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Media Literacy (Editorial)	5-6
Oksana Tymoshchuk, Alessandra Carenzio & Ruth Sofia Contreras Espinosa	

ARTICLES

Deconstructing the Value-Neutrality of Technology: Why Media Education Should Consider it and Raise Awareness	7-18
Christian Gardoni	

Estrategias Efectivas en Programas de Alfabetización Mediática contra la Desinformación Digital ...	19-36
Monica Niño Romero	

Podcasts and Inclusive Narratives. New Spaces to Foster Citizenship Through Words	37-48
Luca Bravi, Alberto Baldi	

Promoting Knowledge: Higher Education and Rural Ethiopia through a Podcast Journey	49-76
Marie-Anne Lorain, Mercedes Vázquez-Furelos, Elena Urquía- Grande, Alberto Martinez da Silva	

Literacia dos fãs da série brasileira As Five na rede social X	77-92
Daiana Sigiliano, Gabriela Borges	

El cuerpo es el texto: inteligencia artificial, textualidad, corporeidad y ciudadanía algorítmica	93-106
Monica Di Domenico, Lucia Campitiello, Fabrizio Schiavo, Pio Alfredo Di Tore	

Older Adults' Safety and Security Online: A Post-Pandemic Exploration of Attitudes and Behaviors	107-126
Edgar Pacheco	

Critical Thinking and Transilience: Possible Answers to Invisible Poverty	127-140
Agnese Rosati, Edoardo Renzi, Keren Ponzo	

Media Literacy (Editorial)

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In the onlife scenario, in which human life is increasingly mediated by digital technologies and our physical and digital lives are mutually influential, Media Literacy is even more significant. The onlife condition challenges traditional ideas about identity, privacy, and ethics, and it requires an attentive thinking about what it means to be human in a world where digital and physical realms are inseparable. Media Literacy is profoundly implied in this thinking considering, in particular, what Buckingham refers to as the "bigger picture". Buckingham uses this expression to emphasize the need for understanding how media fit into a broader social and cultural context that influences who we are, how we interact with others, and how we construct our identity in a digital world.

In this special issue, we present experiences and studies reflecting the importance of Media Literacy as a powerful framework to deal with fragmented information, invisible poverty, inclusion of older people and social issues such as prejudice and homophobic attitudes.

In "Deconstructing the Value-Neutrality of Technology", the author reflects on the ethical and social implications of technological neutrality exploring how technology is never truly neutral but is embedded with moral and social values that influence our interactions.

The issue of information is also discussed in "Estrategias Efectivas en Programas de Alfabetización Mediática contra la Desinformación Digital", where the core is the study of strategies for combating digital misinformation by analyzing media literacy programs in Europe and Latin America. The article highlights the importance of tailoring programs to the specific needs of target groups.

In "Podcasts and Inclusive Narratives", the authors explore the use of podcasts as an educational tool to promote diversity and inclusion through audio stories, giving voice to marginalized communities and promoting a form of media literacy that embraces cultural and social diversity.

The podcast format also proves particularly valuable due to its accessibility, low technical barriers, and ability to accommodate local languages and cultural contexts. The article "Promoting Knowledge: Higher Education and Rural Ethiopia through a Podcast Journey" explores how podcasts can serve as educational tools in rural communities, focusing on their role in developing critical thinking, media literacy, and financial literacy.

"Literacia dos fãs da série brasileira 'As Five'" brings the attention to the role of Media literacy in popular culture, in particular dealing with the Brazilian series As Five, encouraging active engagement in public debate.

"El cuerpo es el texto: inteligencia artificial, textualidad, corporeidad y ciudadanía algorítmica" reflects on the influence of digitalization and emerging technologies through the lens of the body-digital interface, deepening the critical questions raised by Artificial Intelligence.

While "Older Adults' Safety and Security Online: A Post-Pandemic Exploration" describes the study on the older adults' habits regarding online safety, in particular after the pandemic, providing crucial reflections on how Media Literacy is now addressed to different age groups.

Finally, "Critical Thinking and Transilience: Possible Answers to Invisible Poverty" reflects on the relationship between invisible cultural poverty and information overload. In an era where people are bombarded with content at an unprecedented pace, developing a critical understanding of what is consumed has become increasingly difficult.

In conclusion, these contributions offer a rich and diverse overview of the challenges and responses of media literacy in the digital age. From the ethical issues surrounding technology to the need for fostering critical and inclusive thinking, and from the analysis of misinformation to viral narratives, these articles remind us of the importance of an educational approach that promotes awareness, autonomy, and digital citizenship.

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Deconstructing the Value-Neutrality of Technology: Why Media Education Should Consider it and Raise Awareness

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Abstract

It is often argued that technology is neutral. Even in the academic world there is still debate today whether it incorporates intrinsic moral values or whether, instead, it all depends on the use that is made of it. In this article this concept will be examined starting from the classification made by Luciano Floridi, in an attempt to dispel this mirage. It will be also discussed why and how Media Education should consider this assumption and include it in its repertoire as a first principle that guides every other reflection and transmittable skill in favor of a conscientization and literacy which it aims to achieve.

Keywords *Technology Value-Neutrality; Conscientization; Media Education; Technological classification*

1. Introduction

The aim of this work is to address a complex issue concerning technology and its possible implications for more accurate media literacy. Starting from an analysis of its classifications, the dynamics by which technologies still tend to be grouped into a single nature and considered neutral by the majority of the population will be explored. Emphasis will also be placed on why it is important for the educational world to take into account these meta-reflections as a basis to provide greater awareness in a global scenario in crisis and increasingly virtual, digitalized and marked by its incessant innovation and spread.

The articulated concept of Value-Neutrality is debated in particular by the philosophical discipline which frames it from multiple lenses and perspectives. In relation to technology, this hypothesis – different from technology neutrality – asserts that

“Technology is morally and politically neutral, neither good nor bad; only its uses have moral or other value, not the technology itself” (Miller, 2021: 54)

In essence, it posits that technology does not embody values and that only human agency is responsible for its status, added values and ethical uses. In the case of the knife, for example, it can be used to peel a food or to harm someone.

Several attempts have been made to demonstrate the absence or presence of value neutrality of technology on the basis of philosophical but also anthropological, ecological (media), psychological or political analysis (Fogg, 2002; Klenk, 2021; Miller, 2021; Pitt, 2014; Strate, 2012; Sundström, 1998; Van De Poel & Kroes, 2014; Verbeek, 2011; Whelchel, 1986). The aim of this study is to deconstruct the following hypothesis from alternative perspectives and to underscore its relevance and necessity within the context of Media Education.

2. Technology value-neutrality

The key idea is that technologies are not uniform and due to their evolution and ineluctable interrelation with human creation – and creativity – they have taken on a "plus" compared to the past. Paraphrasing and summarizing some concepts of Coccia (2017) who makes a different technological classification, it is possible to understand what could be interpreted as a "technological stratification". In essence, technology and technological artefacts can certainly take on new and innovative aspects and functions, but they are precisely the result of technology within another technology or the elements of one technology in another. Therefore, it is plausible to confirm that modern technologies incorporate the experience, components and qualities of previous inventions. In this case, the investigation of value-neutrality could find its foundation on simpler paths.

A relevant conceptual framework that guides the following analysis starts from (Floridi, 2013, 2017) who taxonomically divides technologies based on some characteristics. These are: 1) First-order technologies; 2) Second-order technologies; 3) Third-order technologies. As he narrates, technology is an entity that is characterized by its "in-betweenness", that is, by being a sort of intermediary between the user, such as the one who interacts with it, and a prompter – or protocol – namely, the cause and reason why the artifact is created. Therefore, a user can be an individual who uses the "tool" to solve or simplify a problem. An example is the individual (user) who use it to protect himself from the sun (prompter). The prompter is the entity that substantially "suggests" the need for the work to be created. This illustration allows us to clearly introduce what are the so-called "first-order technologies". These connect the user with a technological artifact in a direct way which in turn puts the user in contact with the natural world. Emblematic examples are the wheel, the plow, the axe, the scissors and so on. This is because, as Floridi highlights, both the interface and the protocol of the instrument are visible and modifiable by the user.

A second-order technology is more sophisticated. It is in this type of stage that the technical, cognitive and experiential as well as material elements meet and merge into a sort of single technological artefact, complicating the relationship between user and prompter since the latter is no longer nature but another technologyⁱ. This is the case of the engine, the hammer, the refrigerator, the microwave, and so on. They serve to activate, shape or control other technologies.

The last level is made up of "third-order technologies". In this stage a technology enters into a relationship with another technology by means of a technology. This is the case with modem, antennas, satellites, and so on. In these cases, both interface and protocol are substantially invisible and unmodifiableⁱⁱ. Even the modern mobile phone is part of this category but reserves some

peculiarities that make it special and unique in its kind. The words of the famous paleoanthropologist Leroy-Ghouran who retraced the history of technological evolution by identifying different phases (Johnson, 2011) and considering, consequently, the externalization of memory sound similar:

“Developments in the use of electricity, and above all the rise of electronics, taking place less than a century after the mutation that produced automotive machines, have triggered another mutation that leaves but little in the human organism still to be exteriorized. Machines have changed radically as a result of the development of small-scale motors, photosensitive cells, transistors, and miniaturized devices of all kinds. This disparate arsenal is supplying the parts for a composite body strangely similar to the biological one” (Leroi-Gourhan, 1993: 248)

In any case, if technologies in general correspond to very composite elements, logics and functions, third-order technologies have a higher level of complexity and influenceⁱⁱⁱ. But among all third-order technologies, it is plausible to consider the smartphone a first, second and third-order technology simultaneously; and this statement is supported by: 1) Some mechanics, such as taking a photograph, the flash and other particular functions are similar to first-order ones; 2) When it is, for example, connected via Bluetooth and activates other devices, it acts as a second-order technology; 3) It is perpetually a third-order technology, since, even when it is turned off, it transmits data or is connected to the satellite network. It is evident that this technological artifact would require a separate and more in-depth analysis. What is significant, is the complexity of its functions and its faculties to act as a support in disconfirming the value-neutrality: it is its “emergent properties” that, by unlocking multiple functions, have contributed to disclosing various problems and criticalities. A single typology – and it is among the most used by most people – of technological artefact that allows some functions, has contributed to the propagation of a large amount of intrapersonal and collective dangers and risks^{iv}.

These technologies are transforming our way of receiving, managing and storing information, causing no small amount of concern. This is because for thousands of years the human brain remained set on the reading method. And this interpretation is not only an effective argument that reveals the “biased” nature of third-order technology but, in conjunction with all the phenomena under analysis, it takes over to verify them further.

3. “Technological mirage”

Is it possible that the widespread and generalized idea of technological value-neutrality is a legacy and mirage of the historical stratification of first-order technologies? To demonstrate this assumption some analyses from various authors will be borrowed. First, historical materialism is relevant, since

“Our consciousness and our thought, however supersensible they may seem, are the product of a material, corporeal organ, the brain. Matter is not a product of the mind, but the mind itself is simply the highest product of matter” (Engels, 1962: 372-73).

Nevertheless, according to Engels, individuals are not passive entities with respect to history. But it is also true that they are not completely free agents, given the impossibility of building their own destinies independently of the forces imposed by the economic, scientific and technical spheres. Therefore, turning our gaze to this “side” of historical evolution – in which technology is both a passive

and active agent – people have more or less freedom of action within the system but is not fully free “from” the system.

Human beings are heirs to the technique linked to the production of first and second order technologies since, as is easily seen, all industrially developed societies are still pervaded by the presence and necessity of the latter. But if it is matter that shapes consciousness and not vice versa, then the way individuals in advanced industrial societies see the world is such because their consciousness is formed by the perception of the historical and undifferentiated continuity of the developments of the technological process. In this sense, today he believes that a smartphone has the same relevance and implications as a plow or a screwdriver. They are all “neutral” to the extent that they depend on the use made of them by the same individual. This belief is also given by the problem of habit, a concept examined and given attention by both the ancients and the modern sciences (Piazza, 2018). Aristotle himself in *Rhetoric* pointed out the critical aspects of this vice by asserting that

“By habit it occurs as if it were by nature, since habit is something similar to nature. In fact, the often is similar to the always and nature falls within the always, while habit in the often” (Aristotle, 2021:1370a).

This allusion, moreover, echoes in the words of Ortega y Gasset when he highlights that:

“No human being thanks another for the air he breathes, for no one has produced the air for him; it belongs to the sum-total of what “is there,” of which we say “it is natural,” because it never fails. And these spoiled masses are unintelligent enough to believe that the material and social organization, placed at their disposition like the air, is of the same origin, since apparently it never fails them, and is almost as perfect as the natural scheme of things. My thesis, therefore, is this: the very perfection with which the XIX Century gave an organization to certain orders of existence has caused the masses benefited thereby to consider it, not as an organized, but as a natural system” (Ortega y Gasset, 1932: 59-60)

It is in the convergence of multiple dynamics and historical processes and in the human condition of “getting used to” and not fully understanding the variegated set of factors and coefficients that the demonstration of the legacy and, therefore, of the mirage described so far is hidden.

Further proof of what has been stated lies in the analysis of the historical discontinuity of the socioeconomic model with the appearance and spread of capitalism. As Weber (2002) interpreted the birth of capitalism it is possible to make a brief analysis of the discontinuity that the capitalist and industrial model have brought into being in a technical key. These have given rise to a new system of production and consumption, becoming the chrysalis of an objective and instrumental massification both quantitative and qualitative. The so-called “evolutionary jetlag” make itself present with greater intensity in this period^v.

The individuals of today are shaped of such vestiges and despite being aware of the differences and discontinuity of the past compared to the present, live by the “habit” of the “state of nature”. They can recognize that the past differs from the present, yet they are unable to fully experience a true historical discontinuity, they are accustomed to the current model of life and not able to understand the implications brought about by modern technology. A significant analogy, in this sense, is given by the history of democracy which, as Hansen (2021) narrates, is characterized by its same absence for

two millennia. In many contexts it officially reappeared less than a century ago and, nevertheless, it is felt as if it were present or had settled for much longer.

4. Implications for Media Education

Given this multi-perspective scenario, it is essential to understand why these dimensions of study should be brought into Media Education and the so-called "Media Awareness" (Rivoltella, 2019). The issue, to some extent, could have already been addressed by Media Studies, which however do not deal with Media Education. Furthermore, the notion of Value-Neutrality remains, as already noted, essentially tied to philosophy. From Media Studies perspective, there is no focus on technological value-neutrality. On the other hand, there seems to be a void on the Media Education front, which often finds it difficult to find a common agreement on many aspects, starting from its very definition and denomination, assessment, measure and so on (Rivoltella, 2019; Schilder et al., 2016). Not to mention, the fragmented constructs and schools of thought that exist and that arise and derive from Media Education (Vencato, 2021).

By combining the readings made starting from Floridi's classification, together with other aspects it is possible to consider the importance of working pedagogically on this global condition. After all, it seems a "new" Weberian condition of the cloak of the iron cage from which man will hardly be able to escape (Maley, 2004).

An alternative approach for such an educational project and process could involve integrating it into other fields, disciplines, or programs, such as philosophy, history, or psychology. However, these disciplines are already highly specialized and often constrained by structured and rigid curricula established by educational institutions. As a result, such integration could potentially undermine both their existing programs and the effective incorporation of these teaching units. In addition, teachers would risk not being prepared for the task. What better solution than a Media Education that, in theory, should be composed of more reference figures and interdisciplinary approach (Talib, 2018) able to provide a broader vision for that "unitas multiplex" of a "well-made head" (Morin, 2018)? It should be the task of a media education to take care of the good and well-being of young people (Pathak-Shelat, 2014). As Maley writes

"Over the last 300 years, science promised, and technology has delivered, a seemingly endless spectacle of discoveries that have led to the awe-inspiring technical mastery of nature that modern Western citizens take for granted. In its power to transform the world, modern science continually produces new worlds of possibility and a new, restless sense of time and the future that are, in principle, unlimited" (Maley, 2004: 71)

Evidence on the problems related to risks, alienation, the fluidity of a disorienting system, on the "depressive hedonia" of the capitalist system – as well as psychology – confirms the difficulties to "a happier life" because of the extension of the self in this current era that intensifies losses – or fears of loss – compared to acquisitions. This support the importance of providing guidance to the youth at the mercy of a world they partially accept and share but perceive as beyond their ability to change. (Fisher, 2009; Legrenzi, 1998). It is the duty of adults, from parents to schools and from local administrators to major policymakers, to be able to understand, discuss and deepen these dynamics

in order to then activate educational projects that reflect the true face of the current crises. This, therefore, provides the possibility to metabolize an historical-social awareness in which young people find themselves living (Salmeri, 2014).

The focus is not on considering pedagogical or technological determinism, or even about the entangled pedagogy or dynamic interactionism, in essence to the famous pedagogical horse that pulls the technological cart or vice versa (Fawns, 2019, 2022; Sankey, 2019; Selwyn, 2010; Tsui & Tavares, 2021; Watson, 2001) but to retrace, as stated, a broad reflection on the historical-social situation and therefore on technology, on its reflection, and evolution and interpretation of the intrinsic characteristics to them (such as its emergent and stratified properties). Media education is about media and modern technology and is not the purely instrumental teaching of ICT (Buckingham, 2007). Therefore, if it's meant to deal with media and technologies and what creates distance from the awareness of technologies and the related pitfalls, the aim is to analyze and reflect on them first.

It's necessary promote reflection, first, on media education itself to take seriously and promptly into consideration the scope of such an implication in a world in which geopolitical, socio-political, techno-scientific conditions heavily and daily affect the life of every person. This is independent of what has been analyzed previously but, to an even greater extent, by virtue of an "unmasking" or raising of doubts regarding the technological value-neutrality that the entire world still looks at with the eyes of "habit", not realizing the substantial taxonomic differences.

The necessity of adapting media education to the dynamics of contemporary society has become increasingly apparent, particularly in light of the complexity introduced by the widespread adoption and advancement of information technologies with which individuals engage daily. This evolution challenges traditional notions of literacy, necessitating a shift toward new literacy education (Rivoltella, 2020)

This perspective becomes even more compelling with the development of artificial intelligence, which is of great interest if analyzed from this perspective. Given its increasing prevalence and the growing reliance on it in recent years, it becomes a focal point for debate and critical analysis, avoiding its reduction to the alarmism of skeptics, the enthusiasm of optimists or existing dominant ideologies. Nor should it be consigned to the oblivion of presumed value neutrality. Instead, as previously emphasized, it is essential to dialogically build a collective understanding of its biases, risks, and challenges, thereby charting the most effective path for addressing its future development and likely pervasiveness. Almost to the point of "forcing" one to hypothesize about new "technological orders", as it is destined to transform the relationships among the user, technology and nature, along with interfaces and protocols; essentially, modifying its "in-betweenness". This is because

"Being able to see a system is sometimes equated with being able to know how it works and how to govern it. But this tendency has serious limitations. In the case of AI, there is no singular black box to open, no secret to expose, but a multitude of interlaced systems of power. Complete transparency, then, is an impossible goal" (Crawford, 2021: 12).

This framework can facilitate a deeper understanding of these complexities, providing a foundation for further analysis and the development of new perspectives.

Media Education could consider these new domains – without taking anything away from its already valuable educational actions and forms – and the methodology to be applied for its enrichment by adopting critical pedagogy as a methodology – as already occur for Critical Media literacy – especially for its relational perspectives and implications (Nam, 2010). Thanks to it, it is not necessary for the educational process to impose, in the top-down formula, the uncritical assimilation of information, but rather the continuous dialogic, creative and also innovative reformulation of the problem exposed up to now. It is precisely a transformative dynamic – from which Mezirow takes up Freire – in the perspective of a consciousness raising of the young generations that however never becomes imperative, but collaborative (Mezirow, 1990). It is no coincidence that, as regards technological education, critical pedagogists aim to

“Understand what works and what does not work, how students themselves see, experience and express their reality, and co-create with students the knowledge, awareness and dispositions to overcome the barriers imposed on full citizenship and self-realization” (Bradshaw, 2017: 9)

However, Critical Media Literacy, or in general the application of a critical pedagogy, especially with regard to the planning, analytical, conceptual and content plans of the educational field, would risk reductionism, dwelling too much on dialectics and historical-social contradictions, which is then reflected in the analysis "in the media" and "behind the media".

Who has tried to get closer to this way is Vigren (2015) with the *critical technology education*, which highlights the importance of focusing on the role of technology. Specifically, the author argues that ME would need to be updated and should:

“Center software and the mundane role of (media) technologies, rather than just the representations mediated by these technologies. It is influenced by critical technology studies, science and technology studies, software studies, coding literacy, and critical pedagogy. [...] My motivation, however, is to broaden the key field [...] by strengthening its potential to discuss the conditions of agency in contemporary society and to understand discourses about how technology influences and alters society. This perspective also allows for a close examination of media literacy education's commitments and beliefs about technology; that is, the self-reflexive investigation of its cognitive interests” (Vigren, 2015: 57)

According to the author, there is little reasoning about technology in itself as an agent that shapes culture, societies, collective imaginations in the direct relationship of interdependence with these. It has numerous other benefits and eliminates the potential for specific biases that could arise in a teaching project and context. Traditional Media Literacy constructs tend to see media and technology as a sort of "external" and passive agents or channels that limit themselves to producing information, while instead they should be considered active parts in building perceptions (Vigren, 2015). Pötzsch (2016) also offers an intriguing analysis of the summary of existing studies that allow to affirm

“That these issue areas need to be addressed in contemporary pedagogical theory and practice to facilitate the development of children and young adults into competent, reflective, and critical citizens” (Pötzsch, 2016)

The scholar, referring to various authors – including Beck – further argues that

"To enable children and young adults to use, appropriate, and, if need be, resist increasingly pervasive digital technologies in a reflective and competent manner, contemporary education has to convey knowledge about these technologies at all the levels introduced above in addition to providing users skills and access to particular devices". (Pötzsch, 2016: 120)

These levels concern technological infrastructures, economic conditions, environmental impacts, information management and affective design.

Although they attempt to raise these issues with the aim of better understanding the complex interaction between technology, culture and society, the conceptualization here proposed goes further: dwelling on these mentioned focus of technology does not necessarily imply arguing and reflecting on its value and moral neutrality. Confronting the younger generations on the possibility that third-order technological artifacts – or even new orders – have taken on a “plus” compared to those of previous orders, would assume a broader scope than what has been highlighted up to this point by research and literature.

5. Conclusion

The issue addressed attempts to consolidate several points, namely:

- An analysis of technology and its Value-Neutrality;
- A brief look at the belief that technology is still seen in an "undifferentiated" way, compared to the past and the technologies of the time;
- The importance for Media education to take these implications into consideration;
- Methodological reflections within critical pedagogy on technological value-neutrality can facilitate progress in Media Education.

