for museums to further appropriate the virtual space to strengthen the ties between the museological institutions and their audiences, highlighting the use of such tools that were already somewhat needed but only proved essential at the time faced by social isolation, indicating, in a way, a mandatory condition for the continuity of museum activities.

3. METHODOLOGICAL ASPECTS

This is bibliographic research of a basic nature, given that it aims to "generate new knowledge useful for the advancement of science without practical and foreseen application" (Prodanov & Freitas, 2013, p. 126). As for its objective, it is identified as exploratory research since it aims to "provide greater familiarity with the problem, rendering it explicit or building hypotheses about it" (Prodanov & Freitas, 2013, p. 127). Initially, a brief survey was carried out on

the theme of digital humanities within the museological sphere to generate a basis for the matters discussed later. Then, the cultural habits of Brazilians amid the pandemic and their relationship with the search for museums in the virtual sphere are discussed. Finally, using Google Trends data[2] provided to the magazine *Estadão*, the services of the five most sought-after museums during social isolation were analyzed to observe whether they remained active during the social isolation period.

4. IMPACTS OF THE PANDEMIC AND THE USE OF DIGITAL TOOLS WITHIN THE MUSEOLOGICAL SPHERE

The arrival of the pandemic in the world significantly impacted society's life, motivating the increase in users in the virtual environment, who started to become partially or entirely dependent on using the Internet to carry out daily activities. "The COVID-19 pandemic has substantially altered the habits of the Brazilian population related to the Internet" (Centro Regional de Estudos para o Desenvolvimento da Sociedade da Informação [CETIC], 2012, p. 64). According to the *Agência Nacional de Telecomunicações* (ANATEL, the Brazilian National Telecommunications Agency, in English), Internet use in Brazil increased from 40% to 50% during quarantine (G1, 2020). With the closure of several establishments considered non-essential, there was a change in the work format, which started to be carried out online, called Home Office. Courses were adapted to the distance learning format, and shopping started to be carried out mainly via the Internet, as did medical consultations and other everyday activities.

2 Platform that allows viewing the trending and most searched terms on the Internet according to a timeframe

The use of digital technologies was the means found to continue activities that previously only took place in person or partially thus; however, the performance of such activities in the virtual environment has already proved necessary and expanding. But the advance of the use of digital technologies was impacted by the beginning of the pandemic, and this contributed to the continuity of everyday activities that somehow affect how people live.

> Telecommunications are a significant source to contribute to the development and growth of national economies, businesses, and society, and it is necessary to recognize that the ICT infrastructure, tools, and knowledge allowed a better response to the COVID-19 crisis more effectively and decisively than would have otherwise been possible (Anatel, 2021, p. 11).

Besides activities related to work and studies, which were significantly impacted during the period of social isolation, cultural habits related to leisure time were also affected to a certain degree, considering that some required displacement to be performed. A study developed by a partnership between Itaú Cultural and Datafolha (2020) revealed that the pandemic interfered with the cultural habits of Brazilians. The study aimed to analyze the following factors:

> Cultural habits before the pandemic and expectations for their practice after the reopening of the spaces dedicated to cultural activities and entertainment; possible needs to adapt such spaces; motivators for the return to the practice of cultural activities outside the home; consumption of cultural activities in the digital environment (Itaú Cultural, 2020, p. 3).

The study was conducted from a telephone approach with men and women from 16 to 65 years old, including all economic classes. A total of 1521 interviews were conducted based on the evaluation of ten cultural activities, namely: music performances/musical shows; circus performances or shows; dance performances or shows; children's activities; library; cultural centers; movie theaters; theater performances or shows; museums; and poetry, literary, or musical soirées (Itaú Cultural, 2020). Based on the interviews, "92% of respondents performed at least one of the activities studied, 52% in the 12 months before the survey" (Itaú Cultural, 2020, p. 14). Figure 1 presents the list of the intention of respondents to carry out specific cultural activities, as well as the percentage relative to cultural activities carried out within the previous twelve months and their potential of being carried out after the opening of the spaces.

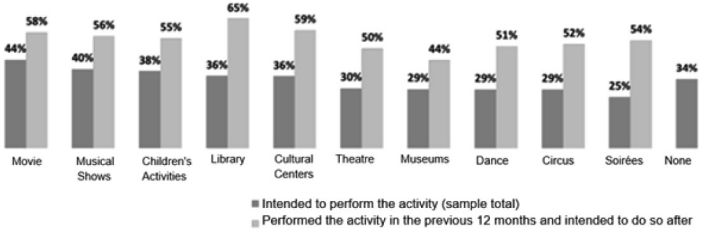

Figure 1. Chart of the potential per activity of interest to the audiences. Source: Itaú Cultural and Datafolha (2020).

From the sample of 1521 interviews, the survey in question pointed to going to movie theaters as the activity with the most significant potential to be carried out (44%), followed by music shows and children's activities. The visit to museums appeared with 29% of intention and 51% considering having done so within the previous twelve months and the choice to go after the museological institutions

opened. This was based on question 26 of the questionnaire: "What activities would you be interested in doing online?" (Itaú Cultural & Datafolha 2020, p. 49), considering only users who had access to the Internet (1461 of the 1521 respondents) and the indication of five activities preferred by respondents (Figure 2).

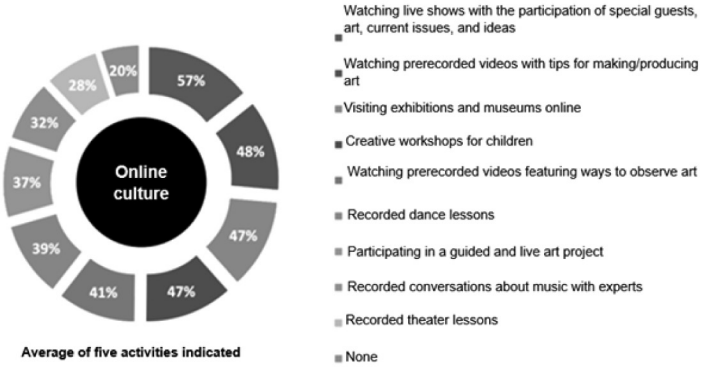

Figure 2. Chart of the interest in online cultural activities. Source: Itaú Cultural and Datafolha (2020).

