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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