Additional research is necessary to deepen and validate the analysis. It is relevant to outline this framework, as it is considered the starting point of analysis of any educational meaning and purpose that focuses on the media at a critical level. The underlined elements designate a first didactic and educational "condition" without which it is "useless" to move on to the subsequent phases of analysis, which are also fundamental. Media Education must not go beyond its interests or take on concepts that are not its own, but through influential methodologies, such as those of (Freire, 2000) and processes of co-construction of dialogical and democratic knowledge, it is possible to create a solidary form of awareness of the young generations of the dilemmas that "seem unsolvable". With the important input supported in this work, the idea is to provide, among other things, a reflection and meta-reflection, which is urgently needed in many of the current school systems that are still anchored to old pedagogical models, to unite in a single educational process a transdisciplinary approach, that is to say philosophy, philosophy of history, digital philosophy, history, psychology, anthropology, media studies and so on. Provocatively speaking, it is assumed that this should be the first teaching and the starting point for a development of a media education that branches out in various directions and practices for a new and "beyond" literacy of a society in crisis. Similar to the Neo-materialists the idea is "to explore those hitherto forgotten or little practiced objects of research" (Tirino, 2017). But even further than them because the perspective of analysis differs from the present one. Their goal is

"To bypass the issues associated with representation and, therefore, to focus not on what happens "on the screen", but on what happens "behind the screen" (Tirino, 2017: 108-109)

This perspective focuses attention on the mutual interaction between human and non-human actors involved in the production and consumption of media. On the other hand, Lippmann (1997) said that

"Man is no Aristotelian god contemplating all existence at one glance. He is the creature of an evolution who can just about span a sufficient portion of reality to manage his survival, and snatch what on the scale of time are but a few moments of insight and happiness naked eye could see, of hearing what no ear could hear, of weighing immense masses and infinitesimal ones, of counting and separating more items than he can individually remember" (Lipmann, 1997: 29)

In conclusion, it is necessary to provide a critical approach for current and future generation that will have to deal with its complexity and ever-increasing dangers and difficult to read. and to talk about critical education to the media there is no other solution than to include these topics. Also, because necessarily researching with all the existing or foreseeable risks, would mean assigning the responsibility to someone or something external that manage them. But remembering and paraphrasing McLuhan (1967) with "the medium is the message" – meaning that the objective of study is the medium itself and not what it conveys – would be possible that "the medium is the risk"? Analysis and insights with young people on technological value-neutrality, regardless of the final verdict of such possibility, provides greater reading lenses to understand, distinguish and attribute more easily risks and dangers of everyday technologies in use; and from this reading it is easier for them to elaborate the experience and means of defense.

We can do nothing but take this awareness of this system, try to understand what we do not understand to improve first of all education itself and the world around that seems to crumble and lose all sense and direction. And media Education can and "must" work to promote this transformative process and not remain watching on the surface while the new generations are crushed by a thousand new needs, fears, insecurities, socioeconomic and political crises, lies and false myths. The current third-order technologies – as well as other orders – and those to come are not a secondary and "innocent" factor regardless of the use that is made of them.

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ⁱ There are some exceptions. A hammer and an engine are both second-order technologies even though the hammer does not have the same complexity as a car engine. Both hammer's interface and protocol are visible and manipulable, while in the engine only the interface is and it would require the help of a specialist to fix it.

ⁱⁱ In this circumstance it is not the object that disappears from sight or touch, but rather that the interface is interpreted as a set of protocols that ensure that the technology (for example between the two modems) takes care of both the technological user (computer A) and the technological prompter (computer B) to manage the procedure to be performed.

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- iii The idea behind the assertion is that the two agents relate and influence each other. The smartphone, thanks to its multimedia and versatility, determines, first of all, a wide customization of the instrument by the individual, unlike first-order technologies and, secondly, a constant exchange of stimuli.
 - iv For some dangers connected to the universe and digital devices, of which the mobile phone is the most used interpreter, see Bozzola E., et al. (2022). The use of social media in children and adolescents: Scoping review on the potential risks. *International journal of environmental research and public health*, 19(16), 9960; Livingstone S. (2019). Audiences in an age of datafication: Critical questions for media research. *Television & New Media*, 20(2), 170-183. Dutt B. (2023). Wellbeing Amid Digital Risks: Implications of Digital Risks, Threats, and Scams on Users' Wellbeing. *Media and Communication*, 11(2), 355-366.
 - v The human being lives an experiential, cognitive and practical delay with respect to the technique of which he himself is a supporter

Estrategias Efectivas en Programas de Alfabetización Mediática contra la Desinformación Digital (Effective Strategies in Media Literacy Programs against Digital Disinformation)

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Resumen

En la era digital, la desinformación representa un desafío creciente para la integridad informativa y la democracia, exacerbado por la rapidez de difusión de noticias falsas en plataformas digitales. Este estudio examina la efectividad de programas educativos de alfabetización mediática implementados en Europa y América Latina, dirigidos a distintos grupos como jóvenes, personas mayores y comunidades vulnerables. A través de un enfoque metodológico mixto, que incluye revisión de literatura, análisis de contenido y cuestionarios a periodistas, se identificaron factores clave en el diseño e implementación en iniciativas alfabetizadoras. Los hallazgos destacan la efectividad de metodologías adaptadas, como simulaciones de redes sociales para jóvenes y talleres presenciales para adultos mayores, en la mejora de habilidades críticas frente a la desinformación. Sin embargo, persisten desafíos en la inclusión de comunidades marginadas y en la capacitación tecnológica de periodistas, quienes consideran esencial la alfabetización algorítmica para enfrentar la manipulación informativa. Este artículo concluye que los programas de alfabetización mediática, combinados con marcos regulatorios y colaboración interinstitucional, son herramientas fundamentales para construir una ciudadanía informada y resiliente frente a los riesgos de la sociedad digital.

Palabras clave Alfabetización mediática, Desinformación, Educación digital, Competencias críticas, Periodismo algorítmico

Abstract

In the digital age, misinformation represents a growing challenge to information integrity and democracy, exacerbated by the rapid spread of fake news on digital platforms. This study examines the effectiveness of media literacy education programs implemented in Europe and Latin America, targeting different groups such as youth, the elderly and vulnerable communities. Through a mixed methodological approach, including literature review, content analysis and questionnaires to journalists, key factors in the design and implementation of literacy initiatives were identified. The findings highlight the effectiveness of adapted methodologies, such as social network simulations for young people and face-to-face workshops for older adults, in improving critical skills in the face of misinformation. However, challenges remain in the inclusion of marginalized communities and in the technological training of journalists, who consider algorithmic literacy essential to confront information manipulation. This article concludes that media literacy programs, combined with regulatory frameworks and inter-institutional collaboration, are fundamental tools for building an informed and resilient citizenry in the face of the risks of the digital society.

Keywords Media literacy, Disinformation, Digital education, Critical skills, Algorithmic journalism

1. Introducción

En la era digital, la desinformación se ha convertido en uno de los mayores retos para la calidad de la información y la confianza pública en los medios. La rapidez de propagación que ofrecen las plataformas digitales y la prioridad dada a los contenidos virales sobre los veraces representan un riesgo creciente para los sistemas democráticos. En este contexto, la alfabetización mediática emerge como una estrategia esencial para fortalecer las competencias críticas de la ciudadanía y mitigar la propagación de contenidos falsos. La alfabetización mediática permite a los usuarios comprender y cuestionar la información que consumen, ayudándoles a reconocer contenidos manipulados y a desarrollar un pensamiento crítico frente a los mensajes que circulan en redes sociales y otros espacios digitales.

El presente estudio se centra en analizar casos específicos de programas exitosos de alfabetización mediática implementados en distintos contextos y audiencias, identificando los factores que han contribuido a su efectividad. Estos programas ofrecen una variedad de enfoques, desde la capacitación en verificación de datos hasta el desarrollo de habilidades para identificar y resistir la manipulación informativa. A través de un análisis detallado de iniciativas en Europa y América Latina, esta investigación examina cómo la alfabetización mediática puede empoderar a los usuarios para enfrentarse de manera crítica a la desinformación y reducir su impacto en la sociedad.

Este artículo aborda además el papel que juegan los algoritmos en la viralización de contenidos desinformativos y cómo una sólida alfabetización mediática puede contrarrestar este fenómeno. Finalmente, se subraya la importancia de una colaboración entre gobiernos, plataformas digitales y la sociedad civil para promover programas de alfabetización mediática y desarrollar un ecosistema informativo donde la verdad prevalezca sobre la viralidad, creando una ciudadanía informada y resiliente frente a la desinformación.

2. Revisión de la literatura

2.1 Desinformación y su impacto en entornos digitales

La desinformación, entendida como la difusión intencionada de información falsa o engañosa, ha cobrado una relevancia significativa en el entorno digital. La velocidad con la que se propaga en redes sociales y otras plataformas dificulta que las audiencias puedan verificar la veracidad del contenido que consumen, lo cual representa un desafío para la integridad informativa (Tandoc et al., 2017). Este fenómeno ha suscitado un creciente interés entre académicos, periodistas y reguladores, quienes buscan tanto identificar los factores que facilitan la desinformación como analizar sus consecuencias para la opinión pública (Wardle & Derakhshan, 2017). De acuerdo con Carenzio et al. (2021), las personas mayores de 60 años carecen de la fortaleza de las competencias digitales frente a la desinformación y la comunicación digital; en auge están los periódicos digitales y repertorios mediáticos de toda índole, por lo que la capacitación para este tipo de público se hace imprescindible.

Elías-Zambrano et al. (2022) destacan cómo el contexto político y cultural actual potencia la difusión de contenidos falsos, que se esparcen en los entornos digitales a una velocidad difícil de controlar. Este escenario, según López-García y Vizoso (2021), requiere que el periodismo se adapte

constantemente a los avances tecnológicos para no quedar rezagado en la lucha contra la desinformación, especialmente en un entorno de alta interactividad y consumo rápido de información.

2.2 Papel de los algoritmos y las plataformas digitales en la difusión de desinformación

En este entorno digital, los algoritmos de plataformas como Facebook, X y Google juegan un papel crucial al priorizar el contenido que genera mayor interacción, sin considerar su veracidad. Este fenómeno facilita la viralización de noticias falsas, tal y como expresan Vosoughi et al. (2018) acerca del mayor número mayor de noticias falsas viralizadas y difundidas en X (antes Twitter) respecto de las noticias verdaderas; lo falso se difundió “más lejos, más rápido, más profundamente y más ampliamente” que lo verdadero. En el análisis de Allcott & Gentzkow (2017), se concluye que esta acelerada difusión de desinformación socava la confianza en los medios y plantea un desafío para los procesos de verificación informativa; exponen una encuesta de Gallup, en la que se revela un declive continuo de la “confianza” en los medios de comunicación y esto puede ser la causa y la consecuencia de que las noticias falsas ganen terreno. Bakir & McStay (2018) también subrayan el impacto de los “medios empáticos” o “información emocional”, en los que la personalización algorítmica refuerza las respuestas afectivas del público, incrementando la resonancia de los mensajes desinformativos. Y presta especial atención a las cercanas y posibles noticias falsas, “automatizadas optimizadas empáticamente”.

2.3 Regulación y alfabetización mediática como estrategias complementarias

Diversos países han implementado marcos regulatorios para mitigar la desinformación. Por ejemplo, la Unión Europea desarrolló un Código de Prácticas contra la Desinformación para limitar la difusión de contenido falso (Reglamento UE 2022/2065), mientras que en España se establecieron códigos de conducta para proteger a los usuarios de la desinformación en la Ley 13/2022 (Bukovska, 2018). Sin embargo, estos marcos enfrentan desafíos importantes, especialmente en relación con la protección de la libertad de expresión, lo que ha llevado a explorar la alfabetización mediática como una solución adicional para dotar a los ciudadanos de herramientas críticas frente a la desinformación.

2.4 Alfabetización mediática y su efectividad en la detección de desinformación

La alfabetización mediática ha emergido como una estrategia crucial para combatir la desinformación en entornos digitales. Pérez-Rodríguez y Delgado-Ponce (2012) argumentan que empoderar a la ciudadanía con competencias en acceso y evaluación crítica de la información es fundamental para enfrentar la manipulación mediática. Aguaded y Romero-Rodríguez (2015) señalan que estas competencias permiten a los usuarios manejar el espacio digital con mayor seguridad y discernimiento, dotándolos de las herramientas necesarias para navegar la “sociedad líquida” donde la información sin verificar se propaga rápidamente.

Estudios recientes han confirmado la efectividad de los programas de alfabetización mediática en distintos grupos de edad. Carezzio (2021) explora cómo programas implementados en entornos escolares ayudan a los estudiantes a identificar información falsa mediante el desarrollo de habilidades críticas. Contreras Espinosa (2020) analiza el rol de las instituciones educativas en

Cataluña en la promoción de un pensamiento crítico entre los jóvenes, concluyendo que estos programas reducen la susceptibilidad a la manipulación informativa.

Además, Tymoshchuk (2021) examina la eficacia de los programas de alfabetización mediática dirigidos a audiencias mayores, un grupo frecuentemente afectado por la desinformación en redes sociales. Sus hallazgos indican que las iniciativas orientadas a este grupo, como el programa "Mayores con Wifi", mejoran su capacidad de discernir entre noticias confiables y engañosas, aumentando su resiliencia frente a la desinformación.

Benesch (2023) enfatiza la necesidad de enfoques educativos proactivos y flexibles para mitigar los efectos de la desinformación. Argumenta que la alfabetización mediática no solo ayuda a las personas a evaluar críticamente la información, sino que también fomenta una cultura de responsabilidad y verificación, facilitando la identificación de intentos de manipulación.

2.5 Casos exitosos de alfabetización mediática

La alfabetización mediática ha mostrado resultados prometedores en iniciativas como "EduMedia Test" y "EduCAC", programas diseñados para aumentar la competencia crítica frente a la desinformación en diferentes audiencias (Elías-Zambrano et al., 2022). "EduMedia Test", lanzado por el Consejo Audiovisual de Portugal, se enfoca en capacitar a jóvenes en la identificación de información falsa y el impacto de los algoritmos en la personalización de contenidos, mientras que "EduCAC" promueve la verificación de datos y la detección de noticias falsas entre estudiantes y docentes en Cataluña. Estos programas han demostrado ser efectivos en la mejora de la comprensión de los riesgos de la desinformación y representan un modelo replicable para otras regiones (Celot, 2021). Destacan Diehl et al. (2024) acerca de la necesidad de adquirir competencias

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3. Metodología

Para analizar la efectividad de diversos programas de alfabetización mediática en la lucha contra la desinformación, se seleccionaron iniciativas de varios países que han implementado estrategias específicas para fortalecer las competencias críticas de diferentes grupos de la sociedad. Estos programas incluyen "EduMedia Test" (Portugal), "EduCAC" (Cataluña, España), "Mayores con Wifi" (Andalucía, España), Alfabetización mediática y formación (Perú), *Público na Escola* (Portugal), "Mentes AMI" (España) y *The Learning Network* (EE.UU.).

En este sentido, la metodología para evaluar estos estudios de caso incluye la revisión de la literatura, análisis de contenidos y cuestionario dirigido a periodistas.

En cuanto a la revisión de la literatura, este procedimiento nos aporta estudio crítico sobre nuestro tema de interés y también revela semejanzas y dificultades en la bibliografía analizada (Guirao, 2015). En el caso del análisis de contenido, como se conceptualizó originalmente por Berelson (1952), se presenta como una metodología sistemática, objetiva y cuantitativa diseñada para examinar de manera rigurosa los elementos manifiestos presentes en los mensajes comunicativos. Más adelante, Bardin (1996) amplía esta perspectiva al describir el análisis de contenido como un conjunto versátil de herramientas metodológicas aplicables a una amplia variedad de discursos y contextos comunicativos, ofreciendo un enfoque estructurado para estudiar tanto los significados explícitos como las estructuras subyacentes en los textos. Por último, la selección del cuestionario como herramienta de investigación se fundamenta en su versatilidad dentro del ámbito educativo, especialmente cuando se complementa con la interacción directa que caracteriza a las entrevistas, fortaleciendo la dinámica entre investigador e interlocutor (Rodríguez et al., 1996). Según Hayman (1984), este instrumento resulta ideal para recoger retroalimentación, opiniones, y analizar comportamientos, además de generar recomendaciones que optimicen las decisiones adoptadas y faciliten la comparación sistemática de datos. En el contexto de los medios de comunicación, la adolescencia y el uso de la tecnología, el cuestionario se presenta como una herramienta especialmente adecuada para la recopilación de información relevante, es decir, un "excelente instrumento de recogida de información" (Méndez-Garrido, 2004). Su aplicación permite acceder a datos esenciales sobre conductas, intereses, objetivos y aspiraciones de los grupos objeto de estudio, además de captar el conocimiento que pueden aportar observadores externos sobre los contextos sociales, laborales, profesionales o personales de dichos colectivos (Pérez y García, 1989).

Tendremos en cuenta los objetivos de cada programa, con sus fines, incluyendo a qué población objetivo busca servir y qué habilidades mediáticas críticas desea fortalecer.

4. Resultados y discusión

4.1 Resultados del análisis de contenido

Cada estudio de caso se explora a continuación con los elementos de metodología y evaluación mencionados anteriormente.

“EduMedia Test”, desarrollado por la Entidade Reguladora para a Comunicação Social (ERC) de Portugal, está dirigido a jóvenes estudiantes y busca capacitarles en competencias de análisis crítico de la información, como vemos en la figura 1 (portada del método). Su objetivo es que los participantes comprendan el impacto de los algoritmos en la personalización de contenidos y cómo estos pueden influir en la percepción de la realidad.

Los resultados iniciales indican una mejora significativa en la habilidad de los estudiantes para identificar noticias falsas y un aumento en la conciencia sobre el papel de los algoritmos en la difusión de información.

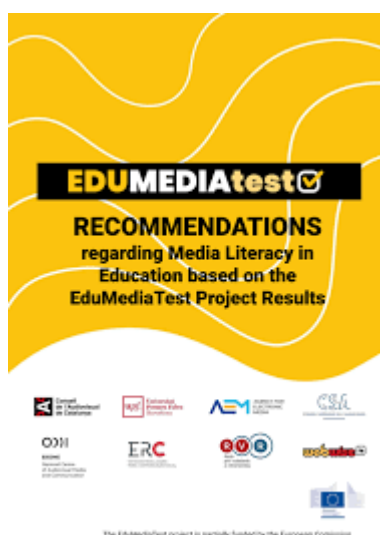


Figura 1. EduMediaTest

“EduCAC”, impulsado por el Consejo Audiovisual de Cataluña (CAC), se orienta tanto a estudiantes como a docentes, promoviendo la conciencia crítica sobre el consumo de información en línea. El programa fomenta competencias en verificación de datos y comprensión de cómo los algoritmos crean “burbujas informativas”. En la figura 2, vemos un espacio dedicado a las noticias falsas.

Se ha registrado un aumento en las habilidades de verificación de datos entre los estudiantes y una mayor disposición de los docentes para integrar contenidos de alfabetización mediática en sus clases.



Figura 2. EduCac

Este programa del Consejo Audiovisual de Andalucía (CAA) está diseñado para capacitar a personas mayores en la identificación de desinformación y en la comprensión del papel de los algoritmos, tal y como vemos en la figura 3, con un cartel sobre uno de sus talleres. Se centra en aumentar la resiliencia de este grupo ante bulos y noticias falsas.

Los participantes mostraron una mejora en su capacidad para reconocer desinformación y un incremento en su confianza al usar herramientas digitales.



Figura 3. Mayores con wifi

Esta iniciativa, desarrollada por el Consejo Consultivo de Radio y Televisión (CONCORTV) en Perú, busca promover una cultura de responsabilidad informativa en comunidades de difícil acceso. Su meta es fortalecer la capacidad de discernimiento entre jóvenes y adultos frente a contenidos falsos. Una de sus líneas de trabajo es el "ABC de la Alfabetización Mediática e Informativa", en la figura 4 tenemos una imagen de la preparación online de docentes de este desarrollo. Las encuestas a los participantes muestran una mejora significativa en la capacidad de reconocer desinformación y en la adopción de prácticas responsables al consumir información.



Figura 4. CONCORTV

Público na Escola, del periódico Público, busca inculcar en los estudiantes un uso consciente de los medios y un rechazo activo hacia la desinformación. Su objetivo es fortalecer habilidades críticas y evaluativas frente a la información. Dispone de página web, insertada en la del diario; vemos en la figura 5 su portada de inicio.

Los estudiantes que participaron en el programa demostraron una mayor capacidad crítica para evaluar noticias y una reducción en la compartición de información no verificada.



Figura 5. Público na Escola

Este programa de la Fundación Atresmedia en España está dirigido a capacitar a jóvenes en el reconocimiento de desinformación, con un enfoque en cómo los algoritmos influyen en los contenidos que consumen. “Mentes AMI” ha mostrado resultados positivos en la capacidad de los jóvenes para cuestionar la información y en su concienciación sobre la influencia de los algoritmos. Explicación sobre la Alfabetización Mediática e Informacional en la figura 6.



Figura 6. Mentas AMI

Desarrollado por The New York Times, este programa ofrece a estudiantes y profesores herramientas para analizar los medios y evaluar críticamente la información, especialmente en temas de actualidad, tal y como visualizamos en la figura 7.

Los estudiantes han mostrado una mayor habilidad para discernir entre noticias verificadas y falsas, y los docentes se sienten más preparados para educar en alfabetización mediática.

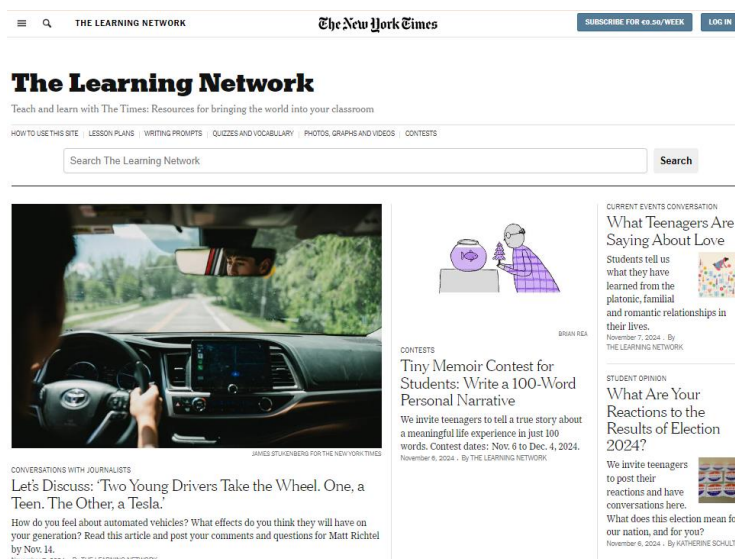


Figura 7. The Learning Network

4.2 Resultados del cuestionario

En relación con la desinformación, vemos en la figura 8 que los periodistas consideran que la utilización de algoritmos para la verificación de información es algo efectiva (41,6%) y el 25,7% la considera muy efectiva. Por lo tanto, podría contemplarse como una herramienta útil en el espacio de la desinformación y verificación de información.

¿Qué tan efectiva es la utilización de algoritmos para la verificación de información?