Based on the chart above, regarding the appreciation of cultural activities in the online format, respondents were very interested. First, in watching live shows with the participation of guests discussing artistic subjects (57%), followed by watching prerecorded videos on the art theme (48%) and visiting exhibitions and museums online (47%). Supported by the survey, one may observe that the respondents' interest in visiting virtual cultural exhibitions and museums represents a large percentage of the activities listed within the virtual sphere. With the pandemic's beginning, society was inclined to look for cultural activities within the virtual sphere. Regarding museums, one may say that museum spaces that appropriated technological

means to continue their activities were able to reach different types of audiences, both those who already had the habit of visiting museums in their physical spaces and began to use the Internet to continue consuming such content online, as well as those who did not have such a habit or had never visited a museum. Hence, one may notice that the virtual sphere can significantly benefit people.

The fact that an exhibition or a museum exists from virtual support does not prevent people from enjoying these environments just because they are not physically present in an exhibition space because virtuality "allows that people, collectivities, and information become 'non-present', which enables a process of deterritorialization. Removed from the physical space, the virtual is not just imaginary, as it produces effects on the subjects" (Silva, 2021, p. 5). In this sense, the use of digital technology tools brings people closer to these spaces, as does the existence of virtual museums, virtual exhibitions, and the tools that support physical museums' activities. In addition, as a virtual support system, the Internet causes the time and space barriers to not be something that interferes with the experience of its users, leading, in the example of museums, people who are in Brazil to have access to exhibitions of the Louvre Museum, France, through the Internet.

From the search made in Google Trends using the search term "*museus virtuais*" (virtual museums) in Brazil from the beginning of 2019 to December 2021[3], it was possible to observe significant peaks of searches referring to the term, precisely in the period of social isolation.

3 The chosen period was justified by the intention to visualize the search for the term in three different periods: before, during, and in the current pandemic scenario, with the reopening of cultural establishments and spaces being carried out.

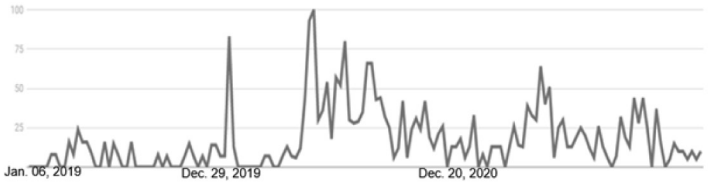

Figure 3. Chart of the search for the term "museu virtual" (virtual museum) on the Internet (2019–2021). Source: Google Trends (2021).

Figure 3 shows that the search for the term "*museus virtuais*" (virtual museums) throughout 2019 was relatively low. There was an increase in interest at the end of the same year, on December 29. In 2020, the search for the term proved quite evident relative to the previous year, with a high search frequency at the beginning of the year and some fluctuations between high and low peaks. However, interest in the search for the term remained throughout the year compared to 2019. In 2021 the search proved noticeable, demonstrating increased interest throughout the year. Still, based on the chart generated by Google Trends, we may suggest that the pre-pandemic year identified a low interest of the Brazilian population in virtual museums since none were closed due to the pandemic, thus, ensuring access for their audiences in their physical spaces. At the beginning and end of 2020, some interest of the population in virtual museums was observed; concomitantly, Covid-19 arrived in Brazil, sequentially resulting in social isolation. The beginning of the pandemic, March 2020, was the month that had the most searches on the Internet for virtual museums. Everything indicates that this was due to tackling something new, in this case, the situation of social isolation, when society sought numerous ways to consume services from what was being made

available in the digital environment. In 2021, the search for virtual museums seemed to have become popular, so much so that it was maintained throughout the year.

With this, one may understand that the pandemic factor substantially increased the use of the Internet, which consequently interfered with the cultural habits of society, causing it to start looking for cultural services and activities in a virtual environment. In relation specifically to museums, there was a greater interest in society in searching for virtual museums, virtual exhibitions, or other activities within the virtual sphere. This highlights the importance of making museological content available in this medium. This makes it easier for information to reach society, providing proximity between museums and society. The creation of virtual museums and museological services within this sphere does not cause society to distance itself from the physical spaces of museums; on the contrary, the use of virtual technology tools allows several people to have access to such content, which encourages these audiences to consume cultural content both in the virtual and physical spheres. However, it is necessary to bear in mind that Internet access and cultural content available in the virtual environment are not yet a reality for everyone considering that Brazil is still a country with much social inequality. This shows that many people still do not have access to the Internet and thus cannot have the experience of visiting museums, even through online exhibitions or other online cultural experiences. In its 16th edition of the *TIC Domicilios*, the Regional Center for Information Society Development Studies (CETIC) pointed out that the data obtained in the survey regarding ICT access in Brazilian households and its forms of use are evidence of social inequality.

> The survey data showed that the migration of in-person activities to the digital environment due to social distancing measures led to increased demand for the Internet in households and the proportion of Internet users and activities carried out online during the period. But the data revealed the persistence of digital inequalities that affect the appropriation of ICTs and the opportunities resulting from their adoption by different population segments (CETIC, 2020, p. 27).

At this point, it is vital to bear in mind that the struggle to combat social inequality and the demand for equal rights considering the use and belonging of cultural spaces must be carried out for the appropriation of people in both physical and virtual spaces, given that "it is noticed that social inequalities are also manifested in the digital environment, with the potential to restrict opportunities" (CETIC, 2020, p. 28). In an open letter, the International Council of Museums (Icom-Brazil), given the pandemic situation that the world was facing, stressed that: "museums must rethink their role in the face of the economic impact and the inequality gap exposed among us, recognizing their responsibility for Brazilian social and cultural regeneration" (ICOM-Brasil, 2020 n.d), and showed that, in the post-pandemic future, "solidarity will be essential for the construction of a more egalitarian, diverse, and inclusive world" (ICOM-Brasil, 2020 n. d). In this sense, it is understood that the virtual environment can reach many people. However, there are still some gaps to be bridged so that access to the Internet and the content made available in this medium is perceived as a right of every citizen and achieved by everyone.