113 respuestas

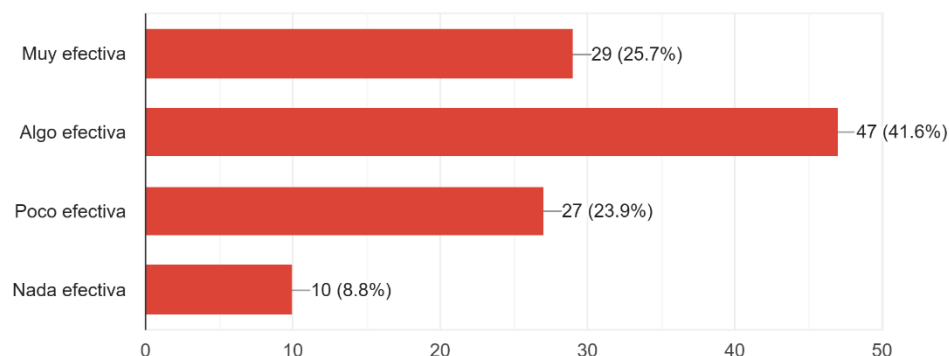


Figura 8. Verificación y desinformación

Para los periodistas consultados, se contempla el uso de herramientas de verificación de información como habilidades esenciales en el paradigma de la alfabetización algorítmica en el periodismo; también -como se ha mencionado anteriormente- en lo relativo a la verificación y desinformación, sobre el uso de algoritmos para verificar la información; además de tener en cuenta la innovación sobre la inteligencia artificial aplicada al periodismo. Acerca de estas habilidades prácticas, que tenemos en la figura 9, los resultados de la muestra destacan las competencias clave necesarias para la alfabetización algorítmica en el periodismo. Entre ellas se encuentran:

- a) la formación en detección de sesgos y discriminación en algoritmos (50,9%);
- b) el análisis de datos (47,4%);
- c) el uso de herramientas para la verificación de información (45,6%);
- d) la capacidad para manejar herramientas de visualización de datos (36,6%);
- e) el conocimiento de metodologías que promuevan la transparencia en el uso de algoritmos (35,1%);
- f) las habilidades comunicativas para explicar al público conceptos relacionados con los algoritmos (31,6%);
- g) la capacidad de auditar algoritmos (28,9%); y
- h) el conocimiento de aspectos éticos relacionados con los algoritmos (27,2%).

En este sentido, el papel de los algoritmos y la inteligencia artificial en la difusión de información es un campo en rápido desarrollo. Si bien estas tecnologías han contribuido a la propagación de noticias falsas, también ofrecen soluciones potenciales. Por ejemplo, se están desarrollando herramientas basadas en inteligencia artificial para detectar automáticamente contenido falso y alertar a los usuarios antes de que lo compartan (Shu et al., 2017). No obstante, estos avances todavía están en sus primeras etapas y presentan limitaciones significativas.

¿Qué habilidades consideras esenciales para la alfabetización algorítmica en el periodismo?

114 respuestas

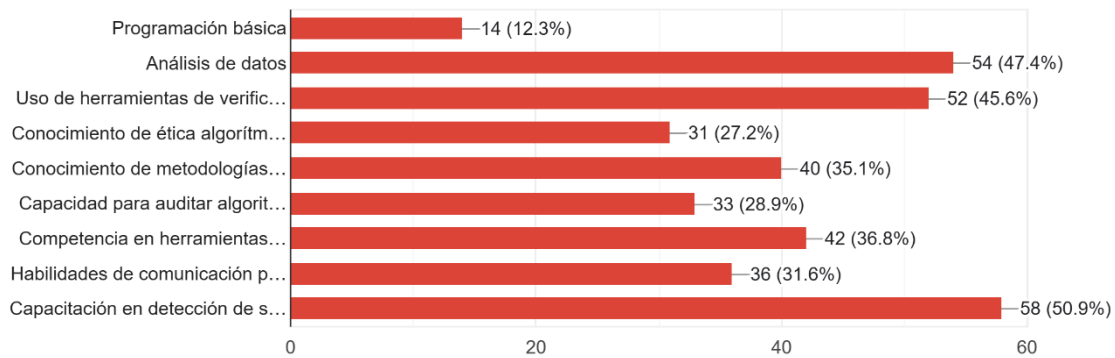


Figura 9. Habilidades prácticas

Por otro lado, la asignatura de la capacitación es relevante en el ámbito de los profesionales. La formación profesional en el ámbito del periodismo debe incluir programas que promuevan la capacitación y la sensibilización para convertir la innovación abierta en herramientas prácticas, reduciendo la resistencia frente al cambio tecnológico. En lugar de temer el avance de la tecnología, la mejor estrategia es adquirir nuevas habilidades, ya que la falta de preparación podría comprometer la calidad de los contenidos periodísticos y aumentar la inestabilidad laboral, como señalan Murcia-Verdú y Ufarte-Ruiz (2019). Según Noain-Sánchez (2022), la implementación de nuevas tecnologías, más ágiles y versátiles, permite reducir tiempos, mejorar la productividad y facilitar tareas repetitivas para los periodistas. La formación y alfabetización tecnológica son esenciales, y algunos grandes medios ya han puesto en marcha programas de capacitación a través de sus Laboratorios o "Labs", mediante talleres o plataformas internas, como describen Zaragoza y García-Avilés (2024).

Porque los desafíos son mayúsculos, lo estamos viendo en cuanto a desinformación, tecnologías emergentes y nuevas herramientas. Un ejemplo son los retos que plantean los algoritmos, que se ven en la figura 10 sobre la "Alfabetización en la profesión": el 43,4% de los profesionales siente que tiene una preparación limitada para enfrentarlos, lo que refleja una falta de confianza en sus competencias actuales y la necesidad de mayor formación en este campo. Un 26,5% se siente moderadamente preparado, indicando que posee un conocimiento básico sobre el impacto de los algoritmos, pero aún necesita mejorar sus habilidades. El 23,9% manifiesta no estar preparado en absoluto, lo que evidencia una preocupación significativa sobre su capacidad de adaptación a las nuevas tecnologías, posiblemente debido a la falta de acceso a recursos formativos. Solo un 6,2% se siente plenamente capacitado, lo que sugiere que este grupo cuenta con una sólida formación y experiencia en el uso de algoritmos, lo que les permite abordar estos desafíos con confianza.

¿Te sientes preparado/a para enfrentar los desafíos que plantean los algoritmos en tu carrera?

113 respuestas

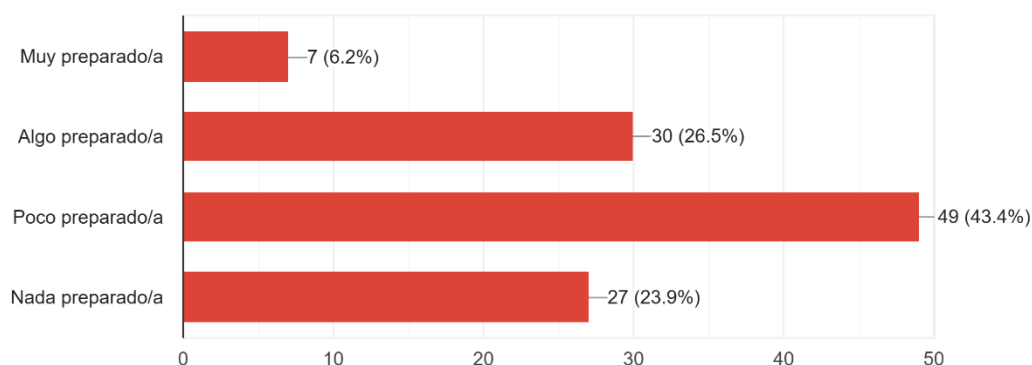


Figura 10. Alfabetización en la profesión

4.3 Espacio digital y desinformación

El análisis empírico confirma las observaciones de Celot (2012) sobre cómo el entorno digital, caracterizado por la sobrecarga informativa y la multiplicidad de pantallas, genera desinformación y pone en riesgo los procesos democráticos. Los resultados del cuestionario dirigido a periodistas muestran que la gran mayoría percibe que la falta de habilidades críticas en las audiencias facilita la difusión de noticias falsas, lo que concuerda con lo expuesto por Guess et al. (2020) sobre la vulnerabilidad de ciertos grupos.

4.4 Influencia en la opinión pública

Los datos del análisis de contenido y la revisión de literatura coinciden en que la desinformación afecta significativamente la opinión pública. Tal como afirman Lewandowsky et al. (2017), la exposición continua a información falsa puede crear una "realidad paralela". Esto se refleja en las respuestas de los periodistas, quienes señalaron que la desinformación ha tenido un impacto directo en la percepción de temas políticos y sociales.

4.5 El papel de las redes sociales y la posverdad

El concepto de "posverdad" mencionado por Herrero de la Fuente y Ríos (2021) es respaldado empíricamente: los resultados del cuestionario indican que los periodistas consideran a las redes sociales como las principales fuentes de desinformación. Este hallazgo apoya la idea de que las redes sociales actúan como un "quinto poder" que promueve información no verificada a gran escala. Los periodistas encuestados señalaron que los algoritmos y la falta de regulación en estas plataformas han exacerbado el problema.

En la opinión de Scolari & Contreras-Espinosa (2019), para un público joven YouTube se ha convertido en el principal motor de búsqueda de información; es un signo del cambio de paradigma en la cultura mediática. Las redes sociales pueden ser herramientas útiles y efectivas para ayudar a la comunidad; es el caso planteado por Tymoshchuk et al. (2019) para contribuir en comunidades locales con buenas prácticas implicando a usuarios y a grupos sociales.

4.6 Segmentación y especialización en el periodismo

Redoli (2016) y Tejedor et al. (2020) destacaron la segmentación del periodismo digital y la hiperespecialización de contenidos. Los hallazgos empíricos también reflejan esta tendencia, con ejemplos de cómo ciertos medios están creando contenido dirigido a nichos específicos, lo que puede aumentar la polarización y reducir la exposición a perspectivas diversas.

4.7 Marcos regulatorios y efectividad

Los datos sugieren que las regulaciones, aunque importantes, no son suficientes por sí solas. Como mencionan Congreso Futuro (2022) y Lewandowsky et al. (2017), las grandes plataformas digitales continúan operando sin un marco regulador global efectivo. Para Patino (Congreso Futuro, 2022), el entorno de internet ha evolucionado hacia un espacio de desinformación y piensan las autoridades que algunas soluciones de regulación del uso de móviles mientras se camina por la calle son suficientes; explica el autor que las plataformas intentan capturar el mayor tiempo posible de nosotros. Desde el punto de vista de Lewandowsky et al. (2017), la escasez del contexto regulador que plantea desafíos significativos para la gobernanza de los entornos digitales. Esta carencia no solo perpetúa la fragmentación normativa entre jurisdicciones, sino que también limita la capacidad de abordar de manera integral cuestiones clave como la desinformación, la manipulación algorítmica y la protección de datos personales. En este ámbito, resulta crucial fomentar una alfabetización mediática que no solo habilite a los individuos para identificar y evaluar críticamente la información en línea, sino que también los empodere para participar activamente en debates regulatorios. A través de iniciativas de alfabetización mediática, las personas pueden ser alentadas a alzar su voz, no únicamente con el objetivo de persuadir directamente, sino también para influir en las percepciones sobre normas sociales y la prevalencia de ciertas opiniones en el ámbito digital. Este enfoque contribuye a desmitificar efectos como el del falso consenso, en el que las personas perciben sus opiniones como más ampliamente compartidas de lo que realmente son, exacerbando divisiones y polarizaciones. Al integrar estas dinámicas en el diseño de marcos regulatorios, se podría desarrollar un enfoque más robusto y adaptativo, capaz de responder a los desafíos emergentes y de promover un entorno digital más equitativo y transparente.

Los periodistas encuestados señalaron que la aplicación de las regulaciones existentes presenta una marcada desigualdad, reflejando disparidades tanto en el enfoque como en la implementación según las jurisdicciones y los actores involucrados. Este panorama fragmentado dificulta la eficacia de los esfuerzos para contrarrestar la difusión de noticias falsas, exacerbando el impacto de estas en la confianza pública y en los procesos democráticos.

En este sentido, se identifica la necesidad urgente de una colaboración más estrecha y coherente entre gobiernos, plataformas digitales y otros actores relevantes. Tal cooperación debería incluir la armonización de estándares regulatorios, el desarrollo de mecanismos transnacionales para supervisar la aplicación de normas y la promoción de iniciativas conjuntas en alfabetización mediática. Estas acciones no solo fortalecerían la capacidad para mitigar la propagación de

desinformación, sino que también fomentarían un entorno digital más transparente y resiliente frente a las amenazas informativas.

Asimismo, comparamos los marcos regulatorios en tanto que en Europa la implementación de códigos de conducta como el de la Unión Europea ha mostrado algunos avances, pero los periodistas consideran que estas medidas aún no son suficientemente estrictas. En contraste, países como España y Portugal están avanzando con proyectos específicos que promueven la alfabetización mediática, pero estos aún no son lo suficientemente extensivos. Y es cierto que en ámbito americano se ha desarrollado un marco que cubre los principales factores.

4.8 Efectividad de los programas educativos

Los resultados del análisis muestran que los proyectos de alfabetización mediática, como “EduMediaTest” y “Mayores con Wifi”, han sido efectivos en ciertas poblaciones, pero su implementación sigue siendo limitada. Coincide con lo afirmado por Guess et al. (2020) sobre la importancia de dotar a las audiencias con herramientas críticas para identificar desinformación.

Sin embargo, los resultados sugieren que la efectividad de estos programas varía. Los periodistas indicaron que los proyectos dirigidos a jóvenes han tenido más éxito, mientras que los dirigidos a adultos mayores y otras audiencias vulnerables necesitan mayor difusión y accesibilidad. Tejedor et al. (2020) ya indicaban que se requieren nuevos marcos organizativos para atender esta diversidad de audiencias en la era digital. En algunos de los programas estudiados, como “Público na Escola”, se utiliza el juego para lograr esta alfabetización mediática porque se articula desde las fortalezas de los elementos lúdicos: la identificación con personajes, la vinculación con estas dinámicas y el lenguaje lúdico (Carenzio et al., 2024).

5. Conclusiones

La culminación principal de este estudio se sustenta en la efectividad de los programas de alfabetización mediática, según el grupo objetivo y la metodología aplicada. Mientras que los programas dirigidos a jóvenes y estudiantes han mostrado un éxito notable en la adquisición de habilidades críticas, aquellos orientados a personas mayores y grupos vulnerables requieren una mayor adaptación y apoyo logístico. Este hallazgo resalta la importancia de un enfoque diferenciador en los programas, que considere tanto las barreras sociales como tecnológicas que estos grupos enfrentan. Asimismo, la alfabetización algorítmica se está consolidando como una competencia crucial en el ámbito periodístico, sin embargo su implementación aún enfrenta desafíos en términos de capacitación y recursos, lo que subraya la necesidad de políticas públicas que apoyen el acceso a estas herramientas y conocimientos.

En este sentido, las implicaciones de los hallazgos destacan la necesidad de diseñar programas de alfabetización mediática que aborden las necesidades específicas de adultos mayores y poblaciones vulnerables. Estos grupos, al encontrarse con dificultades para acceder a información de calidad y evaluar fuentes confiables, son particularmente susceptibles a la desinformación. Por lo tanto, es fundamental implementar enfoques adaptativos, como talleres presenciales con un enfoque práctico, capacitación en herramientas digitales accesibles y materiales contextualizados

culturalmente. A su vez, se recomienda fomentar alianzas intersectoriales para garantizar que estos programas sean sostenibles y logren un alcance más amplio, promoviendo una ciudadanía más informada y resiliente en contextos de alta vulnerabilidad frente a la desinformación. Un aspecto a considerar en la futura implementación de estas recomendaciones es la necesidad de colaboración entre gobiernos, instituciones educativas, organizaciones no gubernamentales y el sector privado para construir un marco educativo integral y accesible.

Los programas de alfabetización mediática analizados subrayan la importancia de continuar desarrollando estrategias educativas inclusivas y contextualizadas, que respondan a los desafíos específicos de la desinformación en distintos sectores de la sociedad. Es imperativo que, además de adaptarse a las particularidades de cada grupo, estas estrategias se acompañen de una evaluación constante para ajustar los programas según las necesidades emergentes de los participantes. Una discusión adicional es la relevancia de incorporar nuevas tecnologías, como la inteligencia artificial, en la capacitación mediática, ya que estas herramientas pueden jugar un papel importante en la lucha contra la desinformación, pero también presentan nuevos retos éticos y educativos.

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Podcasts and Inclusive Narratives. New Spaces to Foster Citizenship Through Words

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Abstract

This article outlines a research-action project that uses podcasts as an educational tool within the field of diversity and inclusion, titled “Narrazioni di genere e altre identità. Costruire comunità inclusive” (“Gender Narratives and Other Identities: Building Inclusive Communities”). The podcast was chosen for its versatility and unique narrative characteristics, engaging students and teachers in reflecting on identity and diversity through individual and collective memories. The approach integrates the pedagogy of memory and storytelling as tools for critical literacy, emphasizing marginalized stories while fostering media literacy. The article introduces “Chiamami così” (“Call me this way”), a podcast series featuring stories of diversity and belonging within marginalized communities. The project explores various dimensions of diversity, creating a platform for dialogue and reflection. Through testimonials, interviews, and reportage, “Chiamami così” leverages the potential of podcasts to provide rich, innovative perspectives on inclusion and community, aiming to establish a shared and inclusive language.

Keywords *podcast; literacy; diversity & inclusion; individual and collective memories; counter-narratives*

1. Introduction

This article presents a podcast series developed as part of a research-action project on diversity and inclusion titled “Narrazioni di genere e altre identità. Costruire comunità inclusive” (“Gender Narratives and Other Identities: Building Inclusive Communities”). The podcast serves as an educational tool for students and teachers, leveraging its narrative-driven potential to literacy through storytelling. As a medium, the podcast proves particularly suitable for disseminating educational and formative content. It offers a means to recover silenced narratives and facilitates critical and reflective thinking through storytelling. This approach expands the concept of literacy beyond reading and writing, incorporating the ability to reflect and critically engage through a new medium.

2. Building spaces for storytelling as opportunities for literacy and recognition

Narrating the past in an educational context means choosing to engage with both individual and collective memories. The earliest pedagogical reflections in this area are attributed to Duccio Demetrio and the insight presented in his volume dedicated to *Pedagogia della Memoria* (1999), in which he defined memory as a tool for care, positioned between biographies and autobiographies. In the field of historical-educational studies, memory has only recently become a subject of focused research, owing

to pioneering investigations conducted in the early 2000s in Spain and Latin America. This trajectory culminated in the fundamental work *School Memories: New Trends in the History of Education* (Meda et al., 2007), which also laid a solid foundation for the Italian scholarly tradition. Historian Yuval Noah Harari has identified human narrative capacity—initially oral, then written, and eventually expressed through new media—as one of the fundamental traits that characterize the *Homo sapiens* (2017). This capacity has enabled human beings to engage in abstract thought and form connections through shared values, ideals, and ideas that solidify into collective narratives. These narratives allow societies and groups to recognize themselves and collaborate effectively. In this context, reading and writing emerge as tools of social cohesion, capable of building and preserving collective roots. These social factors significantly motivate expressive abilities, allowing the creation of narratives that endure over time through the written and oral forms (Brook & Patti, 2014).

The process of remembering in a social setting, as defined by Maurice Halbwachs (Halbwachs, 2024), is characterized by a historical trajectory that culminates in the definition of social frameworks of collective memory. These frameworks consist of memories that a group selects and decides to center in its narratives. It is within this narrative process that the use of collective memories becomes a literacy tool. Narrating becomes an opportunity to organize a structured discourse aimed at communicating elements of oneself or one's community to an external audience. This process becomes a critical focus for literacy, as it is inherently tied to relational abilities and forms the foundation for participation in community life (Meschini, 2018).

The ability and opportunity to narrate finds in podcasts a novel means of experimentation aimed at literacy associated with critical thinking. This is particularly true during production phases that are not merely technical steps but rather integral parts of composing a narrative text ultimately entrusted to the human voice. In this sense, podcasts are presented here as a viable tool for those seeking to bring the topic of media literacy into educational contexts, with a particular emphasis on marginalization. Literacy challenges often affect individuals from marginalized groups who, due to limited social interaction, find their interest in constructing and using language delegitimized by the lack of external recognition they receive. From this perspective, engaging with individual and collective memories can serve as an opportunity to reclaim the centrality and importance of silenced narratives, thereby providing motivation to re-engage with literacy (Grasso, 2020). Podcasts, with their distinctive characteristics and narrative potential, are proposed here as an educational and formative tool. They serve to recognize marginalized stories on the one hand and initiate a process of media literacy on the other.

3. The characteristics of podcasts as a communication tool

Born, at least in their contemporary conception, in the first decade of the 21st century, podcasts—in audio-only format or as audio-visual formats (also referred to at times as “vodcasts”)—have, in recent years,¹ solidified their central role² among the various communication channels available in the entertainment world. Consequently, they have also become prominent in the realms of information, education, and academic dissemination, the latter being a field in which podcasts are now a significant subject of study. This prominence has arisen due to certain distinctive characteristics that set podcasts apart

from other media. These features pertain both to their modes of production and consumption, as well as to their fundamental attributes as a communication tool.

First and foremost, in terms of their audience, podcasts are distinguished by their remarkable versatility of consumption. Far more than other mass media, podcasts offer extensive freedom to listeners, providing the opportunity to be consumed by an audience “that wants to listen to what they want, when they want, where they want, and how they want” (Jham et al., 2008). Podcast listeners can choose when to listen without adhering to programming schedules or being subject to the “constraints” inherent in live broadcasting. Furthermore, seriality is an additional feature that facilitates user engagement. Podcasts are rarely produced as one-off episodes; instead, they are often released over extended periods, typically on at least a weekly basis. This consistent cadence allows the collection of episodes—distributed via RSS feeds, supported by dedicated hosting services, and accessed today, albeit with some drawbacks, through digital streaming platforms (Sullivan, 2019; Bonini & Treré, 2024)—to build listener loyalty. Users need only subscribe to the feed, generally free of charge, to effortlessly return to the content.

For those who produce podcasts, significant advantages are evident primarily in terms of production agility: without necessarily striving for excellent production quality, the technical skills required to record and post-produce an episode are quite easily attainable, and basic equipment (microphones, recording supports, editing, and post-production software) can be purchased without significant financial outlays, or, in the case of software, obtained in open-source versions³. Podcasts also benefit from a fairly straightforward and cost-free distribution process: the main podcasting platforms—Spotify, Apple Podcasts, and Audible, above all—impose no particular entry barriers, neither in terms of service fees nor content filtering, while uploading on YouTube, now a leading platform for video podcasts, is likewise free. Naturally, being present on major platforms involves some challenges in terms of visibility, as it is influenced by algorithmic logics often based on rating and ranking criteria that are not explicitly disclosed, making content discovery difficult (Wade Morris, 2021). Nevertheless, these challenges can be overcome through integrated use of social media, which are increasingly employed as “bridge” platforms for promoting cultural products by leveraging cross-media interactions (Adler Berg, 2023).

The strength of podcasts lies, perhaps most significantly, in their expressive characteristics. The experience of listening to a live monologue or dialogue fosters a sense of intimacy for the listener, creating what Swiatek (2018) describes as “the impression of directness and closeness, that makes it such a compelling way to bridge spatial and temporal divides.” This quality enables podcasts to “help individuals cross contextual boundaries and knowledge boundaries,” enhancing the perception of authentic, unmediated communication. Such authenticity generates a sense of trust in the listener and promotes the creation of a sense of community among groups of listeners (Jorgensen, 2021; Euritt, 2022).

To conclude the overview of the distinctive characteristics of podcasts compared to other media, we present here a concise yet comprehensive list that appears to be exhaustive. This list, proposed by Spinelli and Dann in a book dedicated to the subject, is organized into 11 points:

1. Consumption on earbuds encourages an interior and intimate mode of listening. [...]
2. Podcasting is primarily a mobile medium. Podcasts move with the human body and are consumed in urban spaces [...].
3. Podcasts offer more listener control. It is extremely easy to replay a podcast and listen to it repeatedly. [...]
4. Podcast listening requires more selection and active engagement on the part of the consumer in choosing listening options. [...]
5. Podcasts can thrive on niche global audiences. They are less rooted in material communities, regions, and countries (an advantage and a disadvantage).
6. Podcasts are interwoven into social media and as such have a heightened capacity to enhance engagement with, and activate, an audience. [...]
7. Podcasts can be produced and distributed without the approval of a commissioning editor, program controller, or gatekeeper. This means that creators are often working with great freedom and little support.
8. Podcasts are usually distributed as part of a freemium model [...].
9. Podcasts are “evergreen,” available (theoretically) in perpetuity [...].
10. [...] Mistakes can be corrected, apologies added, advertisements rotated, and sound remixed.
11. Podcast do not have the timing and scheduling constraints of broadcast media [...]. (Spinelli & Dann, 2019)

4. Podcasts in education

The distinctive elements typical of podcasts, which have quickly made them highly popular communication tools, also render them equally effective channels for the dissemination of knowledge, and this is true in the educational field as well, where the effects of their use have been widely studied and discussed. Versatility and low production costs have enabled their rapid integration into educational practices, initially in a more experimental manner and now with a range of consolidated uses that, when compared to traditional classroom lectures, can be summarized as “substitutional use, supplementary use, and creative use” (McGarr, 2009). The substitutional use has long been debated because some scholars, during the early stages of the phenomenon, had proposed the hypothesis that it could discourage classroom attendance and the associated benefits. However, recent studies agree in emphasizing that this risk seems to have been averted (Williams et al., 2016). This is because, given the availability of audio content, students still seem to prefer the use that McGarr specifically defined as “supplementary,” meaning as a complement to teaching, through which they can reinforce or deepen the skills they have acquired (Bryans Bongey et al., 2006; Lonn & Teasley, 2009). Finally, creative use, which refers to the co-production of podcasts created together with students (Lazzari, 2009), serves as an active learning tool that helps to increase engagement in educational activities (Hall & Jones, 2023), stimulating the search for alternative approaches to storytelling or the focus on concepts.

Podcasts, as recently noted by Moore (2024) in a comprehensive review on the topic, can thus demonstrate remarkable utility in educational contexts precisely due to the same characteristics that have made them so popular in recent years as a source for entertainment and information. Their “conversational” nature allows for the presentation of complex concepts and ideas in more accessible terms,

while their ability to encourage active listening to perspectives different from those typically encountered fosters the development of opportunities for dialogue and increases student engagement with topics that are less familiar to them:

Podcasts may also be useful tools for stimulating critical thinking and analysis, particularly when confronting issues which may be unfamiliar or uncomfortable for students, and which may challenge normative expectations and understandings. (Moore, 2024)

5. Podcasts as an inclusive medium

The same characteristics that have made podcasts an important resource in the current educational landscape have also turned them into a medium with a significant impact in terms of inclusivity and the construction of alternative narratives to those that dominate mainstream discourse. The low barrier to entry, both in terms of production and consumption, despite the aforementioned challenges of emerging from their niche due to the listening dynamics now controlled by major distribution platforms (Sullivan, 2019), allows marginalized communities to have a voice, enabling them to engage in self-narration free from external interference. Moreover, the narrative formats typical of podcasts, such as the monologic storytelling or the two-voice interview, assist in producing an unmediated account of direct life experiences and highlight perspectives that are unconventional in comparison to mainstream views.

Numerous examples of podcasts have facilitated experiences of “counter-narratives” that challenge gender, racial, social stereotypes, or those related to the theme of disability. Some of these have also been the subject of scholarly study. For instance, three podcasts about stories from the Latinx community produced by the U.S. National Public Radio, which provide an authentic and non-hetero-directed perspective on “*latinidad*” through a storytelling mode typical of this culture (the “*crónica*,” a narrative subgenre common in Latin America that here contributes to representing decentralized subjectivities and constitutes “an intervention to the universalist [...] assumptions of the narrative paradigm”) and an “hemispheric” approach to the theme (Reyes García & Martínez, 2021). Another example is the Swedish podcast “*Flyktpodden*,” literally “the escape podcast,” dedicated to ethnic minorities in Sweden and promoting intergenerational dialogue among migrants of different ages, aiming to overcome majority narratives through the sharing of common stories and the construction of an alternative narrative that goes beyond stereotypical representations (Gustafsson, 2023). Finally, two Italian-language productions—“*S/Confini*” and “*Black Coffee*”⁴—which, drawing from the post-colonial imagery tied to Italy, have worked to shed light on issues related to diasporas and migrations to and from Italy, offering a broader and alternative view of Italian identity compared to the mainstream representation (Finozzi, 2023).

These examples, to which others could be added, fully represent the versatility and potential of podcasts as a tool useful for the construction of shared memories of experiences of marginalization, facilitated by the sense of intimacy that characterizes this medium and which contributes to the strengthening of the sense of community, positioning itself as a space where it is possible to give prominence to minorities.

Podcasts offer a new space at the margins [...] for voicing the self and community, and for constructing subaltern counterpublics [...] in ways that seek to both highlight and challenge recurrent processes of

racially-formed modes of disenfranchisement. [...] This counterpublic space is private enough to grant podcasters a safe venue to express their identities in their preferred manner and to build trust [...]. Podcasts serve as a public sphere for anti-racist consciousness and create a framework for progressive political activity. (Vrikki & Malik, 2019)

The possibility of free reconceptualization offered by these spaces, combined with the ease of dissemination, makes them, as we have stated, a highly educational tool, useful for increasing awareness and collective sensitivity regarding these issues. Moore, in this regard, drawing on observations by Harris (2019), highlights the potential of podcasts in the educational field, particularly when utilized to enhance student engagement and the development of critical thinking on socio-political topics.

6. “Chiamami così”: a podcast for storytelling and literacy

When, as part of the project “Narrazioni di genere e altre identità. Costruire comunità inclusive,”⁵ we had to choose a communication strategy for the educational kits intended for students and teachers, which were to be produced as outputs from our research activities, we decided to create a series of podcasts, entrusting their production directly to those who could use them as a tool for self-narration of their life stories and the communities to which they belong.

The series, titled “Chiamami così” (“Call me this way”), borrowing the title from a book by Vera Gheno (2022) is dedicated to the storytelling of personal experiences through the voices of the protagonists themselves. It addresses the many aspects of diversity that emerge from individual and collective memory narratives or from reports of inclusive experiences, and aims to place particular emphasis on the lexicon of diversity, with the intention of collectively building forms and ways of a broad and inclusive language. In this way, the focus on literacy also encompassed the ability to develop and spread an inclusive language, through the direct involvement of those who are frequently subjected to linguistic stereotypes.

To date, six episodes have been produced—soon to be available on the project’s website, which is currently in its beta version, and on distribution platforms—and at least two more are in production. Additionally, one final introductory episode, created by the project coordinators, will be added.

1. Episode 1 is titled “Lo Sport che accoglie” (“The Sport That Welcomes”). It tells the story of “Terzo Tempo,” an integrated rugby project that has been active for over ten years at Valdisieve Rugby – Polisportiva Sieci, located in the province of Florence. The narrative gives voice to various key figures—the project manager, one of the coaches, and one of the athletes involved. The story highlights the broad potential of sports clubs as spaces for local training, community building, relationship development, and inclusivity, whose impact extends beyond young people to their families and the connected communities. The episode concludes with a historical overview provided by the episode’s author, starting with a reflection on the accessibility of sports for individuals with disabilities in Italy, before expanding to focus on the discrimination they faced throughout the twentieth century, ultimately leading to a description of the current situation, which has certainly improved but remains insufficient.

2. Episode 2 is titled “Convivere con la diversità. Fabrizio Acanfora racconta l'autismo” (“Living Together in Diversity. Fabrizio Acanfora Talks About Autism”), and it features a long and interesting interview with Fabrizio Acanfora, an Italian writer and activist known for his focus on issues related to neurodivergent individuals. The interview addresses the topic of neurodiversity both from a theoretical perspective, discussing the current framework in light of contemporary sensitivities, and through the narration of Fabrizio Acanfora’s lived experiences. His approach to the topic contrasts with the now widespread notion of inclusivity, instead advocating for the concept of “coexistence among differences,” which avoids implying the superiority of the category that includes over the one that is included.
3. Episode 3 is a theatrical performance by Egon Botteghi, who has adapted his monologue “Parti di madre trans*” (“Parts of a Trans* Mother”) for “Narrazioni di genere”: a performance/seminar that is simultaneously a testimony of the author’s life, an autobiographical performance centered around the narrative—alternating between ironic and dramatic tones—of his experience as a trans mother of two children, which includes a careful reflection on the prejudices still widely prevalent around this topic.
4. Episode 4 is yet another interview with Irvin Mujčić, the creator of the “Srebrenica – City of Hope” project, and is titled “Ekometa village: percorsi di Memoria attiva nel cuore del bosco di Srebrenica” (“Ekometa village: paths of active memory in the heart of the Srebrenica forest”). The interview, recorded in the Ekometa forest, narrates Mujčić’s story and his attempt to establish paths of active memory in the place he was forced to leave in 1992 and to which he was only able to return in 2003.
5. Episode 5—titled “La lingua tra identità e riconoscimento” (“Language between identity and recognition”)—focuses on the theme of “forbidden languages” and the difficulties faced by foreign speakers in a territory where their language is not spoken. The episode recounts the protagonist’s dual experience, first as a speaker of Kurdish in Turkey, a language that is indeed forbidden, and then, once she arrives in Italy, her relationship with learning the local language, comparing it with the difficulties encountered by her mother. The episode also reflects on the role that mastering the language of the host country still represents today as an often insurmountable barrier for migrants, one that risks undermining self-determination, the choice of qualified professions, and the process of integration. The focus of the narrative then shifts to the story of two Albanian women currently living in Donoratico, who retrace the stages of their integration process, interpreted through their relationship with the Italian language. Finally, an interview with Elvira Mujčić, a Bosnian writer and translator, explores the reflection on the relationship with the mother tongue in the country of migration.
6. Episode 6 recounts through interviews with three members of Sinti and Roma communities the experiences of marginalization endured directly or by their families. It is titled “Sinti e Rom a scuola” (“Sinti and Roma at School”) because the focus of the narrative is on school memories, with special attention to the history of the differential classes for Roma and Sinti within Italian state schools.

Episodes in the making:

7. The first of the episodes in the making is an in-depth exploration of gender stereotypes and the implications of motherhood in the workplace, based on archival materials from the Ipazia Voluntary Association of Prato.
8. The latest episode set to be produced will focus on the story of a daughter's experience in a homogenous family, exploring current misconceptions around these family realities.

Each episode of the podcast was created by individuals, specifically students, who have lived the experiences narrated. In reconstructing the narrative, they organized the relational and literacy space that enabled them to offer a critical and enriching perspective on realities often associated with marginalization. In this process, the words from a broad and inclusive vocabulary played a central role in both the production and post-production work.

7. Methodology and Impact Analysis

Each episode was entrusted to one or more people involved in the project, who were given complete freedom in choosing the topic to be addressed and the manner of narration. The production team's role was limited to providing a brief that could serve as a starting point for defining the outline and gathering materials and testimonies, but full control over content and communication choices was left to the contributors. As a result, the episodes explored various expressive modes allowed by the podcast medium, from a single voice to dialogues, interviews, reports, and theatrical monologues.

The creation process was entrusted—specifically regarding the selection of content—entirely to the discretion of those working on individual episodes. This included selecting the theme and deciding on any individuals to involve, while maintaining a collegial approach to ensure consistency and the exchange of ideas and insights. During the process, a production model was developed with the aim of creating a replicable standard that could be implemented in schools targeted by the podcast project. Specifically, contributors were asked to prepare a script—varying in detail according to specific needs—paying particular attention not only to the narrative itself but also to the methodologies employed in collecting both direct and indirect testimonies.

Once the basic script was finalized, recordings were carried out over one or more sessions for each episode. As before, the work was coordinated by the entire team but ultimately finalized by the individuals directly involved, who actively participated not only in recording but also in post-production.

Simultaneously, the in-person training program for teachers and students (comprising five sessions each) outlined in the project was initiated. This allowed for an assessment of the research-action objectives, namely the creation of open and non-directed spaces for dialogue on themes of diversity and inclusion through the use of educational tools (podcasts) oriented towards storytelling and self-narration. This evaluation was conducted based on an unconventional dissemination model for the podcasts, which was piloted during the training sessions.

During the sessions, after presenting the project and providing a brief theoretical introduction by the

coordinators, a space for dialogue was opened instead of delivering a unidirectional lecture. This approach started with the playback of excerpts from individual episodes, with the full content made available on the project website. This method fostered active listening, which went beyond passive reception, and served as a springboard for dialogue on the project's key themes based on the content heard. In some cases, the episodes were presented directly by their creators, offering students and teachers an additional layer of context surrounding the proposed concepts and generating new avenues for reflection.

The decision to present podcast excerpts directly in the classroom allowed for an immediate evaluation of their effectiveness. Through dialogue and interaction with the project's target audience, it was possible to conduct direct—albeit informal—observations of the podcasts' impact on the self-representation of minorities and the development of critical thinking regarding experiences of marginalization among underrepresented groups. Students, in particular, demonstrated an active engagement with these prompts, offering reflections and sharing their perspectives.

In the final phase of the project, which is still ongoing, an experimental co-design process for the podcasts was initiated with the participating student groups. This phase allows students to directly explore the possibilities of self-narration through podcasting and collaboratively assess the effectiveness of the proposed approach, not only in terms of its reception but also regarding its potential for replication.

8. Conclusions

The objective of the podcast series “Chiamami così” is therefore to leverage the effectiveness of the podcast medium to develop a context for the education of individual and collective memory storytelling, as well as experiences of marginalization, giving voice to the protagonists and attempting to build alternatives to dominant narratives, in order to promote literacy – understood here as the development of critical thinking around specific issues – both in those who produce these narratives and in those who consume them. This objective will also be pursued through the digital archive of materials used as inspiration for the episodes and a collection of biographies starting from the Auschwitz archives, titled “Le radici dell’odio” (“The Roots of Hate”), which will be made available on the website along with the podcast series. All of this will be carried out in synergy with the work done during the training sessions for teachers and students.

Thus, the choice of the podcast as the medium for delivering the project's content is not only driven by technological reasons but is primarily rooted in the attempt to create a space for pedagogical-cultural literacy, oriented towards the lexicon of new media and the broad language in which to realize—through the synergy among the various stakeholders involved: project members, interviewees, teachers, and students from the schools involved—tools for the construction of plural communities where diversity is conceived as variety rather than opposition.

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¹ Starting, at least, from 2014, the year of the launch of the Apple Podcast platform and the release of the podcast Serial, which marked the beginning of what some have called the “Golden Age” of podcasting, or, according to others, the “Second Age” (Bonini Baldini, 2015).

² Limiting ourselves to the Italian scenario, to confirm their ever-increasing popularity just compare the data from the first Ipsos Digital Audio Survey (*Ipsos Digital Audio. Il punto zero sui podcast Ipsos*, 2019), in which 26% of the Italian population between 6 and 60 years old declared themselves podcast listeners, and those of the last one (*Sbloccare il potenziale del podcast*, 2024), in which the figure rose to 39% (same figure, in truth, as in 2023, which could be a first sign of reaching the plateau in the growth of a phenomenon that has in any case reached a now relevant size).

³ For example, Audacity, one of the world’s most popular audio capture and editing software and entirely open source (<<https://www.audacityteam.org/>>, 11/2024).

⁴ Of which only the second one is still in production.

⁵ “‘Narrazioni di genere e altre identità. Costruire comunità inclusive’ is a project of the University of Florence aimed at developing an action-research initiative in the field of diversity and inclusion, centered on narrative and self-narrative (public or private) through oral testimonies, unpublished and published writings, and various other forms of storytelling. ‘Diversity’ here signifies non-oppositional variety, fostering closeness rather than distance, and encompassing different viewpoints, ideas, stories, and affiliations. This approach creates a shared space for dialogue, encounters, and critical debate. By collecting the diverse voices of ‘diversities,’ the project seeks to develop tangible training and educational tools, where collective storytelling lays the pedagogical and educational foundations for reimagining collective memories and plural societies” (<www.narrazionidigenere.eu>, 11/2024). The research team for “Narrazioni di genere e altre identità” is coordinated by Luca Bravi, Francesca Dello Preite, and Vera Gheno.

Promoting Knowledge: Higher Education and Rural Ethiopia through a Podcast Journey

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Abstract

This study has two goals. The first is to raise higher education students' awareness of accounting-financial practices aligned with Sustainable Development Goals. The second is to promote economic growth by training farmers in emerging countries—in this case in rural Ethiopia.

The study focuses on the use of Information and Communication Technologies (ICTs), specifically to record several podcasts on optimal agricultural practices, budgeting, sales strategies, and nutrition. Simultaneously, professors developed a case study on a project finance for an NGO working in rural Ethiopia. Subsequently, through seminars, students in four Spanish universities worked on solving this case after reading relevant research articles and listening to the podcasts. The research also involved a survey to measure students' commitment to economic development as well as critical reflection and improvement of systemic learning competences.

In a second phase of the project, conducted in rural Ethiopia, farmers listened to the podcasts. This phase aimed to assess the effectiveness of podcasts in transmitting information in rural areas. Such effectiveness is crucial to the project's sustainability, as it reduces the need for external trips in potential crisis situations

Keywords *Higher Education for Development; Information and Communication Technologies; Europe; NGOs; Rural Ethiopia*

1. Introduction

This study is framed within the directives of Agenda 2030, with two main goals. First, it seeks to sensitize and train Spanish university students in accounting-financial information along the lines of the Sustainable Development Goals (SDGs). Second, it seeks to drive economic growth by educating farmers in emerging countries to eradicate poverty. More specifically, we researched the training and sensitization of university students to financial-accounting education for development through information and communication technologies (ICTs) and subsequent dissemination of information among farmers in Ethiopia.

The study has several research goals, including:

- Using seminars to make university students knowledgeable about the real interactive case of a project finance for an NGO that works for rural Ethiopia,
- Using the right ICT tools for the area to which they are applied,
- And finally training the rural population in Ethiopia in financial-accounting education so they can better manage their microbusinesses.

The fieldwork was performed with an international cooperation project in several phases: selection and preparation of the material; preparation and recording of the podcasts; delivery of the seminars at the university; explanation, distribution, and application of the knowledge through seminars and podcasts in Ethiopia; and finally measurement of the results obtained through surveys of students and farmers.

The greatest difficulty in disseminating the podcasts was the language. Some (albeit, a small number) of the students had difficulty with the English (corrected based on the Spanish script), and quite a few farmers only spoke Oromo and not Amharic (the podcasts were only translated into English and Amharic). The Amharic was corrected thanks to the work of Ethiopian volunteers. Finally, although there is currently considerable instability in the region, the political instability in Ethiopia did not prevent us from moving among the villages to disseminate the podcasts. The instability did, however, delay the arrival in Spain of the person in charge of the NGO with which we collaborated and reduced the number of lectures delivered at the University.

Bearing the foregoing in mind, we define the research questions:

RQ1 Did the seminars conducted increase the university students' awareness along the lines of the accounting-financial information aligned with the 2030 SDGs?

RQ2 Was knowledge transfer from the University to an emerging country achieved thanks to podcasts disseminated in rural Ethiopia?

The article is divided into a bibliographic analysis of the links between university education, sustainable development, and financial education (so necessary to promote inclusion of the most vulnerable, who cannot currently go without technology in the context of sub-Saharan Africa). The methodology section explains the steps followed in the study, including a first analysis of the students' sensitization and a second analysis of the farmers in Ethiopia, performed with data taken by the students who decided to do internships in the NGO. Finally, we analyzed and discussed the results obtained to reach very interesting conclusions and contributions for managers of European universities and NGOs, and about the possibilities for innovation that can be achieved with the support of ICTs.

2. State of the art

2.1. Higher Education for Sustainable Development

Education must be a transformative process to foster citizens' participation in the fight to achieve a more solidary, just, and equitable society. The university must contribute value through instructors and students who are mindful of achieving the SDGs. Higher education institutions (HEIs) must play a central role as drivers of change (Sierra and Rodríguez-Conde, 2021; Sonetti et al., 2019). To include education for sustainable development (ESD) in their curricular activities, HEIs must face and overcome significant challenges involving adaptation of their study programs to developing multidisciplinary fields (Lengyel et al., 2019). Active learning methodologies, such as seminars and case studies, can be effective strategies for increasing students' commitment and motivation (López-Sánchez et al., 2020; Rivero-Menéndez et al., 2018).

These goals are relevant to degree programs in Economics, Business, and Business Administration, as future managers and leaders must learn the connections among key economic sectors, social needs, and the SDGs so they can align their financial results with social and environmental goals (Coleman and Gould, 2019; Delgado et al., 2019; Marathe et al., 2020). Generalized poverty in rural Africa suggests that agriculture is a key sector for development and achievement of the SDGs defined in Agenda 2030. Since nearly all African countries depend directly or indirectly on agriculture, this sector is key to development. Most African countries have not managed to fulfill the requirements for a successful agricultural revolution.

Education for Development (EfD) has changed in recent decades. How it is defined depends on the meaning given to the terms development and education, and this meaning depends fundamentally on the context and environment in which we find ourselves. The term dates back to the world of cooperation (late 1960s to early 70s) and originated in the solidarity work performed by NGOs in what was then called the "Third World." At that time, EfD seemed to be an indefinite term, its only goal informing, raising funds, and training professionals to work in solidary actions performed in countries of the Global South (Argibay, Celorio and Celorio, 2014).

One of the first milestones of EfD came with the 1974 UNESCO report *Recommendation on Education for International Understanding, Cooperation and Peace and Education related to Human Rights and Fundamental Freedoms*. This report recognized the importance of EfD in solving the problems humanity faced. The UNESCO report sought to educate for international understanding and cooperation, conceiving education as the engine to achieve the goals established in the United Nations, the UNESCO Constitution, the Universal Declaration of Human Rights, and the Geneva Conventions. The report noted the need to include an international dimension and a global perspective in instruction, understanding of the need for solidarity and international cooperation, and the willingness of all States to participate in solving the problems of one's own community, one's

country, and the world (UNESCO, 1974). EfD takes on international relevance when we think of education as a way to solve the fundamental problems that condition humanity's survival and well-being (e.g., inequality, injustice) and the cooperation measures that can facilitate their solution (UNESCO, 1974).