4.1 Performance of museums in the pandemic context

An article published by the magazine Galileu in May 2019 pointed out that Brazilians' number of searches for virtual museums grew. Google Trends data provided to the magazine Galileu indicated: "Searches for remote visits to institutions increased by 50% in the last 12 months compared to the previous year" (Galileu, 2019 n.d). According to the survey provided by Google Trends, Brazil was one of the 20 countries that most performed searches for virtual museums worldwide during the period of social isolation, divided between national and international institutions (Galileu, 2019). From this, the article made available the list of the most searched museums during this period of 12 months before the publication of the article, which were divided into two lists, one with searches for museums along with the word "virtual" and the other with the list of museum searches in general. In this sense, the list of the most sought-after museums by Brazilians, along with the word "virtual" was the following:

1. Louvre Museum (France)
2. Pinacoteca de São Paulo
3. Ipiranga Museum
4. National Museum
5. Masp
6. Prado Museum (Spain)
7. Museum of Tomorrow
8. Catavento Museum
9. Imperial Museum
10. British Museum (United Kingdom) (Galileu, 2020, n.d).

The second list, which refers to the museums most sought after by Brazilians in general, was the following:

1. MASP;
2. Louvre Museum;
3. Pinacoteca de São Paulo;
4. Museum of Tomorrow;
5. Inhotim Institute;
6. The Metropolitan Museum of Art (The Met);
7. Catavento Museum;
8. Ipiranga Museum;
9. Prado Museum;
10. Museum of Modern Art (MoMA) (Galileu, 2020, n.d).

Based on the list of the most searched museums in the first list, which referred to the search for museums along with the word "virtual", the first five museums listed were selected to analyze each of them and investigate how they dealt with the moment faced by social isolation, seeking to visualize the mechanisms used for the continuation of their activities in the virtual environment, such as using social media and digital platforms, among other virtual supports to meet the demands caused by the pandemic.

4.1.1 Louvre Museum (France)

The Louvre Museum is located in the Louvre Palace, in the capital of France. It is the largest art museum in the world, with approximately 38,000 objects from prehistory to the twenty-first century. The museum was inaugurated on August 10, 1793, totalizing 228 years of history.[4] Regarding the virtual environment, the museum has active Instagram, Twitter, and Facebook profiles; in addition to using social media, the museum also has a website and is

4 Louvre Museum, Paris, France. Available at: https://www.britannica.com/topic/Louvre-Museum. Accessed on Dec. 22, 2021

inserted on the *Google Arts and Culture* platform[5]. During social isolation, the museum continued to use social media to communicate with its audiences through publications about its collections. It also made its entire collection available for online visitation by accessing it through a website that organizes the collections by typology[6]. On the museum's official website, possible activities to be carried out at home were inserted, identified by the Louvre at Home tab, such as events in the museum auditorium through online exhibitions; podcasts about the museum collections. Louvre Kids, which has children's stories; and the virtual reality experience "Mona Lisa Beyond The Glass", an application that allows a virtual reality experience on the techniques of Leonardo Da Vinci when painting the Mona Lisa and may be downloaded to smartphones.[7] In addition to using social media and the activities inserted in the museum's website, it is also available on the Google Arts and Culture platform, allowing the user to access the works in the museum's collections through photographs[8].

4.1.2 Pinacoteca de São Paulo

The Pinacoteca de São Paulo is a museum of visual arts located in the Luz Station in the city of São Paulo. The museum was founded in 1905, thus being the oldest art

5 It is a free online collaborative platform from Google that allows visiting museums and galleries worldwide through virtual tours using the Street View technology.

6 https://collections.louvre.fr/en/. Accessed on Dec. 22, 2021.

7 https://www.louvre.fr/en/online-tours. Accessed on Dec. 22, 2021.

8 Louvre Museum. Available at: https://artsandculture.google.com/entity/museu-do-louvre/m04gdr Accessed on Dec. 22, 2021.

museum in the city, having, at the time of writing, about 11 thousand items.[9] Regarding the use of social media, the museum has active accounts on Instagram, Facebook, Twitter, LinkedIn, Spotify, and TikTok. In addition to the mentioned social media, the museum has a website and is available on the *Google Arts and Culture* platform. Since the beginning of the pandemic in March 2020, the museum has proved very active, using virtual means to maintain contact and activities with its audiences. With the creation of the #pinadecasa project[10], the museum began to carry out daily publications on its social media, such as *Instagram, Facebook,* and *Twitter*, about the various works in its collections, along with images and comments from curators. During this period, the museum also began holding weekly live chats with curators, artists, and philosophers on its channels.

Another activity to be highlighted, developed within the #pinaemcasa project, was the #pinaemcasa-acustico, the proposal of which aimed to invite people from different areas to select a favorite work from the collection and create a playlist that would be made available on *Spotify*, relating the work to the songs so that the audiences could appreciate the chosen work through a "soundtrack". The director of institutional relations of the Pinacoteca, Paulo Vicelli, said that during the period of social isolation the museum reinforced its online presence, so much so that the data show that, due to the #pinaemcasa project, the period from March to April 2020 registered a growth in the numbers of followers on the museum's social media accounts, pointing to twelve thousand new followers on

9 About the pinacoteca. Available at: https://pinacoteca.org.br/a-pina/7200-2/. Accessed on Dec. 22, 2021.

10 Hashtag used in the social media of the Pinacoteca de São Paulo

Instagram alone (O Estado de S. Paulo [Estadão], 2020). In addition to the activities made available through social media, which yielded much engagement, the museum also makes available on its website some exhibitions that may be visited through a virtual tour[11] accessed by smartphone and computer. At the beginning of the pandemic, it recorded a fivefold increase in the number of accesses to its website – jumping from 1,000 to 5,000 in March (Cable News Network [CNN], 2020, n.d) due to users' interest in accessing virtual exhibitions. Also on the museum's website, there is the *Museu para Todos* (Museum for All) project, where actions developed by the museum's Educational Action Center are made available; the project proposes to create content that relates art and education, so one may find educational texts, animated videos, games, and didactic materials for teachers, among other materials.[12]

Another means of dissemination and availability of the museum's actions are on the *Google Arts and Culture* platform, on which several works are available and categorized by typology of painting techniques. Also available on the platform are several online exhibitions, which allow the user to view the techniques applied in the works, followed by the description of these techniques. In some of these exhibitions, it is possible to be audio guided to interpret the content. Finally, it is possible to visit the museum rooms through the virtual tour available on the platform.