As the case study methodology is applicable to different areas of knowledge (Herreid, 2011), it can be applied in the field of cooperation for development. This method enables students to empathize with situations in specific contexts, and, in turn, facilitate the development of academic skills in real contexts (Pen et al., 2016). In addition to the developing cognitive skills, this methodology develops awareness and fundamentally involves teamwork. Numerous empirical results demonstrate higher education students' positive perception of the case study as a teaching method (Pérez et al., 2022; Yadav et al., 2007; Noorminshah et al., 2012; Marion et al., 2016).

2.2. Financial Education for the Eradication of Poverty

In parallel, the research published has shown us that financial education is key to development of microbusinesses in emerging countries and to fostering financial inclusion, in line with the 2019 Nobel Prizes (Banerjee and Duflo, 2011) and other authors (Leatherman et al., 2011; Armendariz and Morduch, 2010). Financial and accounting education is closely linked to successful management of microbusinesses. Traditional financial-accounting has not, however, had the expected success in improving the behavior of microbusinesses (Bali and Varghese, 2013). ICTs are thus an appropriate vehicle for developing a model for more efficient financial-accounting training. Other characteristics, such as the time at which training is delivered, its content, and its various pedagogical forms (dissemination of podcasts) are key elements in the success of financial training.

Numerous economic studies underscore the pivotal role of financial inclusion in driving economic development, yet its efficacy is hindered by persistent challenges, notably a lack of proper financial education. Scholars stress the need for comprehensive programs that incorporate training in business skills to enhance financial literacy and foster positive financial behaviors among beneficiaries. Goyal and Kumar's (2021) systematic reviews from 2000 to 2019 reveal the significance of financial literacy, planning, and education, as well as the growing importance of financial innovation and technology (FinTech) in facilitating inclusion and ameliorating income inequalities (Ozili, 2021).

In 2020, attention shifted toward understanding the multifaceted impacts of financial inclusion, particularly in the realms of poverty alleviation, empowerment of the rural population, and overall economic growth. Advocacy surged for tailored banking products and strategic deployment of digital technologies to bolster financial access and literacy (Koomson et al., 2020; Churchill and Marisetty, 2020; Adegbite and Machethe, 2020; Demirguc-Kunt et al., 2020; Zimmerman et al., 2020). Despite considerable progress, various studies stress that disparities persist, especially in terms of access to managerial and financial resources (Si et al., 2021; Bourgault and Donnell, 2020; Martínez and Jayawarna, 2020; Sangem, 2020).

2.3. Information Technologies

The swift integration of ICTs into low-income countries and communities has opened avenues for substantial developmental opportunities. When combined with the right human and financial resources, ICT adoption is a catalyst for economic advancement. Firstly, ICT implementation has shown promise in stimulating economic growth, opening paths to saving and income generation among individuals and microenterprises in low-income communities (Abraham, 2007; Donner and Escobari, 2010; Levy et al., 2010). Although comprehensive cost-benefit analyses are scarce, evidence suggests a favorable return on investment at both individual and community level, particularly in microenterprise settings (Jensen, 2007). Secondly, ICT adoption, complemented by accounting and financial software solutions, contributes to sustainable development by facilitating creation of additional assets and innovative financial strategies, which can yield long-term benefits (Heeks and Arun, 2010; Molla and Al-Jaghoub, 2007).

Integrating ICTs also fosters an educational virtuous cycle, enhancing the capabilities and motivation of individuals and employees in villages and small businesses in developing countries (Urquía-Grande et al., 2018; Kivunike et al., 2009; Olatokun, 2009). Rapid technological advancements have also opened avenues for generating and leveraging strategic information, avenues crucial to enabling small businesses to navigate the uncertainties of competitive markets (El Louadi, 1998). ICT adoption is especially imperative in economies dominated by microenterprises, as ICTs are essential for fostering economic development and growth. Analyzing the impact of ICTs on smaller enterprises thus becomes pivotal. Investing in these technologies could give small businesses a competitive edge, positioning them for better outcomes (Pérez-Estébanez, Urquía-Grande and Muñoz-Colomina, 2010; Ismail and King, 2005) due to their inherent flexibility and responsiveness.

In the African context, numerous studies stress the importance of creating an enabling environment that relies on ICTs to achieve long-term social and economic development (Pérez-Estébanez, Urquía-Grande and Cañizares, 2022; Pérez-Estébanez, Urquía-Grande and Rautiainen, 2018; Dasuki, Abbott and Azrikatoa, 2014; Ojo et al., 2013; Hilty and Ruddy, 2010; Mbaku, 2000). Causal relationships have been demonstrated between ICT adoption and technological efficiency in both developed and developing countries (Brynjolfsson and Hitt, 1998). Various implementation scenarios have been proposed to explain the potential impact of ICTs on development (Orliwoski and Iacono, 2001; Sein, 2004). Globally, ICTs are acknowledged for their transformative potential in driving development, industrialization, and economic growth (Tongia, Subrahmanian and Arunachalam, 2004). Much research has focused on microenterprises as the unit of analysis in the attempt to understand ICTs' contribution to development through their impact on these enterprises (Heeks and Molla, 2009). Indeed, studies like that by Esselaar, Stork, and Ndiwalana (2006) show that ICT adoption correlates with higher labor productivity and sales turnover in African SMEs, identifying these technologies as key variables for achieving developmental goals.

2.4 Mobile technologies

Mobile technologies, especially podcasts, are essential in delivering educational resources to rural communities, especially in the agricultural sector. Such delivery stresses the cost-effectiveness and widespread accessibility of mobile phones as drivers in adopting podcasts as an educational tool. While mobile-based applications and services have proliferated in agriculture since 2007 (providing valuable information on market prices, weather, and agricultural techniques), challenges persist, and the full impact of these initiatives remains unclear. Despite past perceptions associating mobile use with wealth, rigorous impact evaluations are needed to gauge their effectiveness in enhancing farmers' knowledge, adoption of practices, and overall welfare. Figure 1 shows how Africa had achieved nearly 100% subscriptions among the population by 2023, although the process of incorporating smartphones is slower than in the developed world, with the MENA and sub-Saharan Africa regions showing the lowest rates of mobile Internet. In 2022, 55% of the world's population could access mobile Internet. Penetration was highest in Europe, at 85%, while North America had only 83% and sub-Saharan Africa only 23% access. This region also has a high usage gap of 60%. (The usage gap measures the proportion of the population covered by mobile data networks but lacking access due to barriers such as affordability or lack of digital skills.)

Number of mobile (cellular) subscriptions per 100 inhabitants worldwide from 2005 to 2023, by region

Mobile subscriptions per 100 inhabitants 2005-2023, by region

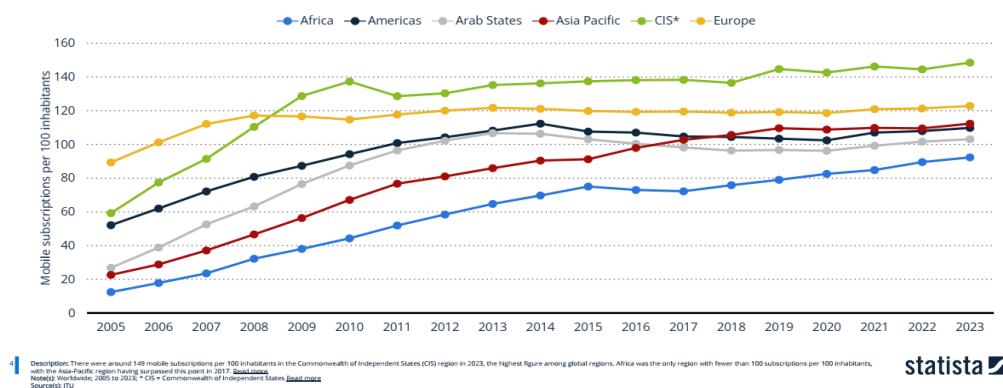


Figure 1: Number of mobile subscriptions by region from 2005 to 2023

Figure 2 adds the type of technology developed in this region. We see that 3G technology (the minimum needed to access the Internet) did not surpass 2G technology until 2020.

Market share of mobile telecommunication technology in sub-Saharan Africa from 2016 to 2030, by generation

Market share of mobile technology in sub-Saharan Africa 2016-2030, by generation

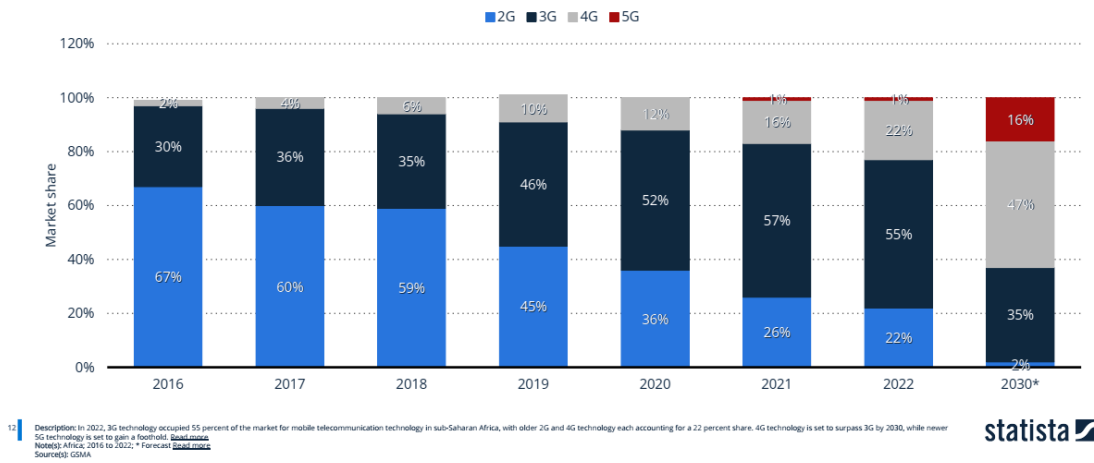


Figure 2: Mobile telecommunication technology market share

Given that sub-Saharan Africa has less penetration, worse technology, and lower usability of smartphones, it is difficult to reach the regions with applications that require speed, technology, and smart mobile devices.

In contrast to many other regions of the world, where smartphones dominate, basic telephones constitute an important part of the mobile market in Africa. Of the 40-50 million cell phones sent to Africa every trimester, over half are basic phones. In these regions, however, more people have access to mobile devices than to water or electricity. To take advantage of this opportunity in Africa, people are developing new applications for old phones, which continue to have important uses. Multiple applications are being developed that can be used through SMS to bring these apps to a large part of the population. Esoko, founded in Ghana in 2005, initially aimed to provide market price information to farmers via SMS. M-Pesa, launched in Kenya in 2007, facilitates mobile payments and transfers for those without access to traditional banking. M-Farm offers transparency for Kenyan farmers, providing market information and connecting them with buyers. Africa Podfest promotes African podcasters and aims to elevate diverse African stories in the media landscape.

In the African context, where massive development of mobile use is occurring through SMS voice messaging and an increasing number of downloadable app, the podcast is a very valuable tool for transmitting knowledge of any kind, especially in rural areas of different African countries. It is a form of sound recording that focuses on sharing ideas and providing knowledge. In our case, the goal is clearly to help people whose lack of economic resources makes it very hard to access any type of education. The content and goal of these educational podcasts is to help people in rural areas that are hard to access by providing them with transformation and learning. We therefore prepared serious

content narrated by local people. The open dynamic and simple questions for the audience make the podcasts both educational content and a pleasant, enjoyable talk that is easy to understand.

The technological part of the project is a system that can reach a large segment of the population with only a small amount of data. Content can thus be stored in the mobile phone (it takes very little space) so that the receiver can listen to it as often as necessary.

2.5. Context

Ethiopia is one of the most densely populated African countries. Agriculture is a substantial part of the gross domestic product (GDP), and approximately four fifths of the population lives in rural areas.

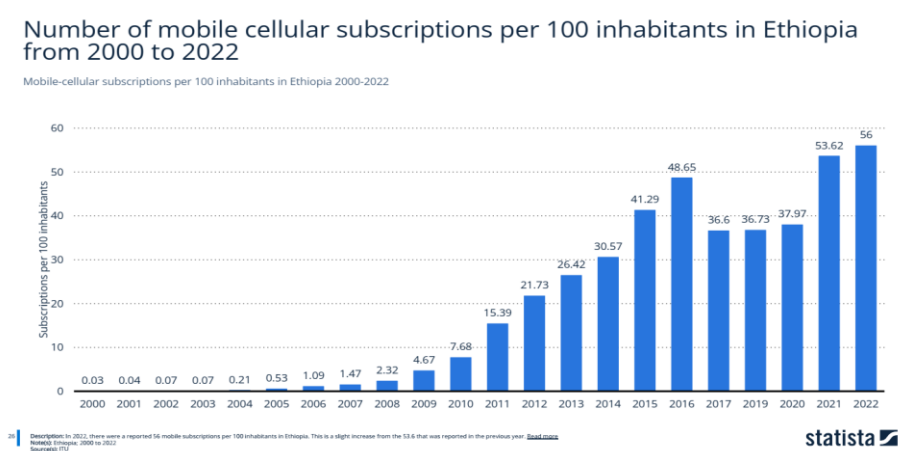


Figure 3: Number of mobile subscriptions in Ethiopia from 2000 to 2022

Network coverage and speed are also lower than average in Africa, with speed slower than 5 megas in most of the network.

Map of speeds 3G / 4G / 5G of MTN Mobile in Ethiopia

Red móvil MTN Mobile

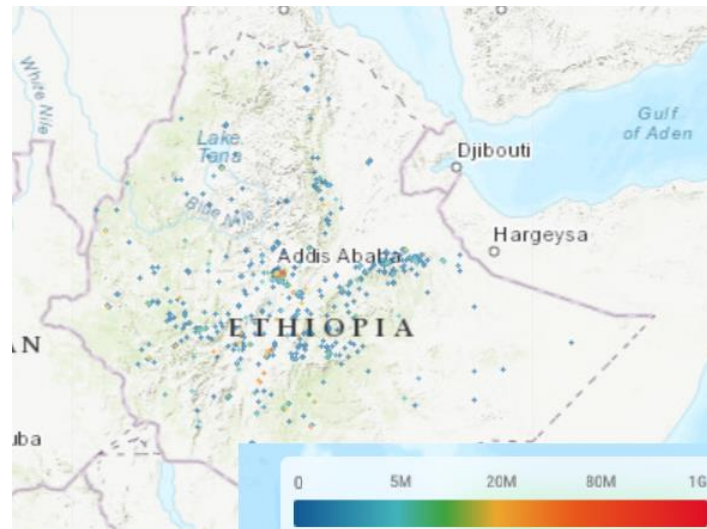


Figure 4: Map of speeds in Ethiopia

We performed the fieldwork in six villages around the city of Muketuri, 80 km north of Addis Ababa. These villages are located in the North Shewa zone, one of the poorest zones and among those with the greatest food insecurity in Ethiopia. Although only 80 km from the capital, the area is rural. Most of the population lives in mud houses, and access to basic services such as water, electricity, and communication is difficult. North Shewa is currently one of the least politically secure regions of Africa. Its citizens' way of life is based on agriculture, although only during the rainy season and with only one harvest per year. A small minority also raises cattle, sheep, and goats.

In our study, researchers collaborated with an NGO based in the Muketuri area of Ethiopia (Urquía-Grande et al., 2028; Urquía-Grande and Rubio-Alcocer, 2015). For over 20 years, this NGO has worked developing nutrition, agriculture, and educational programs. It manages a community sanitation project that includes preventive medical services, community training, environmental health, continuous training in agriculture and economics, nutritional rehabilitation, an animal farm, children's day care centers, and promotion of agricultural and new water resources. Recently, the NGO launched a new program that focused mainly on improvements in agriculture with donations for new wells (Urquía-Grande and del Campo, 2017). The NGO is also training farmers in six rural Ethiopian villages (Urquía-Grande et al., 2018). The villages are considered to be among the poorest in Ethiopia and at high risk of malnutrition. The main ethnic groups living in the area are Oromo and Amhara. Teff, a local grain and the only plant cultivated in the area, has low nutritional value. The NGO has managed to build 89 wells in the following six villages included in the study: Gimbichu, IguKura, Rob Gebeya, Jebene, Arkiso and Gore Ketama. These villages are the ones that have the deeper and more efficient drilled wells. The NGO provided much of the information about the empirical work and infrastructure grants. Typically, the hand-dug wells are 12 meters deep and cost on average 1,050 USD per unit. These wells enable farmers and their families to have access to clean water and to create small vegetable gardens. This ability to cultivate a variety of vegetables (potato, garlic, onion,

spinach, carrots, and cabbage) is very valuable both nutritionally and economically. The drilled wells are much more expensive and cannot be built in all the fields.

3. Method, Instrument, and Sample

The methodology followed in this study has two clear parts. The first stage began with development of seminars with clear content on social sustainability. In these, we created the tool that would be the foundation of the experiment—the podcasts. The students solved the case presented in the seminars, with the help of some podcasts designed and developed for this purpose. In the second phase, the podcasts on the agricultural and financial training that the NGO provided to the farmers in rural Ethiopia were improved using the feedback from the more sensitized university students and then disseminated in the villages.

Preparing the podcasts was a very complex task. They were designed using the following system. First, we chose the main tasks for improvement in the field of agriculture, family nutrition, and sale of surplus, with the help of specialized technicians and professionals. After we chose these activities, the scripts were prepared for the six podcasts on key agricultural activities, optimal times for these farming activities, preparation of budgets, sales strategies, nutrition, and food conservation (Appendix 1). Second, through a process of searching for students with links to Ethiopia and the topic, we chose people of Ethiopian origin to record the podcasts to ensure more fluid transmission. Two Ethiopian-origin university students studying at the Faculty of Information Sciences of University recorded the podcasts in English and Amharic (official language of Ethiopia, spoken by approximately 30 million inhabitants), with the help of the technical staff of that Faculty (see Figure 5). Whereas use of computers in emerging countries is hindered by cost and difficulties with electrical supply, the mobile phone is used widely and has become part of people's daily life (Pérez Estébanez et al., 2022; Urquía et al., 2018). These podcasts, devoted primarily to the best times to perform farming tasks, preparation of budgets, sales strategies, nutrition, and food conservation, were then disseminated to the university students and subsequently to six villages in Ethiopia. Two highly motivated students in the first phase did a 65-day internship in the area, and various local volunteers also helped to translate the podcasts into Oromo, the main local language, to cover communication with all farmers. The warm reception of the podcasts, first by the students and then by the farmers in most of the villages, shows that we chose well. Third, we established time limits of no more than three minutes per podcast to keep listeners' interest and used the question-answer format in each recording to make them dynamic and educational. The podcasts have been registered in Spain's Intellectual Property Office.



Figure 5: Ethiopian students recording the podcasts in the Faculty of Information Sciences

Phase 1 - Seminars

The professors from the project prepared a case study on management accounting and finance. The case consisted of a project finance that analyzed donation of wells for microfarmers in Ethiopia and performed a profitability analysis. The case, entitled “Among vegetables,” was based on the experience and data collected from professors and volunteers from several NGOs that work in Africa and that had provided prior data as the starting point for the case. The professors on the team delivered seminars in several degree and double degree programs in each of the Faculties of Economics at different Spanish universities (see Figure 6). Students in these seminars had previously to read two research articles on the topic. The first article analyzed the differences in perception of the improvement that farmers in a rural region of Ethiopia perceived after financial training sessions (Urquía-Grande et al., 2021). The second analyzed the variables that influenced the NGO’s beneficiaries’ perceived need for training courses on agriculture, nutrition, and accounting (Urquía-Grande et al., 2018).

To contextualize the case, the students were expected to listen to the podcasts on the key agricultural activities, best practices, preparation of budgets, and sales techniques. We also asked them to give feedback on the podcasts to improve them before disseminating them among the farmers.

Finally, the students completed a questionnaire on the case study, which assessed their commitment to cooperation and development, critical reflection and systemic learning through solving case studies, and perception of their participative learning and creative thinking. The survey also incorporated sociodemographic characteristics that could be moderators of the interrelations among the variables. The quantitative survey, accessible to all students through the university’s platform, was

divided meticulously into three segments. The first gathered information on socio-demographic aspects, followed by a series of closed Likert scale questions about awareness, learning, and commitment in the seminars on cooperation for development. Each question informed students that the answers were ordered progressively such that: 1= Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly agree. Binary queries, labeled as dummies, also provided succinct insights with affirmative or negative responses. The last five questions were about the case run in the seminars on a real NGO tackling its need for financial or infrastructure resources to help farmer beneficiaries in rural Ethiopia.



Figure 6: Students who attended the seminar worked on solving the practical case “Among vegetables.”

Sample in Phase 1:

The sample consisted of 422 students, in accounting classes, who attended the seminars, solved the case, and completed the survey. The students were from seven undergraduate single or double degree programs in Accounting and Finance. More specifically, they were pursuing a Bachelor's in Economics and Business Administration, a double degree in Business Administration and Law, a Bachelor's in Business, a double degree in Commerce and Tourism, or a double degree in Business Administration and Service Management and Engineering. Although these degree programs were delivered at six different Spanish universities, data were only obtained from three universities (one public and two private) because the lecturers at the other universities did not have time for the students to complete the survey.

Our descriptive analysis of the sample shows a slight majority of male students (male 51% and female 49%) and an average age of 20 years. Most participants were from Business, followed by double degrees in Business with Law or Business with Computer Science.

Phase 2 – Dissemination of the podcasts

The second phase of the project was performed in rural Ethiopia. The goal was to disseminate the podcasts to the Ethiopian farmers and gather information on the farmers' listening to and degree of understanding of the podcasts. Two students from the University traveled to the area to disseminate the podcasts with the help of the NGO and to gather information on the dynamics of listening and the utility of the podcast as a means of transmitting information in rural areas to people with very minimal academic education (68% of the 320 had no formal education and the rest had only primary education). One of the priority goals of the project was to analyze whether significant differences existed in assimilation of the information received and putting it into practice, in line with Kandhway et al. (2014) and Woo and Hsinchun (2016).

First, the students met with the volunteers to explain the project to them and give them the podcasts (Figure 9). They estimated the number of people needed to disseminate the podcasts in the six villages. In some villages, they found people who could help disseminate the podcasts in the village and in other nearby villages. This method enabled the villages to be self-sufficient in listening to the podcasts, Reducing the trips the volunteers had to make was beneficial, as travel could be difficult in conflict situations, which were common in the area.