11 Virtual Tour: https://pinacoteca.org.br/visite/tour-virtual/. Accessed on Dec. 23, 2021.

12 Museu para todos: https://museu.pinacoteca.org.br/. Accessed on Dec. 23, 2021.

4.1.3 Ipiranga Museum/USP Paulista Museum

The Ipiranga Museum, also known as the University of São Paulo (USP) Paulista Museum, located in the city of São Paulo, is one of the university's museums. In 1963, the State Museum was integrated into the university; since then, the Edifice – Ipiranga Museum – and the Republican Museum of Itu started to be managed by the university. At the time of writing, the museum safeguarded about 450 thousand items.[13] At the moment, the museum is closed for restoration. Still, it remains active on its virtual channels to inform its audiences of the progress of the repair and expansion and the expected dates for the museum's reopening. The museum has active accounts on Instagram and Facebook, a website, and is on the *Google Arts and Culture* platform. Given the pandemic, although it was closed for some time before due to the restoration, the museum used social media to get closer to its audiences. The publications made by the museum included photographs of the collections, along with descriptions that contextualized such collections, old and current pictures of the building showing the restoration process through which the museum was going through, and photographs of the museum staff with an explanatory description of the work done by museum professionals.

Through social media, live chats were carried out with the museum director along with guests to discuss topics about museums in the digital age. Videos were also made available on these platforms about the restoration and expansion processes of the museum, identified as *Diário de Obra* (Construction Journal), which were made available by episodes, nine of which had been published at the

13 USP Paulista Museum: https://www.mp.usp.br/museu-paulista-da-usp. Accessed on Dec. 24, 2021.

time of writing. Through publications on the museum's social media, it was suggested to its users the possibility of accessing lectures, publications, and educational materials available on the museum's website, with open access to all materials.[14] On the museum's website, it is possible to take a virtual tour of the museum in its current state – in the process of restoration – as well as view the timelapse of the process. In addition to using social media and the activities available on the museum's website, it is also possible to access other activities available on the Google Arts and Culture platform. Through the platform, it is possible to access some online exhibitions and view collections of works organized by art typology.

4.1.4 National Museum

The National Museum, located in the São Cristóvão Palace in Rio de Janeiro, was inaugurated in 1818, thus being the oldest museum in Brazil. On September 2, 2018, the museum had a catastrophic fire, compromising most of its collections. Before the fire, the museum had more than 20 million museological objects of the most varied typologies, including natural history, anthropology, and archeology. The Federal University of Rio de Janeiro managed the museum. It was closed when writing, seeking solutions regarding possible restoration of the building and restructuring its collections through excavations around the museum and donations. As the museum was already closed in 2018 due to the fire, some of its exhibitions took place in other spaces, such as the National Archives, the Museum and Cultural Center of the Brazilian Mint, and the Museum of

14 Publications and Videos by the Paulista Museum: https://www.mp.usp.br/publicacoes. Accessed on Dec. 24, 2021.

Astronomy and Related Sciences. As soon as the pandemic state was decreed, the museum informed through its pages of the temporary closure of its exhibitions.[15] The museum has active accounts on Instagram and Facebook, a website, and is on the *Google Arts and Culture* platform. Since the tragic event that compromised the building, its collections, and its activities, the museum began to use social media and the website to communicate with its audiences, thus continuing to perform its social function. Through these channels, the museum presented the intensive work of several professionals in recovering museum collections, which generated the "*Resgates*" (Recoveries) documentary, available on the UFRJ WebTV channel on YouTube.[16]

With the beginning of the pandemic, and consequently the closure of the exhibitions of the museum's collections, it started using social media to remember old museum exhibitions, presenting some of its collections, performing live chats with museum employees and researchers, and holding webinars[17] and activities for children based on interactive video publications. The National Museum also offers *stricto* and *lato sensu* graduate programs, being master's and doctoral degrees, with research projects and groups carried out within each program[18]. In this sense, the activities related to teaching continued to be carried out through distance learning,

15 Temporary closure of the exhibitions of the National Museum: https://www.instagram.com/p/B9zpDruJTql/. Accessed on Dec. 27, 2021.

16 Resgate Documentary: https://www.youtube.com/watch?v=-JvOPs4De4Sk. Accessed on Dec. 30, 2021.

17 Videoconferencing widely used in the period of social isolation. Kind of seminar presented through the Internet.

18 National Museum – Graduate Studies: https://www.museunacional.ufrj.br/dir/posgraduacao.html. Accessed on Dec. 30, 2021.

as well as research projects. In this sense, the museum used social media to update its audiences on the development and advances of the research projects previously carried out in the museum space. In addition to the actions that the museum developed and is developing through the use of social media, it also uses its website to perform various activities, such as providing news about the progress of the restoration works of the building that housed the museum, making available publications of books of the museum and notices of the graduate program, providing news on seminars and live chats of the museums, and providing access to virtual exhibitions. On the Google Arts and Culture platform, it is possible to access a virtual tour of the museum before the fire, as well as the history of symbolic objects and collections of the museum.

4.1.5 São Paulo Museum of Art Assis Chateaubriand

The São Paulo Museum of Art (MASP) was inaugurated in 1947 and is one of the museums of most significant artistic relevance in Brazil, bringing together "more than 11 thousand works, including paintings, sculptures, objects, photographs, videos, and clothing from various periods, covering European, African, Asian, and American production"[19]. Regarding the use of digital platforms, the MASP has an active profile on Instagram, Facebook, and Twitter, has a website, and is on the *Google Arts and Culture* platform. At the beginning of the social isolation, thinking about the continuity of its activities, the museum developed a digital program in which the museological informational services were carried out for a 100% online delivery.

Among the activities that made up the online program, the museum developed the action "Masp [Drawings] at

19 About : https://masp.org.br/sobre. Accessed on Dec. 30, 2021.

home," held on the museum's Instagram profile. The purpose of which was for its followers to perform reinterpretations of the posted works that were later published on Instagram after a selection. The selected authors received as a prize a voucher entitled to unlimited admission to the museum for one year. Another activity carried out in the museum's profile was the "dialogues in the collection," through virtual meetings, the works that make up the museum's collection were presented, discussing elements of the pieces and characteristics of the artists. On the Instagram profile of the museum, live chats were held with guests who discussed artistic trajectories, the history of the MASP, e-exhibitions, and specific works. The museum also began to carry out publications of its collections, presenting the historical context of a given work.

In addition to using social media, the MASP has an application entitled MASP Audios that composes about 150 comments from curators, artists, professors, researchers, and children about the works in the museum's collection.[20] On the museum's website, it is possible to access information about the courses offered by the museum, books published by it and available for purchase, information about the museum's exhibitions, the online consultation of the collection, and news in general on the museum. On top of these online means of communication, through the Google Arts and Culture platform, it is possible to access virtual exhibitions of the museum and carry out a virtual tour of the museum space. One may take a virtual reality tour of the museum through the Google Arts and

20 #maspdigital: https://masp.org.br/eventos/digital. Accessed on Dec. 30, 2021.

Culture application. Various museum collections are also organized by collection typology on the platform.[21]

4.2 Activity of the museums in the virtual environment

Second the Ibermuseus survey on the impact of COVID-19 on Ibero-American museums, 73% of participating museums declared they had to readjust their activities due to the restrictive measures.[22] Of the museums listed above, only the Louvre is not part of the Ibero-American museum group. Still, it also underwent modifications to the delivery of its services, just as the others listed. According to the description of the activities carried out in the museums during the period of social isolation, it was possible to observe that all five museums described used digital platforms in their favor and continued to deliver services virtually to their audiences, starting from the creation of new services or the adaptation of old ones.

Both the Ipiranga and the National Museums were already closed before the period of social isolation due to restorations, so these museums had already advanced in using virtual means to communicate with their audiences and perform activities in the virtual environment, given that the buildings that house the museums would take time to return to receiving visitation in their spaces. This factor indicates the importance of using digital platforms for museological institutions, as both museums did not cease

21 São Paulo Museum of Art Assis Chateaubriand: https://artsandculture.google.com/partner/masp. Accessed on Dec. 30, 2021

22 What museums need in times of physical distancing: http://www.ibermuseos.org/pt/recursos/documentos/o-que-os-museus-necessitam-em-tempos-de-distanciamento-fisico/. Accessed on Jan. 04, 2022.

to exist due to the closure of their buildings but appropriated technological tools to emphasize that museums go beyond the walls that support them. After the closures of their physical spaces due to social isolation, the other museums also used the virtual environment to reach audiences from different regions, both from a national and international point of view. They appropriated digital technology tools to develop various actions through social media, websites, and other digital support platforms. Therefore, it may be considered that using these digital mechanisms led these museums to be the most sought after by Brazilians, considering the diversity of activities performed in entirely virtual environments for their audiences.

5. FINAL CONSIDERATIONS

The COVID-19 pandemic highlighted the need for organizations to rethink the delivery of their services, considering making them available from digital platforms. This matter was already proving necessary, but with the pandemic, it became crucial, as it changed the form of consumption of society on various levels. Regarding the consumption of cultural services, people began to search more about virtual museums and exhibitions, searches that were not so evident in the year before the pandemic. In this sense, as institutions at the service of society, museums had to draw up new methodologies for delivering services to their audiences that would benefit society and the museological institutions themselves, given they would have greater reach over the access to their institutions and collections.

Therefore, for museums with physical spaces, digital technology tools within the museological sphere may be used as support mechanisms for the services performed in the museum or even extension services, considering the

multitude of services that may be developed only in the virtual environment. Moreover, digital platforms are also used to house entirely virtual museums. This format has been intensifying recently, so much so that, in the context of the pandemic, virtual museums emerged on this theme, which is the case of the *Covid Art Museum*, created to provide cultural content during social isolation. Finally, one may state that the digital humanities activity within the museological sphere is indispensable to meeting the demands of society. Digital technology tools allow the approximation of museological institutions to their audiences, thus allowing museums to perform their social function more effectively. In addition, the availability of content, collections, and activities in the virtual environment provides information dissemination, which contributes to the cultural propagation of museums and allows the exchange of information between museological institutions, thus strengthening the cultural realm.

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Proposal for a National Bank of non-prosecution agreements

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ABSTRACT

The complexity of the modern world, with the advance of Information and Communications Technologies, has brought to light a new area of human knowledge, the so-called Digital Humanities. Despite the many difficulties of conceptualization, in synthesis, Digital Humanities introduces digital technologies applied to Humanities courses. Digital Humanities can be used within the scope of the Anti-Crime Package (Law nº 13,964/2019), specifically in Non-Prosecution Agreements. The absence of communication channels between the 29 Public Prosecution Offices that can sign such agreements prevents verifying individuals who have already signed them. Thus, one of the legal requirements of this measure cannot be guaranteed. This article aims to propose a National Bank of Non-Prosecution Agreements within the scope of Digital Humanities and Knowledge Organization for consultation purposes by the agencies involved and the general population, an initiative to be coordinated by the National Council of the Public Prosecution Service.

Keywords: digital humanities, knowledge organization, non-prosecution agreements, National Bank, public prosecution service

1. INTRODUCTION

Information and Communications Technologies (ICT) permeate practically all aspects of modern life (Damian et al., 2015). The term Digital Humanities emerged to demonstrate the existence of a branch of human knowledge that combines the application of digital technologies to the Humanities, conceptualized by Ortega (2013, p. 3) as "(...) the space of convergence between computer science, digital media, and humanistic courses in the search for new interpretative models and new knowledge paradigms according to the transformations operated within the digital society". This conception presents a multifaceted range of applications of Digital Humanities to solve insurmountable problems from eras in which digital technologies did not yet exist or were in their infancy.

In this context, this proposal emerges as a form of solving a problem that arose with the advent of the Anti-Crime Package (Law nº 13,964/2019), specifically in the field of Non-Prosecution Agreements: the verification of all objective and subjective conditions of the subject who intends to sign such an agreement with the Public Prosecution Service. Among these conditions is the one provided for in paragraph 2, item III of article 28-A of the Code of Criminal Procedure, which determines that only a person who has benefited in the last five years can sign the non-prosecution agreement.

Measuring this requirement in a country like Brazil, with a federative format and a complex justice system, which includes State, Federal, and Military Justice, among

others, is highly problematic since there are 29 Public Prosecution Offices with the attribution to sign such an agreement. Thus, this work aims to demonstrate the feasibility and possibility of creating a National Bank of Non-Prosecution Agreements involving the 29 interested Public Prosecution Offices and the National Council of the Public Prosecution Service as the highest body in the administrative field of the 29 *Parquets* mentioned above.

Therefore, this study is exploratory, qualitative research based on a bibliographic survey on the theme Digital Humanities and Criminal Prosecution Agreements an institute of Brazilian Criminal Procedural Law and Knowledge Organization, aims to demonstrate the possibility, relevance, and feasibility of a proposal for a National Bank of Non-Prosecution Agreements. A survey was performed through the exploratory bibliographic research concerning similar initiatives in the field of Law as Applied Social Science, which also demonstrate the validity of the application of Information Science, especially in Knowledge Organization, to help solve the proposed problem, which is the creation of the database of national scope. Subsequently, the various nuances necessary for the proposal of a project of this nature will be explored based on the theoretical framework presented, with the description of its phases and essential stages of conception, creation, and implementation.