Figure 9: Students doing internships in the NGO in Ethiopia, teaching farmers how to listen to the podcasts

Second, the two students traveled to the six villages to administer the survey on listening to the podcasts and their benefits. Farmers who listened to the podcasts and completed the surveys were given seeds as a thank-you for their participation in the study. After having worked in several agriculture and commercial projects together with the NGO for several years (mainly 2011-2023), the researchers designed and performed a socio-demographic analysis with questions about agricultural and economic circumstances. The questionnaires were administered randomly among the farmers' households in the six villages mentioned. The questionnaire was designed to gather initial information about the NGO program beneficiaries. It was tested and validated by a panel of academic and

practitioner experts. The goal of the survey was to help disseminate the podcasts as a means of financial and accounting training.

Sample in Phase 2

The study involved 320 farmers from six villages, typically with more than 5 family members per household. Most respondents were between 20 and 30 years old with primary school education. The majority were self-employed in agriculture, though some also worked in manufacturing or services. Many farmers received training in agriculture and nutrition from the NGO, which they found valuable. Economic training was also seen as useful. Monthly income varies, with a typical farming household earning \$50, though some earned less than \$6 per month.

Data analysis:

The survey data were analyzed and multivariate analysis performed by applying backward stepwise regression with SPSS 27 software.

4. Findings

4.1. Findings in higher education: Student awareness and motivation through financial education

To answer RQ1, we can affirm that the study obtained positive results, thanks to the motivation of all groups participating in it—students, professors, and the student volunteers who traveled to the area—and the collaboration and dedication of members of the NGO, the Ethiopian volunteers, and the farmers.

The number of activities performed both in the University environment and in Ethiopia, enabled us to evaluate the execution of the project very positively.

As to the research question whether the seminars increased university students' awareness in line with the accounting-financial information aligned with the SDGS before the seminar, a majority (37.4%) achieved a medium level of sensitization (see Figure 10).

You are very aware of Cooperation for Development because you have previously performed social projects. For this question, the responses were ...Neutral, 4=Agree, 5=Agree completely
422 responses

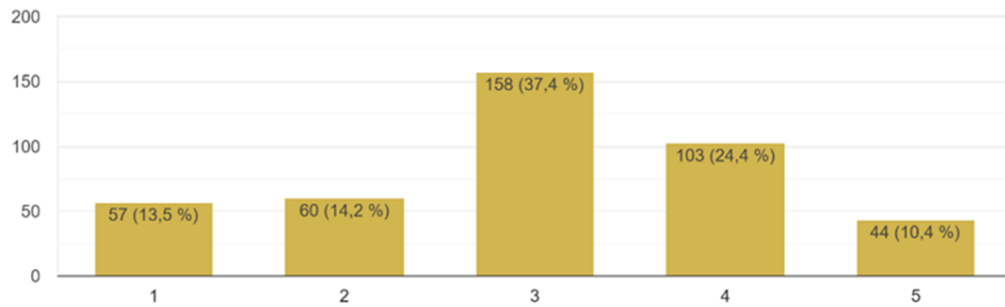


Figure 10: Average of the 422 student responses before taking the seminars on Sustainability

In the survey done after the seminar (figure 11), the responses show clearly that the students who took the seminar expressed greater involvement in topics of cooperation for development, as more than 73.5% of the responses ranged from “more interested than average” to “very interested.” This figure increased to 93% with the inclusion of students who answered “very interested.”

The lecture/seminar on Cooperation for Development interested me and led me to become more involved in helping from here In this question, 2=Useless, 3=Neutral, 4=Useful, 5=Extremely useful.

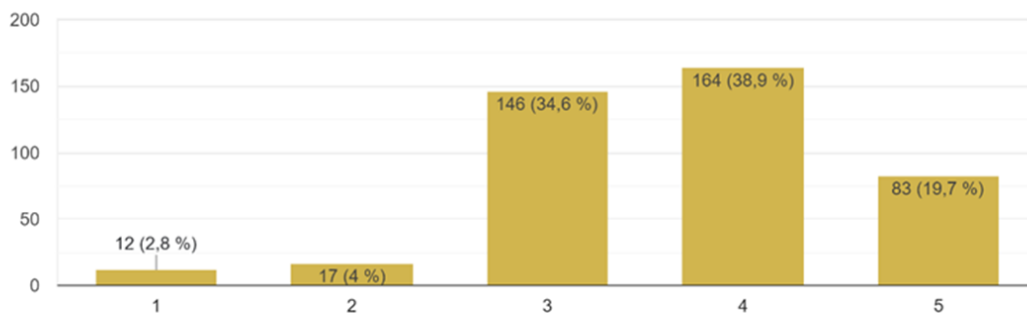


Figure 11: Average of the 422 student responses after taking the seminars on Sustainability

After the seminar, most of the students (43.6%) indicated that the NGO's case study was very useful, as were the wells for the beneficiaries (Figure 12).

From the perspective of utility for development, how would you evaluate the donations of water wells by the NGO MCSPA? In this question, 2=Useless, 3=Neutral, 4=Useful, 5=Extremely useful. 422 responses

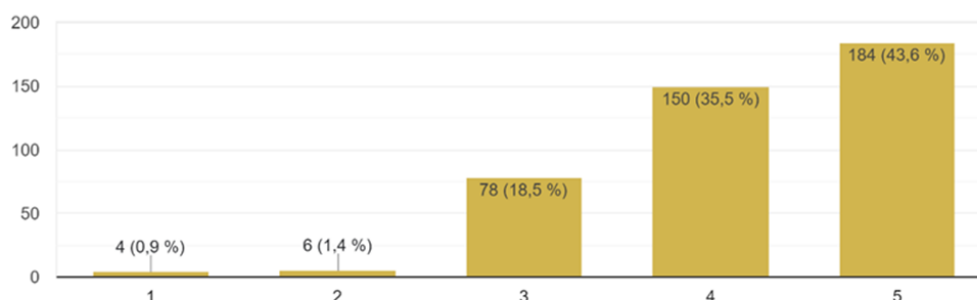


Figure 12: Average of the 422 student responses after taking the seminars on Sustainability and when evaluating the utility of the project finance case study posed in the seminar

Further, students showed excellent involvement, from the 2% of the students who took the seminars to 8.5% who asked to do a Degree Thesis on the topic—an increase of 325%. The curricular internships increased, from 5.7% to 17.1% of students who attended the seminars wanting to do internships in the NGO in Ethiopia. We also managed the substantial achievement of gaining permission for two students to perform the knowledge transfer from the University to the beneficiaries of the NGO through the podcasts. They traveled to Ethiopia during the months of July and August, 2022.

These students subsequently disseminated their experience in various seminars in the participating universities (after having signed a Frame Agreement for Educational Cooperation with the NGO). They traveled to Ethiopia during the months of July and August, 2022.

Another finding was our discovery that 84.6% of the students interviewed thought that they should have more courses that focused on cooperation for development.

The students believed that the seminar was very useful for learning and for deepening their knowledge of cooperation for development. Of 422 student responses, 70% gave the seminar a score of 4/5.

Having made a real case on cooperation for development available to the students was both a challenge and a satisfaction for instructors and students. The students' participation showed a latent awareness that small stimuli can achieve students' involvement in future projects on aid for development. Once the students knew the cases, they contributed proposals to improve the cooperation for development and were able to lead proposals and actions. Over 35% felt that they were able to lead a work group.

4.2. Findings in rural Ethiopia about knowledge transfer through podcasts

We now discuss the findings on RQ2, to analyze whether transfer of knowledge from the University to an emerging country (Ethiopia) has been achieved.

Thanks to dissemination of the podcasts, we achieved transfer of knowledge from the University to the strategic destinations in which the cooperation project was being conducted. The results differed by village, however. The villages that had been collaborating longer with the NGO showed less interest than the villages that had begun collaboration more recently. The latter evaluated the podcasts more positively. We observed that 100% of the farmers attended the training courses on use of the podcasts, all used a mobile pay phone with 2.5 G or 3G, and 31% provided information on the amount they paid for their cell phone card. Fifty percent of the farmers listened actively to the podcasts.

The students who did internships administered the survey to the farmers from six villages. The surveys included a series of questions that enabled us to evaluate their level of comprehension of the information in the podcasts. The scores ranged from 0 to 5 for podcasts 1 (introductory) and 5 (sales), which were the most representative. We assigned a score of 0 to the questions left blank. The average score for the full sample of six Ethiopian villages was 2.5 points for both podcasts, with a mean of 3, while 31% and 34% of the respondents gave podcasts 1 and 5 scores or 0/1, respectively (see Figure 13). These percentages were not distributed uniformly among the different villages.

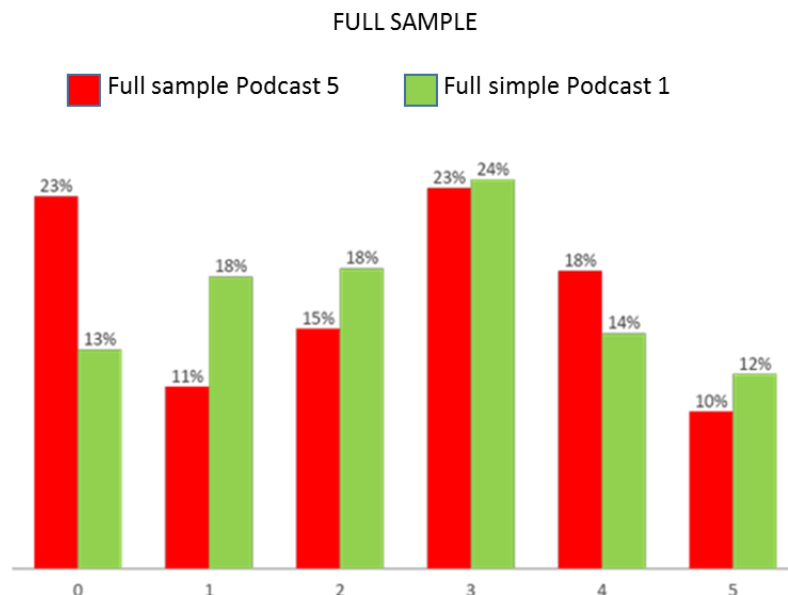


Figure 13: Evaluation of podcasts 1 and 5 with information from all villages

We analyzed the scores by village using the following criteria. We primarily evaluated the degree of interest in the podcasts (considering scores of 0/1 as indicating no or little interest) and dismissed villages with high percentages of these two values. We believe that a score of 0 (no answer) or 1 (very poor) indicates that the farmers were only motivated to participate by being given seeds from the NGO for listening to the podcasts. Due to this greater interest, we prioritize the results of podcast 5 (educational podcasts on sales techniques) over those for podcast 1. High scores are evaluated positively.

We now describe the results for listening to and understanding of the podcasts' content in the villages that had begun collaboration more recently. We end with the villages that had collaborated for the longest time.

In the village of Jebene (See Figure 14), 22% of the population for podcast 1 and 14% for podcast 5 did not participate at all (attended the meeting but either did not answer the questionnaire or gave a low score on the survey, scores of 0 and 1). In both podcasts, over 65% of participants approved, as the sales podcasts improved in high scores, with averages of 3 and 3.16, respectively. Education and knowledge transfer in the podcasts were evaluated positively.

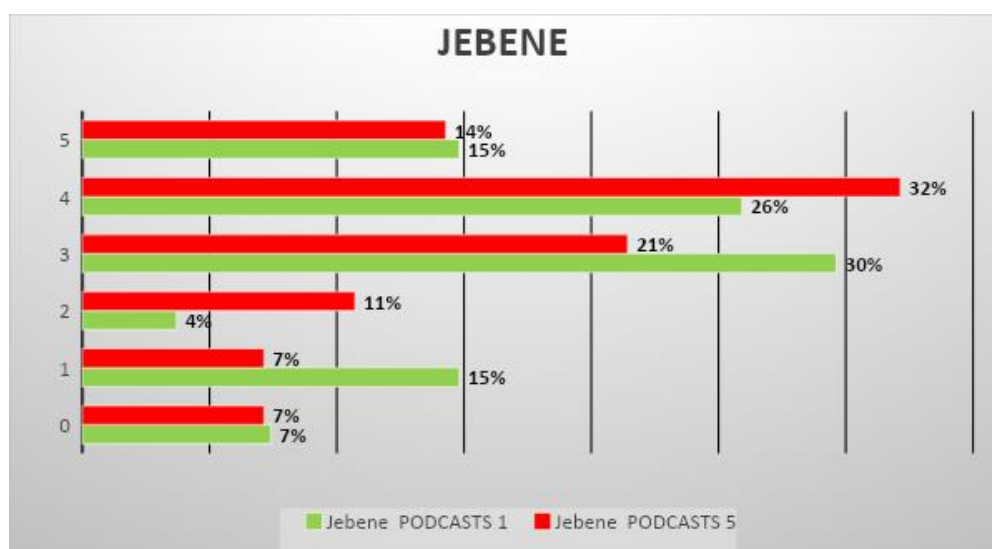


Figure 14: Evaluation of listening and comprehension of podcast content in Jebene

Participants from the village of Arkiso (see Figure 15) gave very few scores of 0 and 1 (6% and 13%), as well as very few very high scores. The averages were 2.9 for podcast 1 (introductory) and 3.1 for podcast 5 on sales. Here too, knowledge transfer was evaluated positively.



Figure 15: Evaluation of listening and comprehension of podcast content in Arkiso

Arkiso is a rural village with few wells built and donated by the NGO and with few families currently trained in agriculture and nutrition. The NGO has only recently begun to work with the village, having built and donated only four wells. Interestingly, farmers who had not registered wanted to attend, in addition to the farmers who registered for the training. This demand can be considered a success. The answers obtained in this workshop show that the majority of the farmers who attended have wells, have created vegetable gardens, and are cultivating the different vegetables the NGO taught them to cultivate. Farmers are very grateful for the NGO's help. When asked about the agricultural activities, they knew the main labor activities involved, affirmed their need for tools, and liked the financial training through podcasts.

In the village of Gore Ketema (Figure 16), the score for listening to the podcasts was on average 1.8 and 2, respectively. The percentage of scores of 0 and 1 was high, 53% and 43% respectively. Gore Ketema thus evaluated listening to the podcasts negatively.

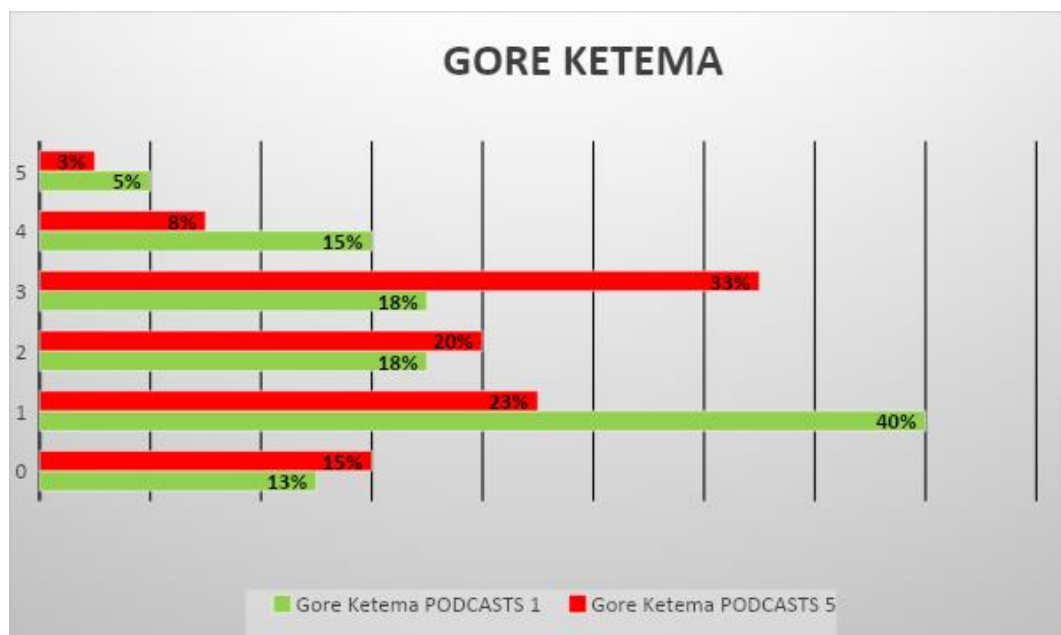


Figure 16: Evaluation of listening and comprehension of podcast content in Gore Ketama

Gore Ketama is a larger village with 3 wells built and donated by the NGO and families currently trained in agriculture and nutrition. It primarily cultivates teff. Most farmers who attended have wells, have created vegetable gardens, and are cultivating the different vegetables the NGO taught them to cultivate.

In the village of Igukura (see Figure 17), the averages for listening to the podcasts were 2.5 and 1.9, respectively. The average is especially low for the podcast on sales, one of the most important. For this podcast, 42% of the scores were 0 and only 22% of respondents gave it high scores. Again, this village evaluated the listening negatively.

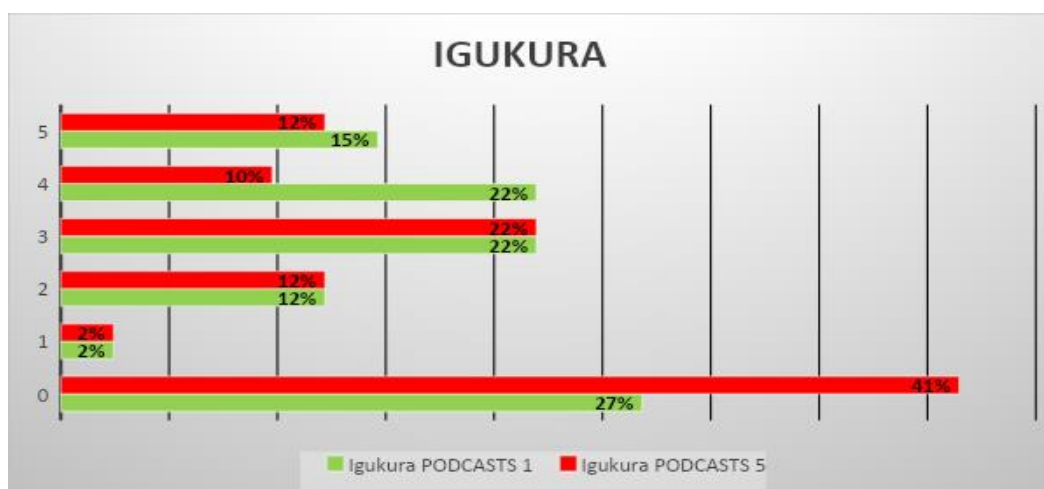


Figure 17: Evaluation of listening and comprehension of podcast content in Igukura

Igukura is a rural village with 11 wells built and donated by the NGO and few families currently trained in agriculture and nutrition. It primarily cultivates teff. The NGO began to work there 7 years ago and has built and donated only four wells.

In the village of Rob Gebeya (see Figure 18), podcast 1 obtained average scores of 1.9 and podcast 5, 1.6. This village has the worst results year after year, with decreasing frequencies: 39% of the population did not answer the test or was unable to understand the information contained in the podcasts. This is not a problem of language, as the podcasts had been translated into Amharic/Oromo. This village evaluated listening to the podcasts negatively.

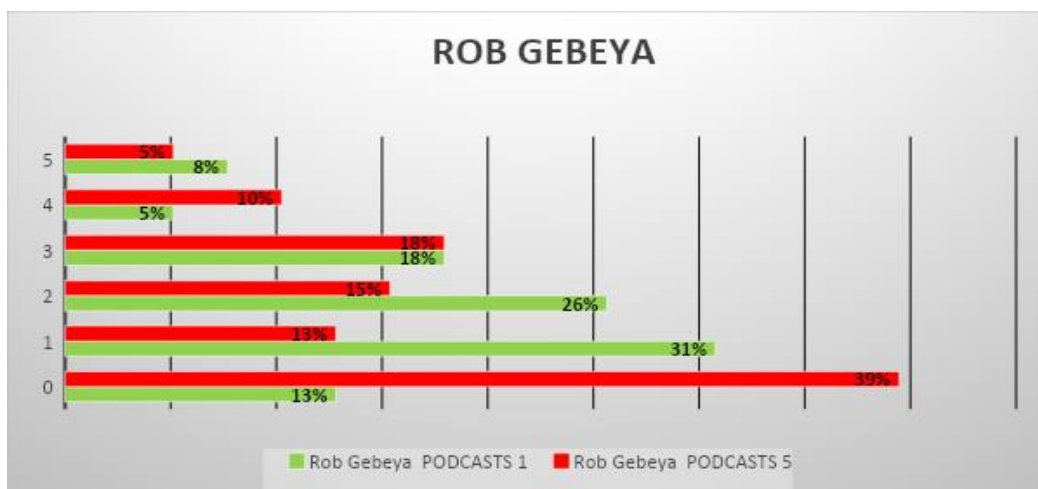


Figure 18: Evaluation of listening and comprehension of podcast content in Rob Gebeya

Rob Gebeya is a rural village that only recently began working with the NGO. It has 14 wells built and donated by the NGO and 63 families have trained in agriculture and nutrition. The village usually rented the regional governmental agriculture office for the training workshop. Participants were mostly women, and they participated actively. All were highly motivated and interested in the NGO project. They commonly thanked the NGO and the teachers and motivated the group to participate. Best practices in agriculture and value-added activities were not explained very well. Three translators were needed. When the workshops ended, the survey was collected, and seeds were distributed. In recent years, this town has demanded a lot from the missionaries. As the latter were unable to give the town more wells, the people have become less motivated and the relationship is now very tense and that could explain the negative results.

In the village of Gimbichu (see figure 19), the average on both podcasts was 3.2. High scores constituted 65% of the responses for podcasts 1 and 5. This village evaluated listening to the podcasts and knowledge transfer very positively.