2. THEORETICAL FRAMEWORK

Because it is a multidisciplinary initiative and characteristic of Digital Humanities, the theoretical framework will be subdivided into i) Digital Humanities, ii) Non-Prosecution Agreements, and iii) Information Science and Knowledge Organization.

2.1 Digital Humanities and its interdisciplinary character

Although the term raises doubts regarding its conceptualization, perhaps even because the discussion on the topic is recent in the history of human scientific evolution, it is consensus that the initial milestone of Digital Humanities was the project of the first electronic index of the works of Thomas Aquinas, headed by the Italian priest Roberto Busa. Other projects later emerged in the area, such as Project Gutenberg (1971), Thesaurus Linguae Graecae (1972), Women writer project (1986), and Tex Encoding (1987), all characterized by the application of digital technologies allied to humanistic courses. Such initiatives advanced quickly with the advent of the Internet, with the concept of Digital Humanities emerging around 1990 to name them (Tăut, 2017).

Cuartas-Restrepo (2016) also presents an assortment of concepts for the term Digital Humanities, demonstrating the breadth and scope of the theme. However, a tonic is perceived in all concepts: the integration between digital technologies and contents of the Humanistic Sciences understood as the Human Sciences, Applied Humanities, among other branches within this area of concentration.

Tăut (2017) made another critical reflection on the topic based on the statements of Fitzpatrick (2012, p. 14) that one should not expand too much on the concept of Digital Humanities to the point of including "(...) every medievalist with a website". In contrast, Lisa Spiro (2012) works with concepts of values linked to Digital Humanities, placing collaboration and diversity among them.

In this sense, the restriction of the field proposed by Fitzpatrick would contrast with values in the scope of Digital Humanities. Inclusion can be cited in addition to those mentioned by Lisa Spiro since digital technologies are currently responsible for the inclusion of thousands of people

in the digital world and, at the same time, access to information previously unavailable. This occurs with a device that fits in your hand: a smartphone, which transforms humans into an informational society (Castells, 2002).

Having overcome the difficulty of conceptualizing and validating the theme of Digital Humanities, we highlight its interdisciplinary nature. Because the concept of Digital Humanities represents the application of digital technologies to the humanities, it is verified as a multidisciplinary field from its concept. Therefore, according to the lesson of Lin (2012), the complexity of issues in a current society exceeds the capacity to address these issues in a single area of knowledge, with the need for multi or interdisciplinary study and understanding of such phenomena.

Thus, when concerning Digital Humanities, one will always refer to at least two disciplines: the area of Applied Digital Technology and the Humanistic Science involved. In this case, as will be demonstrated later, in addition to Applied Human Science (Law) and database technology to create the National Bank of Non-Prosecution Agreements, we also have the Information Science approach through one of its areas of expertise, the Knowledge Organization.

2.2 Non-prosecution agreements

With the advent of Law nº 13,964/2019, popularly known as the "Anti-Crime Package", which improved several points of Brazilian criminal procedural legislation, the institute of the Non-Prosecution Agreement was included in the national legal system, allowing perpetrators of crimes whose sentence is fewer to four years to enjoy this institute. Through this agreement, the perpetrator of the crime and the Public Prosecution Service sign an agreement in which the criminal agent confesses to the commission of

the crime, repairs the damage, and, fulfilling the other legal requirements, ceases to be prosecuted and convicted for the commission of such a crime (article 28-A of Law nº 13,964/2019), which is later approved by the Judiciary.

Among the conditions provided for entering into such an agreement is that of paragraph 2, item III of article 28-A of the Code of Criminal Procedure, which provides:

> Art. 28-A. When not the case of filing and having formally and circumstantially confessed to the commission of a criminal offense without violence or serious threat and with a minimum sentence of fewer than 4 (four) years, the Public Prosecution Service may propose a non-prosecution agreement, provided that it is necessary and sufficient for disapproval and prevention of the crime, under the following adjusted conditions:
>
> (…)
>
> Paragraph 2. The provisions of the head provision in this article do not apply in the following cases:
>
> (…)
>
> III - have been the agent benefited in the 5 (five) years before the commission of the offense, in a non-prosecution agreement, criminal transaction, or conditional suspension of the process; and

The problem concerning this device is the difficulty of assessing whether the perpetrator of the crime and interested in signing the non-prosecution agreement has already benefited from this measure, criminal transaction, or conditional suspension of the process in the last five years. It should be noted that the 26 state Public Prosecution

Offices, the Federal Public Prosecution Service, the Public Prosecution Service of the Federal District and Territories, and the Military Public Prosecution Service can establish such benefits, adding up to 29 different public agencies, which often do not have any search tool in their databases that record the granting of these decriminalizing measures.

Thus, by way of example, a citizen who, in the last five years, has lived in Santa Catarina, Amazonas, Acre, Pernambuco, and Mato Grosso do Sul should enter into a non-prosecution agreement with the Federal Public Prosecution Service acting in Santa Catarina. The Federal *Parquet* would be responsible for the survey in these other four federal units to verify if that person has already signed a non-prosecution agreement in that period. This consultation would involve all state Prosecution Offices, Federal Prosecution Service, and Military Prosecution Service, resulting in often slow bureaucracy and a lack of centralized information.

Therefore, the present proposal aims to suggest the creation of a National Bank of Non-Prosecution Agreements, which is nothing more than a national database, like the National Bank for Monitoring Prisons[1], which will gather data on the conclusion of non-prosecution agreements in all Public Prosecution Offices in the country, serving as a consultation tool for assessing who in the country has signed this type of agreement.

2.3 Information science and knowledge organization

As a proposal for the creation of a stabilized vocabulary and standardization of information standards by the Brazilian

1 Initiative of the National Council of Justice, which assists in the management of documentation regarding arrest/internment and respective releases throughout Brazil.

Public Prosecution Offices involved, there is a need within this specific domain of knowledge and its discursive community, formed by a range of participants of heterogeneous origin, in the concept used by Binger Hjørland and Hanne Albrechtsen (1995, *apud* Hjørland, 2002), and the higher body to those already mentioned, in the figure of the National Council of the Public Prosecution Service, normative edit, similar to Circular Letter nº 3,454 of June 14th, 2010, of the Central Bank of Brazil, being a document of Knowledge Organization, in line with what was recommended by Beghtol (1995), as cited by Dias (2015), to bring a full understanding of the domain to be modeled and in the choice of terms to be used by the actors integrating the discursive community involved in the initiative.

Within the scope of the Central Bank, Circular Letter nº 3,454 was a watershed document, which aimed to: "In accordance with the provisions of the sole paragraph of article 5 of Circular nº 3.290 of September 5th, 2005, we disclose the layout to be adopted to provide information to the competent authorities, when requested (...)". In other words, from the publication of this document, all financial institutions in Brazil, when meeting breaches of banking secrecy granted by the Judiciary, began to deliver the banking information of the targets of these measures in a standard format, present in the Circular Letter, with stabilization of the communication vocabulary and language between all agents involved (Judicial Police, Public Prosecution Offices, Judiciary, Central Bank of Brazil, and Brazilian financial institutions), thus allowing the institution and use of a single banking information management system in Brazil, SIMBA.

On the other hand, as much as we discuss bodies of the exact nature, the Public Prosecution Offices, we must

indicate their heterogeneous condition since there are the state and Public Prosecution Office of the Union (MPU in Portuguese), composed of the Federal Public Prosecution Service (MPF in Portuguese), the Labor Public Prosecution Service (MPT in Portuguese), the Military Public Prosecution Service (MPM in Portuguese), and the Federal District and Territories Public Prosecution Service (MPDFT in Portuguese). In addition to this distinction, we can draw several others, such as the reality of each state's Public Prosecution Offices, with their organizational laws. The same can be said regarding the branches of the MPU and their systems for processing electronic processes, forms of action, nature of the causes that act, among other specificities.

All this highlights the heterogeneous nature of this discursive community and the need, within the scope of the proposal presented in this article, for a stage of Knowledge Organization before implementing the proposed system. Thus, an initiative similar to the one adopted by the Central Bank of Brazil could be carried out by the National Council of the Public Prosecution Service so that, after the diagnosis phase of the non-prosecution agreements in the country, it edits a similar document to stabilize and create a single language of communication between all the actors involved in the initiative.

3. THE NATIONAL BANK'S PROPOSAL FOR NON-PROSECUTION AGREEMENTS

From this topic, the National Bank of Non-Prosecution Agreements proposal will be presented, subdivided into stages similar to a project to defend the feasibility of implementing a proposal.

3.1 Justification

The entry into force of the Anti-Crime Package (Law nº 13,964/2019) introduced the non-prosecution agreement into the Brazilian legal system, allowing perpetrators of crimes of which the minimum sentence is fewer than four years to sign an agreement with the Public Prosecution Service later approved by the Judiciary, in which they will practice a series of acts adjusted in the said document in exchange for not being criminally prosecuted. However, among the requirements to enter into such an agreement are not having benefited from it in the last five years or having a criminal transaction and/or conditional suspension of the process (art. 28-A, paragraph 2, item III, of the Code of Criminal Procedure).

There is currently no single form of consultation among 26 state Public Prosecution Offices, the Federal Public Prosecution Service, the Public Prosecution Service of the Federal District and Territories, and the Military Public Prosecution Service, totaling 29 public agencies, regarding who signed this device, making accurate research on the subject impossible. In this sense, there is the possibility of creating a National Bank of Non-Prosecution Agreements, which, as a suggestion, would be managed by the National Council of the Public Prosecution Service, in compliance with its constitutional function present in article 130-A, paragraph 2, item I, of the Federal Constitution.

3.2 Objectives and target audience

The general objective of this proposal is the creation of a national database that gathers information from all individuals who have entered into non-prosecution agreements within the framework of the 26 state Public Prosecution

Offices, the Federal Public Prosecution Service, the Public Prosecution Service of the Federal District and Territories, and the Military Public Prosecution Service. The measure, as a form of applying the Digital Humanities in the context of access to Justice, involves the Public Prosecution Service as a constitutional actor responsible for the defense of the legal order, the democratic regime, and unavailable social and individual interests (art. 127 of the Federal Constitution).

The present initiative is inserted in the context of Digital Humanities. As stated by Lisa Spiro, the area is configured by sharing some of the values, such as free access, collaboration, collegiality, connectivity, diversity, and experimentation (Spiro, 2012). The proposal presented here presents several of these values. It is a system of free access of collaboration between the various agencies of the Public Prosecution Service in the country and the National Council of the Public Prosecution Service, whose access presupposes connectivity, consisting of an innovative initiative with some degree of experimentation since this measure is unprecedented in the scope of the Brazilian Public Prosecution Service.

Furthermore, Liu (2013) asserts that, although the field of Digital Humanities does not have a fixed concept and its conceptualization is hard work, one must roughly consider the application of digital technologies to the study of the Humanities. In this case, the database technologies are applied in alliance with Law and Information Science to provide access to Justice of special interest to the Public Prosecution Service and the Judiciary.

The specific objectives, in turn, are:

i) survey within the scope of the 26 state Public Prosecution Offices, the Federal Public Prosecution

Service, the Public Prosecution Service of the Federal District and Territories, and the Military Public Prosecution Service to identify how non-prosecution agreements are registered in the prosecution systems of such bodies;

ii) subsequently, elaborate a normative, under the responsibility of the National Council of the Public Prosecution Service, like the normative present in Circular Letter nº 3454 of the Central Bank of Brazil, by way of knowledge organization, to establish criteria for the provision of data on non-prosecution agreements by the Public Prosecution Offices of the country, as a form of delivering the information already structured for input into the database and standardizing the forms of access to such information, monitoring methods, and evaluation of the project operation;

iii) create the physical and logical structure of the database to receive information about non-prosecution agreements signed in the country and communication module between the entities responsible for feeding and administering the database; and

iv) create the database query portal.

We also identified that the initiative's target audiences are members and servants of the Public Prosecution Offices, the Judiciary, and other citizens interested in this survey.

3.3 Description of the action or methodology

The first step towards implementing the initiative would be a diagnosis within the scope of the 26 state Public Prosecution Offices, the Federal Public Prosecution Service, the Public Prosecution Service of the Federal District and Territories, and the Military Public Prosecution Service to

map the form in which non-prosecution agreements are registered in the document processing systems of each of these bodies.