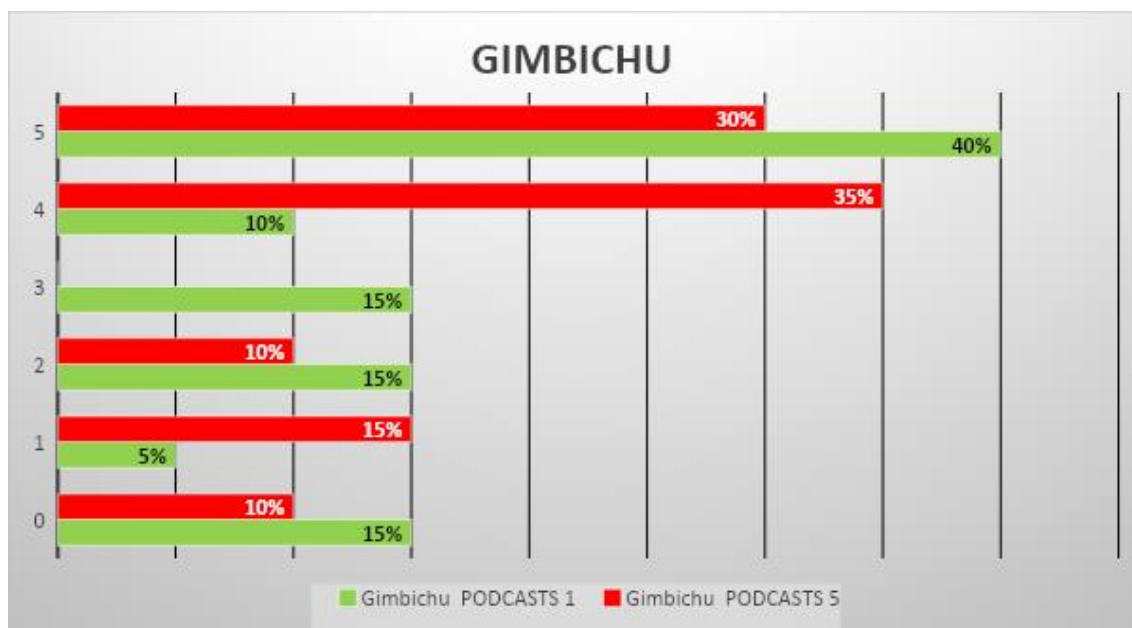


Figure 19: Evaluation of listening and comprehension of podcast content in Gimbichu

Gimbichu is the most rural of the villages where the NGO has built and donated 24 wells, with 90 families trained in agriculture and nutrition. It is the village where the NGO has been working the longest. Further, 10 years ago, a nutrition center was created where mothers rather than salaried workers are in charge. Most of the families who share a well have built a vegetable garden and cultivated several crops after being trained by the NGO, have provided better nourishment for their families, and have even sold their crop surpluses in the market. A group dynamic was established to begin the interactive questioning. All farmers participated actively and expressed interest in improving agriculture practices and nutritional habits. Analytical income statements, as well as concepts of savings accounts, were introduced. The participants expressed their gratitude to the NGO, which had built and donated the wells, while also providing training for the creation of vegetable gardens. The participants have achieved better family nutrition and have just started a nutritional center with a kitchen for children's needs. Most importantly, the villages have two leaders, Derribe and Kidane, a woman and a male farmer who have the full confidence of the NGO. These leaders are managing the nutrition center and leading the farmers. Three translators—NGO workers—are usually present because the workshops are introduced in English and translated into Amharic. These farmers participated actively and wanted to describe their experiences in the cultivation process. The workshops ended with gifts of seeds and survey completion. Finally, some farmers requested wells because they saw the improvements their peers had made and wanted to benefit from these improvements too. The whole seminar drove the researchers to redesign the presentation and adapt the curricular content to local needs.

In general, the populations of the different villages were very similar in education level and gender. The methodology was identical in all six villages. Yet three villages clearly show lack of interest and

understanding levels well below the others (most surveys showing scores of 0/1). It seems clear that people only attended the meeting due to the incentive (receiving seeds).

The villages with the worst scores were those that had had longer contact with the NGO. This result is interesting. We also observed this trend in other studies. Villages with high participation (in which the frequency of 0 is low) primarily obtained scores of 4-5. That is, the farmers understood the content of the podcasts and evaluated them positively.

Thanks to the diffusion of the podcast, we were able to transfer knowledge from the University to strategic destinations in which cooperation projects were being conducted. We also achieved double knowledge transfer that will improve the dissemination and impact among university students to increase their level of awareness and commitment to this type of project. It will also increase awareness and commitment among farmers in emerging countries, through training adapted to the conditions of life in these enclaves. The possibility of improving the education of farmers in developing countries is thus greater due to the incorporation of the ICTs and the University. The various workshops conducted in six villages with different paces and scenarios had good success.

There is clear evidence that the farmers give better information when they are surveyed and follow NGOs' directions on responsible agriculture when planting and when feeding their families.

5. Conclusions

The study achieved three fundamental goals. First, it transferred knowledge to university students, fostering first their curiosity and then their interest in cooperation for development projects. We also managed to involve professors who generally worked outside this topic, getting them to attend the seminars and conferences where members of the NGO with which we worked were present. Second, thanks to dissemination of the podcasts on which the students had collaborated during the process and when doing their curricular internships in the NGO, we managed to transfer knowledge from the university to strategic destinations in which the cooperation project was conducted. We predict that this double knowledge transfer will improve dissemination and impact among university students to increase their level of awareness and commitment to this type of project and among farmers in emerging countries, through training adapted to the conditions of life in these enclaves. The possibility of improving training of the farmers in developing countries is greater thanks to the incorporation of ICTs, as we hope to show with the results of this project.

This study has some limitations. The sample is small, and we only analyzed one NGO. Part of the project was conducted during the pandemic, and the civil war in Ethiopia made it difficult to access some towns.

Future lines of research could focus on better practices to improve efficiency of farming and farmers' agricultural activities through ICTs. Education through podcasts was the best option during a public health or political crisis.

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Statista, Mobile telecommunications services in Africa article ID: did-37847-1

Appendix 1:

Podcast 1 – Introduction [<https://wereadees.com/recursos/>]

Podcast 2 – Main activities to grow vegetables – part 1 [<https://wereadees.com/recursos/>]

Podcast 3 – Main activities to grow vegetables – part 2 [<https://wereadees.com/recursos/>]

Podcast 4 – Earn money improving your crops [<https://wereadees.com/recursos/>]

Podcast 5 – Earn money improving your sales [<https://wereadees.com/recursos/>]

Podcast 6 – What to do with you money [<https://wereadees.com/recursos/>]

Literacia dos fãs da série brasileira *As Five* na rede social X (Literacy of fans of the Brazilian series *As Five* on the social network X)

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Abstract

This article aims to analyze how the social issues explored in the fictional universe of *As Five* (Globoplay, 2020-2024) stimulate critical thinking and the exchange of ideas among the fans of the Brazilian series on the social network X. To discuss this matter, posts published by interacting viewers were monitored throughout the three seasons of the Globoplay production. As pointed out by Lopes (2009), Baccega (2003), Fischer (2017), and Borges and Sigiliano (2020), the dramatization of social issues encourages the formation of critical subjects, broadening how they perceive and understand the world they are part of. It is concluded that the creative choices and technical-aesthetic framing of *As Five* guide the discussions of interacting viewers, reinforcing the pedagogical nature of serialized fiction. The mobilization of fans on X also results in the inclusion of these themes on the public policy agenda, such as combating prejudice, expanding the representation of minority groups, and deepening the debate on sexual education and burnout.

Keywords: *Media Literacy; Fan Culture; Fan Literacy; X; As Five*

Resumo

Este artigo tem como objetivo analisar de que modo as pautas sociais exploradas no universo ficcional de *As Five* (Globoplay, 2020 - 2024) estimulam o pensamento crítico e o debate de ideias dos fãs da série brasileira na rede social X. Para a discussão desta questão foram monitoradas as postagens publicadas pelos telespectadores interagentes durante as três temporadas da produção do Globoplay. Conforme pontuam Lopes (2009), Baccega (2003) e Fischer (2017) e Borges e Sigiliano (2020) a dramatização de questões sociais estimula a formação de sujeitos críticos, ampliando o modo como percebem e compreendem o mundo em que estão inseridos. Conclui-se que as escolhas criativas e enquadramentos técnico-estéticos de *As Five* pautam as discussões dos telespectadores interagentes, reforçando o caráter pedagógico da ficção seriada. A mobilização dos fãs no X se desdobra também na inserção desses temas na agenda das políticas públicas, tais como o combate ao preconceito, a ampliação da representação de grupos minoritários, e no aprofundamento do debate sobre a educação sexual e o *burnout*.

Keywords: *Literacia Midiática; Cultura de Fãs; Literacia do Fã; X; As Five*

1. Introdução

De acordo com Estrela (1992), Reia Baptista (2002) e Ghiraldelli Jr. (2006) as discussões epistemológicas sobre a pedagogia são amplas e complexas, não se restringindo apenas ao âmbito escolar. O conceito apresenta mudanças significativas ao longo dos anos, principalmente a partir das associações com as utopias educacionais, a ciência da educação e a filosofia educacional (Ghiraldelli Jr., 2006; Portilho, 2011). Desse modo, a pedagogia abarca o estudo de práticas educacionais em distintos contextos sociais, culturais e políticos, englobando tanto a educação formal nas escolas quanto às práticas educacionais informais presentes na sociedade contemporânea (Estrela 1992; Reia Baptista, 2002; Ghiraldelli Jr., 2006; Portilho, 2011). É a partir deste viés multifacetado e não formal da ciência da educação que se inserem as discussões sobre a função pedagógica da ficção seriada brasileira.

Para Fischer (2002; 2017) o papel pedagógico da televisão é vasto e abarca vários materiais audiovisuais como, por exemplo, os comerciais, a ficção seriada e os filmes. De acordo com a autora, o meio desempenha um importante papel na sociedade e cabe aos educadores explorarem o seu potencial como ferramenta pedagógica. Fischer (2002) afirma que os conteúdos veiculados na TV podem fomentar uma percepção visual e auditiva mais apurada dos alunos. Ao promover a compreensão crítica da televisão os educadores propiciam aos alunos ferramentas para distinguir não apenas diferentes tipos de conteúdo, mas também contribuem para o desenvolvimento de habilidades analíticas relacionadas aos propósitos e objetivos das mensagens midiáticas veiculadas.

Segundo Becker e Filho (2011, p.493) a leitura crítica dos programas televisivos “[...] pode auxiliar os cidadãos a construir uma visão mais ampla da mídia e do processo de midiatização”. Para os autores, ao explorar conteúdos e formatos de diferentes gêneros, a ficção seriada estimula a compreensão das camadas interpretativas que integram as tramas, abrangendo elementos estilísticos, estéticos e narrativos. Deste modo, os telespectadores desenvolvem competências relacionadas não apenas à leitura do próprio texto audiovisual, mas da realidade social em que estão inseridos. Em contrapartida, Carneiro (1999a; 1999b) pontua que o ambiente de aprendizagem gerado pela experiência televisiva não está necessariamente relacionado aos recursos técnico-expressivos dos programas, mas ao seu caráter educativo. De acordo com a autora, um programa educativo é desenvolvido a partir de uma intenção educacional específica e tem como o objetivo transmitir conhecimentos, competência e/ou habilidades ao seu público. Geralmente as atrações são produzidas para atender as necessidades educacionais de um determinado grupo demográfico, tais como crianças, adolescentes, etc.

Entre os formatos e gêneros populares no cenário audiovisual brasileiro, Baccega (2003) afirma que a telenovela ocupa um lugar central na função pedagógica da televisão. Segundo a autora, o estímulo à leitura crítica fomentado pelas telenovelas se configura, principalmente, a partir de duas características norteadoras: a narrativa e a obra aberta. Assim como a televisão, a telenovela é norteadora pela narrativa, o recurso faz com que os telespectadores se identifiquem com a história. À medida em que os capítulos vão ao ar, o público estabelece uma relação parassocial com os

personagens, se envolvendo de forma lúdica e profícua com o mundo ficcional. Deste modo, a telenovela engendra uma conversa contínua sobre os acontecimentos narrativos, influenciando a dinâmica social e as perspectivas individuais (Baccega, 2003). Este ponto pode ser observado, por exemplo, em arcos narrativos pautados por temáticas sociais (racismo, sexismo, direitos LGBTQIAPN+, etc). A partir da dramatização das discussões, os telespectadores refletem sobre a situação que o personagem está vivenciando e transpõem, mesmo que de maneira inconsciente, para o seu cotidiano.

O segundo ponto destacado por Baccega (2003) está relacionado com a capacidade da telenovela de incorporar assuntos do cotidiano e recuperar mitos presentes em diferentes culturas. Isto é, por se tratar de uma obra aberta, as tramas conseguem agregar, muitas vezes de maneira até factual, as pautas sociais, culturais e políticas que integram a sociedade. Neste sentido, as telenovelas, de forma direta ou indireta, contribuem para a conscientização de questões ligadas, por exemplo, à saúde, aos grupos minoritários e à justiça social. À medida que as cenas vão ao ar, os arcos narrativos geram debates e estendem a conversação em torno da trama para além da diegese. Fazendo com que o público correlacione os acontecimentos ficcionais com a vida real.

A partir deste contexto, este artigo tem como objetivo analisar de que modo as pautas sociais exploradas no universo ficcional de *As Five* (Globoplay, 2020 - 2024) estimulam o pensamento crítico e o debate de ideias dos fãs da série brasileira na rede social X (antigo Twitter). Para a discussão desta questão realizamos um monitoramento das postagens dos fãs da série durante as três temporadas, exibidas entre 2020 e 2024.

2. A função pedagógica de *As Five*

De acordo com Lopes (2009) o recurso comunicativo se configura a partir da imbricação histórica da telenovela com as mudanças da sociedade brasileira. A autora pontua que a telenovela se constitui como um recurso comunicativo ao atuar como “componente de políticas de comunicação/cultura que perseguem o desenvolvimento da cidadania e dos direitos humanos na sociedade” (Lopes, 2009, p. 32). Deste modo, “[...] abordar a telenovela como recurso comunicativo é identificá-la como narrativa na qual se conjugam ações pedagógicas tanto implícitas quanto deliberadas que passam a institucionalizar-se em políticas de comunicação e cultura no país. (Lopes, 2009, p. 32).

O recurso comunicativo discutido por Lopes (2009) pode ser observado no contexto televisivo brasileiro a partir de 1968, com *Beto Rockfeller* (Tupi, 1968 - 1969). Escrita por Bráulio Pedroso a trama era composta por sequências externas, linguagem coloquial, humor e personagens ambíguos, engendrando um novo paradigma da teledramaturgia brasileira. Lopes (2009) afirma que a história se conectava com a realidade dos telespectadores ao explorar temas factuais que estavam presentes no cotidiano.

Além de representar um marco estético, estilístico e narrativo no âmbito da telenovela, *Beto Rockfeller* também estabeleceu uma nova convenção. Segundo Lopes (2009, p. 25) a partir da exibição da trama cada novela deveria trazer uma ‘novidade’, enfatizando a produção como uma “representação de uma contemporaneidade sucessivamente atualizada”. Esta convenção pode ser observada, por exemplo, no figurino dos personagens, nas referências aos acontecimentos do momento em que a trama está no ar, etc. (Lopes, 2009).

A ação pedagógica da ficção discutida por Lopes (2009) se configura como um ponto norteador da 25ª temporada da telenovela *Malhação*. Entretanto, antes de discutirmos sobre o universo de *Malhação: Viva a Diferença* (2017-2018) e do seu *spin-off* *As Five*, é importante contextualizarmos a criação e a produção de *Malhação*. A telenovela foi criada em 1995 por Andréa Maltarolli e Emanuel Jacobina e teve sua última temporada exibida em 2020. O programa é o mais longo e o principal produto de ficção seriada televisiva da TV Globo criado especificamente para o público jovem. A telenovela se estrutura a partir de temporadas, cada uma delas é composta por em média 180 capítulos, que vão ao ar ao longo de um ano. As temporadas de *Malhação* são independentes e apresentam personagens e arcos narrativos distintos, compartilhando apenas a ambientação e os temas pertinentes à juventude.

Inicialmente a história era ambientada em uma academia de preparação física, que dá o nome ao programa. Em 1999, na sexta temporada, a atração começou a ter como principal cenário o ambiente escolar. Intitulada *Malhação Múltipla Escolha* a trama abordou questões como, por exemplo, drogas, racismo, sexo, crise financeira e aborto. Segundo Fachine *et al.* (2020) a escola, apesar de apresentar diferentes características em cada temporada, facilitou a inserção de núcleos adultos, principalmente compostos por professores, funcionários e pais.

Um dos pontos centrais da telenovela, principalmente nas temporadas exibidas a partir dos anos 2000, é o *merchandising* social. De acordo com Lopes (2009, p. 32) o termo “[...] pode ser definido como um recurso comunicativo que consiste na veiculação em tramas e nos enredos das produções de teledramaturgia de mensagens socioeducativas explícitas, de conteúdo ficcional ou real”. Isto é, as mensagens socioeducativas vão além da mera inserção de um fato no mundo ficcional. Para que ocorra é necessário que o arco narrativo aborde questões ligadas às medidas de prevenção, proteção, reparação ou punição; dê atenção para as causas e consequências relacionadas com comportamentos e hábitos inadequados dos personagens, além de valorizar a diversidade de perspectivas sobre uma certa temática (Lopes, 2009; Fachine *et al.*, 2020).

Conforme pontuam Fachine *et al.* (2020), os temas abordados durante as temporadas de *Malhação* abarcam temas sociais pertinentes ao público jovem. Nos primeiros anos de exibição, as questões, tais como o início da vida sexual, o relacionamento com os pais e os amigos, e as dúvidas em relação ao futuro profissional eram tratadas de maneira mais genérica e discutidas sem grandes problematizações. A partir dos anos 2000, temáticas como, por exemplo, o preconceito racial, o *bullying*, a gravidez na adolescência foram trabalhadas nos capítulos de modo mais denso, apresentando diversas perspectivas e facilitando o diálogo entre pais e filhos. Entretanto, é importante ressaltar que, por ser composta por temporadas independentes, desenvolvidas por equipes criativas

distintas, o recurso comunicativo do programa varia de acordo com o mundo ficcional proposto pelos autores.

Criada por Cao Hamburger, *Malhação: Viva a Diferença* foi marcada pelo protagonismo feminino. Pela primeira vez, em 25 anos de exibição, a novela infantojuvenil foi protagonizada por cinco mulheres, e abordou de forma profícua temas como o racismo, a diversidade, a síndrome de Asperger (SA), o feminismo, o assédio sexual e a homofobia (Borges *et al.*, 2021). Além de explorarem distintas linguagens e formatos, as temáticas sociais também são recorrentes em outras obras de Cao Hamburger (Carneiro, 1999a). Programas como, por exemplo, *Pedro e Bianca* (TV Cultura, 2012-2014) e *Que Monstro te Mordeu?* (TV Cultura, 2014-2015) refletem sobre os grupos minoritários, o conceito de família, a saúde mental e a diversidade na contemporaneidade.

O principal arco narrativo de *Malhação: Viva a Diferença* se desdobra após as adolescentes Keyla (Gabriela Medvedovski), Benê (Daphne Bozaski), Tina (Ana Hikari), Lica (Manoela Aliperti) e Ellen (Heslaine Vieira), de origens e personalidades diferentes, ficarem presas no mesmo vagão de metrô durante uma pane elétrica. O *plot* tem início quando Keyla entra em trabalho de parto e as personagens se unem em solidariedade para ajudá-la no nascimento do bebê, Tônico. Ao longo de seus 222 capítulos a telenovela conquistou fãs brasileiros e de outras partes do mundo nas redes sociais, além de ter alcançado índices de audiência de 20,43 pontos em média, ocupando o posto de maior Ibope¹ da década nesta faixa horária da TV Globo (Borges *et al.*, 2019).

A campanha dos fãs para que a emissora produzisse um *spin off* da atração mobilizou as redes sociais, especialmente o X, nas semanas que antecederam a exibição do último capítulo, em março de 2018. As ações do *fandom* abarcaram memes, *hashtags*, abaixo assinado on-line, edits, *tweets* mencionando os perfis gerenciados pelo Grupo Globo e as contas pessoais dos roteiristas. Em abril de 2019, a emissora anunciou a produção do *spin-off* para a plataforma *on demand* Globoplay. Composta por três temporadas, exibidas entre 2020 e 2024, *As Five* foi protagonizada por Keyla, Ellen, Lica, Tina e Benê, que se reencontram após seis anos sem se verem. As personagens estão no começo da vida adulta e enfrentam conflitos comuns à Geração Z. Ao longo dos 26 episódios a série abordou temas como o feminismo, o preconceito, a xenofobia, o capacitismo e a maternidade solo.

3. A literacia do fã: discussões preliminares

Segundo Livingstone (2007, p.27) a literacia midiática se refere “[...] à capacidade de acessar, analisar, avaliar e criar mensagens através de uma variedade de contextos diferentes”² (tradução nossa). Deste modo, ao englobar os processos de produção, consumo e distribuição dos conteúdos midiáticos a literacia midiática “[...] deve habilitar os cidadãos para o pensamento crítico e a resolução criativa de problemas a fim de que possam ser consumidores sensatos e produtores de informação” (Borges, 2014, p. 183). Um dos principais pontos de interseção entre a ação pedagógica da ficção seriada contemporânea e a literacia midiática pode ser observada nos estudos da cultura de fãs. A

¹ Índice de monitoramento da audiência televisiva.

² the ability to access, analyze, evaluate and create messages across a variety of contexts.

partir de levantamento³ do estado da arte realizado no *Publish or Perish* observa-se que pesquisas sobre as práticas da cultura de fãs e a literacia midiática começam a ser publicadas em 2003, os trabalhos refletem sobre a capacidade crítica e criativa do público ávido a partir do estudo de diferentes objetos empíricos. Dos 246 trabalhos levantados (Figura 1), 7% analisam como as dinâmicas das comunidades dos fãs e a produção coletiva de conteúdo estimulam a aprendizagem informal, entre as amostras estão os fóruns, as Wikis e os grupos de *fansubbers*. Já 10% trabalhos investigam os conteúdos pautados pela estética do remix, a partir de vídeos e memes os fãs exploram novas camadas interpretativas do universo canônico. 13% dos trabalhos são voltados para o estudo das mobilizações e ações em rede organizadas pelos *fandoms*, os pesquisadores analisam a relação da cultura pop com questões sociais e políticas. Por fim, 70% dos trabalhos refletem sobre as histórias, criadas pelos fãs, inspiradas em universos fictícios de séries de TV, filmes, livros, quadrinhos, games e outros conteúdos midiáticos. Apesar de ganhar novos desdobramentos no ambiente da cultura da convergência, a *fanfic* é uma das práticas mais antigas no âmbito da cultura de fãs e abrange habilidades literárias, lúdicas, linguísticas e multimodais.

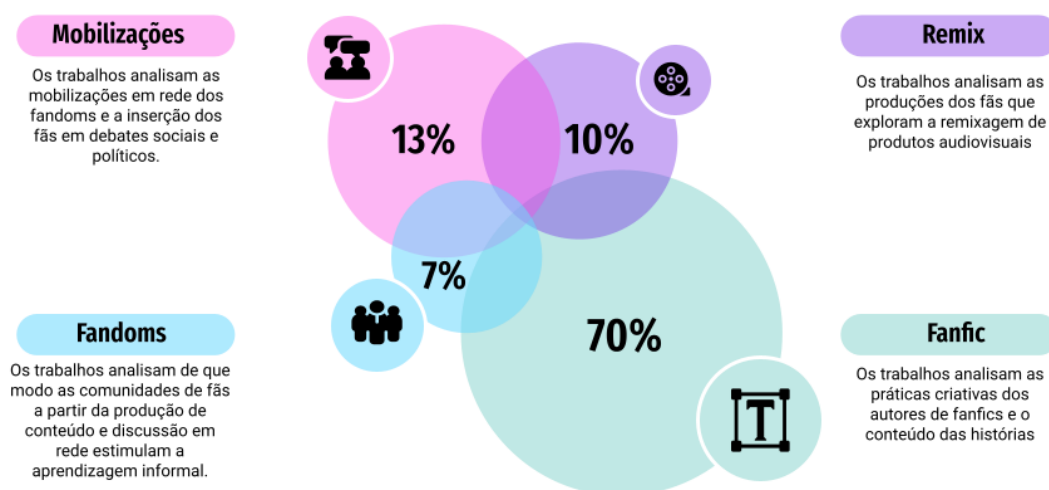


Figura 1. Sistematização do estado da arte. Fonte: Elaborado pelas autoras (2024)

Conforme pontuamos em trabalhos anteriores (Sigiliano; Borges, 2021; Borges *et al*, 2023), ao analisarmos as práticas da cultura de fãs podemos observar uma multiplicidade de competências em operação como, por exemplo, a produção de conteúdos, o ativismo, a sistematização e a curadoria de informações, a ressignificação das tramas, a edição de imagens, entre outras.