This diagnosis aims to identify the forms of registration of the non-prosecution agreement in the scope of the Brazilian Public Prosecution Offices to provide subsidies to the National Council of the Public Prosecution Service for the edition of a standard that determines:

i) The creation of the National Bank of non-prosecution agreements;
ii) the stabilization of vocabulary and uniform forms of all the Public Prosecution Offices involved in feeding the database that will form the national repository as Knowledge Organization;
iii) the frequency at which the database should be fed;
iv) the creation of a commission for monitoring the phases of project implementation and its subsequent execution, composed of members and servants of the Public Prosecution Offices involved, the National Council of the Public Prosecution Service, and representatives of civil society; and
v) the criteria for evaluating the operation of the National Bank for non-prosecution agreements.

Once this standard has been published, a period must be established to adapt the bodies responsible for feeding the system to the defined regulations, which can also be used to create the physical structure and *hardware*, and the *software* to be used for receiving the data (via *web service*, for example) and the tools and query page to be provided to the target audience. In addition, the National Council of the Public Prosecution Service would also be responsible for the national dissemination of the system creation and

implementation as a form of popularizing and democratizing its access.

3.4 Impact

It is estimated that there will be a national impact with the creation of the measure. First, it will be a facilitator for the bodies involved in settlement of non-prosecution agreements (Public Prosecutors, Judiciary) since there will be a centralized point of national consultation, allowing only those citizens who fit the legal requirements to benefit, giving greater efficiency and effectiveness to this criminal procedural institute. There will also be a social impact, allowing general and unrestricted consultation to this content to assist society in obtaining information about who has already signed or not a criminal prosecution agreement in Brazil. This information interests the citizen and the government in analyzing the measure's effectiveness, planning course corrections, and improving legislation on the subject, also serving as a diagnostic tool for successfully implementing the institute in the country.

On the other hand, it is also necessary to weigh the degree of access and information to be made available to each target audience since they are sensitive data that enter the sphere of people's privacy. For compliance with the provisions of the General Data Protection Law (Law nº 13,709/2018), we suggest creating distinct access profiles to provide the Public Prosecution Service and the Judiciary with more complete data compatible with the exercise of their constitutional tasks and functions, and access profiles with more restricted information to the general public as a form of protecting the

data saved in the database and the people to whom they concern.

3.5 Partnerships, interfaces, and resources

Concerning partnerships, joint action is assumed between all Public Prosecution Offices of Brazil and the National Council of the Public Prosecution Service, with subsequent participation of the Judiciary and the National Council of Justice, the latter two as system users.

The project interfaces would work through the National Council of the Public Prosecution Service, the highest administrative body in Brazil, regarding all organs of the national *Parquet*. In addition to centralizing data collection and hosting the database, *"the control of the administrative and financial performance of the Public Prosecution Service"* (BRASIL, 1988, art. 130-A, § 2º, inciso I) is the Council's constitutional role, which is why it has the authority, legitimacy, and attribution to undertake such an initiative.

In addition, the database query system may also have a communication module in which the responsible areas of each Public Prosecution Office in the country may establish communication to address issues related to the database inputs and others relevant to the project. Regarding resources, the diagnostic phase is internal to each Public Prosecution Office, only designating commissions to carry out the relevant surveys, bearing the costs involved by each of the institutions involved. The creation of the database infrastructure would run at the expense of the National Council of the Public Prosecution Service, which has its budget allocation within the Union Budget.

3.6 Implementation, monitoring, and evaluation schedule

The project execution schedule is thus subdivided:

- Phase 1 - diagnosis: six months to create the commissions in each Public Prosecution Office involved and carry out the surveys;
- Phase 2 – a meeting of the elements and editing of the standard by the National Council of the Public Prosecution Service: six months to analyze the results of the first phase and write a resolution covering the items described in the second paragraph of item 6 of this project.
- Phase 3 – creating the *hardware* and *software* necessary to receive the data and creating the database of the communication module between those involved in feeding the system and query interface of the National Bank for non-prosecution agreements.
- Phase 4 - implementation: entry into force of the system, with permanent monitoring of its operation and actions to evaluate its functioning and effectiveness, and dissemination of its existence as a form to promote its use and democratization of access.

A commission established by the National Council of the Public Prosecution Service may be responsible for the project monitoring, in a norm to be edited in the project's second phase.

The evaluation of the project implementation phases and its execution and operation will be formalized in a standard published by the National Council of the Public Prosecution Service.

4. CONCLUSION

The term Digital Humanities, although challenging to conceptualize, is currently present in the daily life of academia and within society, having reached "a critical mass of participants, publications, conferences, major competitions, institutionalization (centers, programs, job advertisements), a general visibility (...)" (Liu, 2013, p. 410, our translation).

In this sense, many initiatives combine humanities courses with the use of tools from the digital world. The field of Applied Humanities, especially Law, cannot ignore this reality and must draw from this source to solve its challenges and benefit society. Within this perspective, the emergence of the Anti-Crime Package (Law nº 13,964/2019) innovated the legal field, especially non-prosecution agreements, as a tool to modernize Brazilian criminal procedural legislation.

However, the most significant difficulty for the agreement of this institute is verifying the condition provided for in article 28-A, paragraph 2, item III, of the Code of Criminal Procedure: if the citizen interested in signing a non-prosecution agreement has already agreed to this institute, criminal transaction, and/or conditional suspension of the process in Brazil in the last five years. For this reason, as it involves surveys in 29 different Public Prosecution agencies, a National Bank of Non-Prosecution Agreements is proposed as an initiative of Digital Humanities applied to Law with the help of Information Science to stabilize language and vocabulary among all participating entities through the Knowledge Organization to allow the proposed initiative to be uniformly applied and the

database to be fed so that the data is input already structured, facilitating its treatment phase.

Thus, the National Council of the Public Prosecution Service would lead the initiative by centralizing administrative issues, proposing the necessary regulations, and providing the physical and logical structure necessary to implement this national database. On the other hand, in addition to the demonstrated usefulness of the National Bank for non-prosecution agreements, it is also a tool for access to Justice, which would allow consultations by citizens and provide possibilities for measurement and studies on the efficiency and effectiveness of applying the measure inserted by the Anti-Crime Package in Brazilian legislation.

Finally, it should be noted that the text is still an initial proposal of this database, with room for future studies on the specific digital technologies to be adopted, the database architecture and systems to be adopted, and even specific work on Information Science, especially Knowledge Organization, on, for example, how to establish the controlled vocabulary to be used among the entities involved to feed the database.

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