Para Jenkins (2015, p. 73) as atividades críticas e criativas dos fãs “[...] envolve níveis de atenção diversos e convoca competências diversas de espectador, diferente de quando se assiste ao mesmo conteúdo de forma causal”. O autor afirma que (2015, p.70) a *leitura fã*⁴ é “[...] um processo, um movimento que vai da recepção inicial da transmissão televisiva a uma elaboração gradual dos episódios e sua remodelagem em termos alternativos”. Deste modo, para Jenkins (2015) o fã dominaria

³ Termos buscados: “fan literacy”, “fan media literacy”, “fã e literacia midiática”, “fã e letramento midiático”, “fã e competência midiática”

⁴ *Fannish reading* na versão em inglês.

dois modos de leitura: a textual e a intertextual, isto é, ao ler textualmente o público ávido estabelece uma relação íntima com o universo ficcional, reconhecendo cada detalhe do metatexto. Já o segundo modo de leitura é a intertextual e vai além da trama, nela o fã consegue identificar múltiplas redes intertextuais entre o paratexto em questão e os elementos externos, formando amarrações interpretativas. Com base nesse contexto, neste trabalho definimos a literacia do fã como um conjunto de habilidades críticas e criativas envolvendo a capacidade de avaliar, produzir, participar, ressignificar e distribuir um conteúdo midiático a partir do seu universo de referência (Figura 2).



Figura 2. Capacidades que envolvem a literacia do fã. Fonte: Elaborado pelas autoras (2024)

A literacia do fã abrange as competências multissensoriais por meio da repercussão do conteúdo midiático, da ampliação dos desdobramentos da trama e do aprofundamento e da ressignificação da história, além do domínio da arquitetura operacional e/ou informacional das plataformas digitais. Em outras palavras, a partir do envolvimento emocional e de um profundo conhecimento sobre as regras e os códigos estilísticos, estéticos e narrativos do universo de referência, o fã tem a capacidade de avaliar a coerência e as potencialidades da trama; produzir, ressignificar e distribuir conteúdos com base no cânone; além de participar de comunidades em rede (redes sociais digitais e plataformas digitais) e de ações transmídia desenvolvidas pelas empresas.

4. Análise da produção crítica e criativa dos fãs de *As Five no X*

Para a análise dos conteúdos produzidos pelos fãs de *As Five no X* adotamos o protocolo⁵ de abordagem de monitoramento, extração e codificação de dados desenvolvido no âmbito do *Observatório da Qualidade no Audiovisual*, que se estrutura a partir de três etapas. A primeira etapa foi realizada em novembro de 2020 e consistiu na exploração sistemática dos perfis para a definição dos perfis de fãs que seriam monitorados. Para isso, inserimos na barra de busca do próprio X, vinculada à sua API (*Application Programming Interface*), os termos (palavras chave e *hashtags*)

⁵ O protocolo foi executado no âmbito dos projetos que integraram as pesquisas da Equipe da UFJF na Rede Obitel Brasil (Rede Brasileira de Pesquisadores da Ficção Televisiva).

relacionados ao mundo ficcional de *Malhação: Viva a Diferença* e *As Five*. Com base nos resultados⁶ os perfis foram selecionados a partir dos recursos de individualização e das camadas estruturais de informação (Recuero, 2009; Bruns; Moe, 2013). Isto é, as páginas precisariam apresentar elementos como, por exemplo, capa, avatar e *user* relacionados ao universo ficcional e também produzir conteúdos regulares sobre a trama. A partir dessa filtragem chegamos ao recorte de 85 perfis ativos gerenciados por fãs.

Quadro 1. Temporadas de *As Five* monitoradas. Fonte: Elaborado pelas autoras (2024)

Temporada	Número de episódios	Período de exibição
Primeira temporada	10	12 de novembro de 2020 a 14 de janeiro de 2021
Segunda temporada	8	8 de fevereiro de 2023 a 1 de março de 2023
Terceira temporada	8	1º de março de 2024

A segunda etapa foi focada no monitoramento e na extração de conteúdos publicados durante as três temporadas da série. Os *tweets* são extraídos a partir da linguagem de programação *Python* por intermédio do pacote *Tweepy* e da biblioteca *Pandas* (Sigiliano, 2024)⁷. A terceira etapa consistiu na codificação dos 562.218 mil *tweets* extraídos durante o monitoramento da distribuição dos 26 episódios pelo Globoplay (Sigiliano, 2024). Nesta etapa⁸, os *tweets* foram identificados, descritos e categorizados manualmente, ou seja, cada publicação foi analisada de forma individual no *software Atlas.ti*.

O objetivo foi agrupar os dados de acordo com suas idiossincrasias, em busca de similaridades, dissimilaridades, padrões e peculiaridades. Por conta do volume e da complexidade das publicações dos fãs de *As Five*, a codificação é dividida em duas fases: macrocodificação e microcodificação (Sigiliano, 2024). Inicialmente, na macrocodificação categorizamos os *tweets* a partir do tema central do comentário feito pelo público, já na microcodificação a categorização é norteada pelas especificidades destas postagens. Ao todo foram codificados 165 contextos conversacionais de 85 perfis de fãs de *As Five* no X. Destes, 117 estão diretamente relacionados aos temas sociais que integram a trama (Gráfico 1).

⁶ Nessa fase foram encontrados 317 perfis ativos no X.

⁷ Para a realização desta etapa utilizamos o registro de desenvolvedor/acadêmico do X, liberado para as autoras desde 2020. O registro permite que o usuário faça requisições diretamente a API (Rest API, Search API e Streaming API) e tenha acesso aos tokens e keys para realizar os monitoramentos e extrações a partir de ferramentas mais complexas e direcionadas. O registro também possibilita a extração mensal para 10 milhões de *tweets*, requisições à API por hora e a liberação do uso não comercial dos metadados.

⁸ Este artigo segue as diretrizes do *Internet Research: Ethical Guidelines 3.0* da Association of Internet Researchers (Franzke et al, 2020). Desse modo, com o objetivo de proteger a identidade dos fãs, foram adotadas técnicas de pseudonimização (*pseudonymization* no inglês). Como pode ser observado, todos os *tweets* que integram este trabalho têm o avatar e o nome de usuário (*username*) borrados, o que dificulta a identificação dos fãs que compõem a amostra. Ao exportar os dados brutos para o *Atlas.ti*, as informações identificáveis dos *tweets* foram substituídas por códigos aleatórios, inviabilizando o rastreamento até os perfis.

Ao longo das três temporadas a série abordou diversas questões sociais, principalmente, a partir dos arcos narrativos das personagens Lica, Tina, Bene, Ellen e Keyla (Figura 3). As temáticas davam continuidade aos recursos comunicativos de *Malhação: Viva a Diferença*, mas também aprofundavam assuntos ligados ao início da vida adulta. No X, os fãs repercutiam os desdobramentos do universo ficcional e correlacionavam o metatexto com a realidade a partir de acontecimentos factuais e de experiências pessoais.

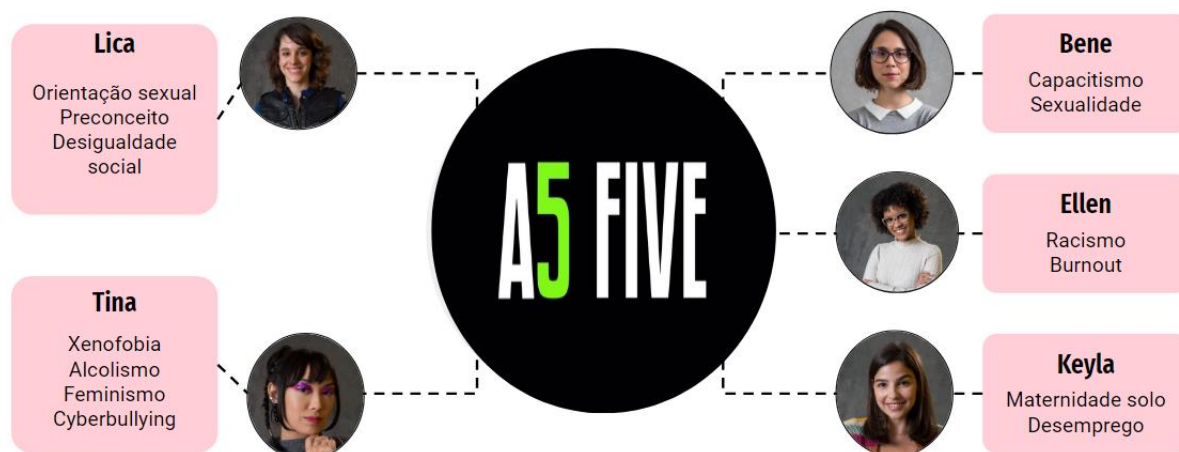


Figura 3. Temas sociais abordados nos arcos narrativos das protagonistas durante as três temporadas de *As Five*. Fonte: Elaborado pelas autoras (2024)

Para este artigo iremos analisar os contextos conversacionais do X relacionados aos seguintes temas: racismo, *burnout*, maternidade solo, orientação sexual e sexualidade. A seleção da amostra se justifica pela recorrência das questões sociais que mais geraram repercussão na rede social durante a exibição da trama⁹.

⁹ Como cada *tweet* que compõem a amostra poderia integrar mais de um contexto conversacional, optamos por apresentar a porcentagem das recorrências, para evitar a duplicação das métricas finais. Orientação Sexual (12,6%), Preconceito (2,5%), Desigualdade Social (5,2%), Xenofobia (2,1%), Alcoolismo (2,3%), Feminismo (3,9%), Cyberbullying (1,6%), Capacitismo (1,3%), Sexualidade (7,8%), Racismo (25,8%), Burnout (20,7%), Maternidade Solo (12,9%), Desemprego (1,3%).

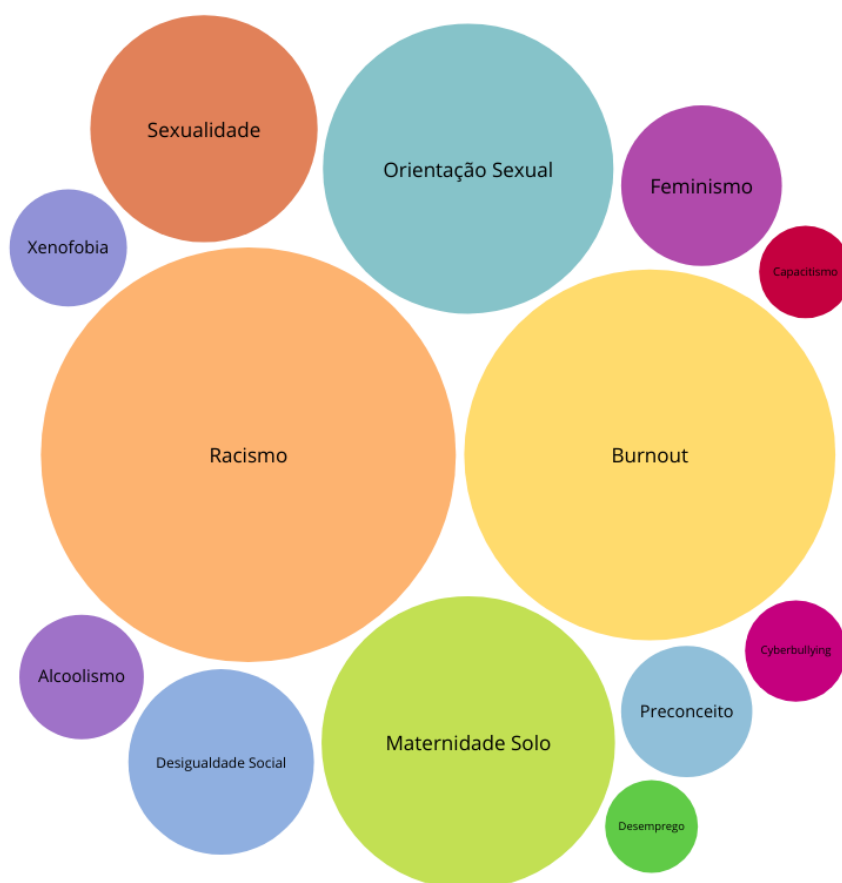


Gráfico 1. Recorrência dos temas sociais nos contextos conversacionais gerados pelos fãs no X durante as três temporadas de *As Five*. Fonte: Elaborado pelas autoras (2024)

Desde a exibição de *Malhação: Viva a Diferença*, as discussões sobre o racismo integram o arco narrativo de Ellen, ao longo da telenovela a personagem protagonizou várias cenas em que pontuava didaticamente para o público as discriminações que sofria no ambiente escolar. Em *As Five*, a jovem quebra estereótipos recorrentes na TV brasileira ao ocupar um posto de liderança no trabalho e ser altamente qualificada como profissional.

Nos *tweets* compartilhados pelos fãs no X os telespectadores interagentes¹⁰ ressaltavam o modo como a personagem era construída, indo além das discussões sobre o racismo (Figura 4). O público pontuava que Ellen integrava narrativas que no contexto da televisão nacional são raramente protagonizadas por atrizes pretas. Outro ponto repercutido pelos fãs na rede social era a relação parassocial com a personagem, a partir dos desdobramentos dos episódios o público compartilhava suas histórias, destacando a verossimilhança da trama e a forma como se identificavam com as situações vividas pela jovem na série (Figura 4).

¹⁰ O termo telespectador interagente é usado, para designar o público que interage (propaga, retuíta, produz conteúdo, responde às enquetes, etc.) com o universo ficcional (Borges *et al*, 2019).



Figura 4. Os fãs repercutem sobre o modo como o arco narrativo de Ellen vai além das discussões sobre o preconceito e compartilham experiências pessoais semelhantes às vividas pela personagem. Fonte: X (2024)

O arco narrativo de Ellen também fomentou debates entre os fãs em torno da exaustão profissional (Figura 5). No *plot* a personagem é hospitalizada após tomar remédios e estimulantes para cumprir um *deadline* do mestrado. Os telespectadores interagentes refletiram sobre a importância de estabelecer um limite entre o trabalho e vida pessoal e, a partir de capturas da cena, pontuavam que estava em choque com o estado da personagem. As publicações também destacavam como os sintomas de exaustão extrema, estresse e esgotamento físico podem, muitas vezes, passar despercebidos (Figura 5).

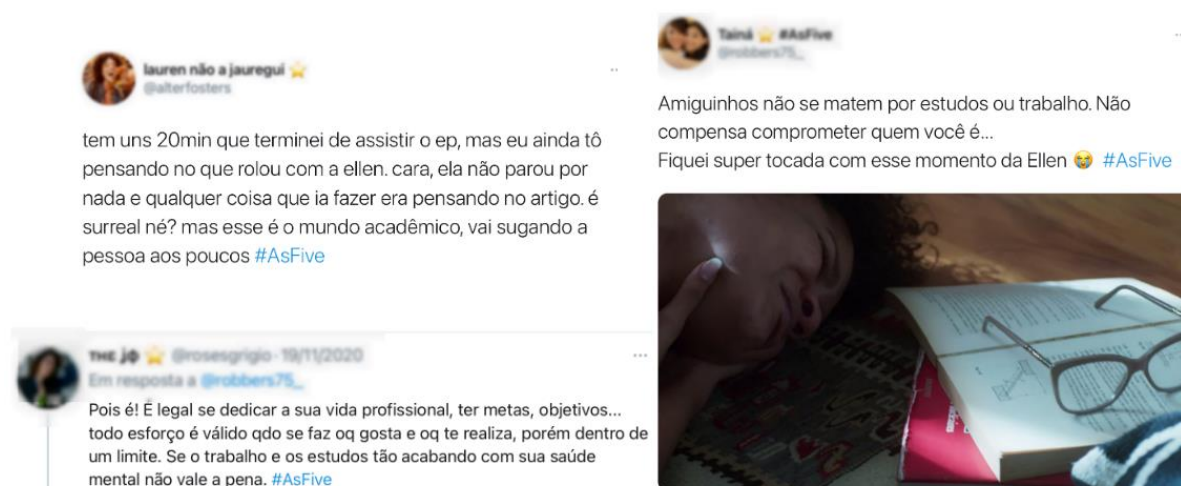


Figura 5. O burnout de Ellen gerou debate entre os telespectadores interagentes, os tweets pontuaram a importância da saúde mental. Fonte: X (2024)

A maternidade solo é um dos principais temas sociais de *Malhação: Viva a Diferença*, a temática é o ponto de partida para o encontro de Lica, Tina, Bene, Ellen e Keyla no primeiro capítulo da telenovela. Com o nascimento de Tonico, a discussão avança abordando diversas questões que tangem o assunto tais como a romantização, a culpabilização, a rede de apoio, a disparidade na divisão de cuidados, etc. Em *As Five* o arco narrativo de Keyla é ampliado, discutindo principalmente as

dificuldades tanto financeiras quanto para equilibrar o trabalho e as responsabilidades de cuidado com o filho. No X os fãs repercutiam o preconceito e os julgamentos sociais sofridos pela personagem, que muitas vezes tinha que omitir a existência de Tônico para ter oportunidades profissionais (Figura 6). Os telespectadores interagentes discutiam na rede social como a condição financeira e desigualdades de gênero, no que diz respeito à distribuição de responsabilidades parentais, são pontos importantes no arco da personagem. A partir de capturas das cenas e publicação dos diálogos o público ampliava as discussões propostas pela série.



Figura 6. No X os fãs elogiaram a verossimilhança do arco narrativo de Keyla, a partir das cenas das personagens o público destacou a importância do tema. Fonte: X (2024)

O recurso comunicativo em torno de grupos minoritários, principalmente ligados às pessoas LGBTQIA+, se configura como um fator norteador no engajamento dos fãs da trama. Conforme analisamos em trabalhos anteriores (Sigiliano & Borges, 2021; Borges *et al.*, 2021) o casal Limantha, formado por Lica e Samantha, foi repercutido por fãs no Brasil e de outros países, sendo um dos responsáveis pela produção do *spin off*. Neste sentido, os contextos conversacionais codificados ressaltam as discussões dos telespectadores em torno da representatividade. Os *tweets* repercutiam que a abordagem narrativa de Limantha se distanciava de estereótipos e arquétipos, não reduzindo as jovens às representações simplistas e estigmatizadas (Figura 7). O público também contrapunha o modo como o casal foi desenvolvido em *Malhação* em *As Five*, destacando que na telenovela, por conta da faixa de horário, as personagens não trocavam carícias e/ou beijos como os casais heterossexuais (Figura 7). Elementos como a fotografia, a composição imagética, o enquadramento e a trilha sonora eram detalhados pelos fãs, sendo que os *tweets* analisavam como os recursos contribuíam para o desenvolvimento do arco.



Figura 7. A orientação sexual de Lica e Samantha foi analisada pelos fãs em diversos momentos de As Five, os telespectadores interagentes destacam a forma como o arco narrativo foi desenvolvido e a quebra de estereótipos. Fonte: X (2024)

Por fim, a partir do arco narrativo de Bene os fãs debateram sobre a educação sexual (Figura 8). Os *tweets* elogiavam a forma como o tema foi abordado na série, contribuindo para a quebra de tabus em torno da sexualidade, explorando uma visão mais aberta e responsável sobre o corpo, além de encorajar uma relação saudável com o próprio prazer.



Figura 8. Os fãs ressaltam a importância da discussão sobre a educação sexual na série e abordagem do tema. Fonte: X (2024)

Os fãs também ressaltaram que a participação de profissionais mulheres nas equipes criativas da trama contribuíram positivamente para a abordagem do assunto, distanciando as sequências de um viés sexista e fetichista.

6. Considerações Finais

Conclui-se que as escolhas criativas e os enquadramentos técnico-estéticos de *As Five* desempenham um papel significativo nas discussões dos fãs no X. A série, ao abordar temáticas contemporâneas e sociais, reforça o caráter pedagógico da ficção seriada contemporânea. Ao apresentar narrativas de qualidade sobre juventude, diversidade e questões de gênero, a produção contribui para a reflexão crítica do público, que passa a debater e interpretar essas temáticas sob diferentes perspectivas na rede social.

Deste modo, assuntos como o combate ao preconceito, a inclusão de grupos minoritários na mídia e o aprofundamento do debate sobre o espectro da sexualidade ganham mais visibilidade entre os fãs. O engajamento dos telespectadores interagentes, ao amplificar essas pautas, fomenta discussões que podem influenciar o desenvolvimento de políticas públicas voltadas à representatividade e à defesa dos direitos de minorias sociais (Borges *et al*, 2023). As práticas da cultura de fãs desempenham um importante papel no ativismo de jovens brasileiros em torno de pautas políticas como, por exemplo, as campanhas #FandomsPeloVoto e #CriançaNãoÉMãe.

Conforme analisamos anteriormente, a partir dos temas discutidos no mundo ficcional criado por Cao Hamburger o público não só estabelece uma correlação entre a ficção e a realidade, como também aplica as temáticas da trama em outros contextos sociais, culturais e políticos (Borges; Sigiliano, 2020). Ao retratar e refletir sobre as realidades vividas por muitos jovens da Geração Z, *As Five* vai além do entretenimento, desempenhando uma ação pedagógica relevante que corrobora com o conceito de recurso comunicativo proposto por Lopes (2009). Nesse sentido, a trama engendra um espaço de debate entre os fãs no X em que a *timeline* da rede social se torna um espaço para questionar normas estabelecidas e abrir diálogos sobre questões como a sexualidade, a maternidade solo e o preconceito.

As Five exemplifica o papel da ficção seriada de qualidade em atuar como um vetor pedagógico, mobilizando fãs a não apenas discutir sobre os episódios distribuídos pelo Globoplay, mas também a utilizar os arcos narrativos das personagens para promover diálogos em esferas mais amplas. Para futuros trabalhos pretendemos aprofundar as discussões epistemológicas envolvendo a literacia do fã, reforçando a reflexão sobre a cultura pop e a literacia midiática.

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El Cuerpo Es el Texto: Inteligencia Artificial, Textualidad, Corporeidad y Ciudadanía Algorítmica

(The Body Is the Text: Artificial Intelligence, Textuality, Corporeality, and Algorithmic Citizenship)

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Abstract

In recent decades, artificial intelligence (AI) has come to play an increasingly central role in a wide range of fields, from industry to healthcare to education, bringing profound and often controversial changes. The use of AI in education, in particular, is accompanied by a complex set of challenges and possibilities. AI technologies make it possible to elaborate and personalize learning, responding to the individual needs of learners and promoting unprecedented interactive environments (Luckin et al., 2016). However, the integration of these technologies has raised important questions, not only of a technical nature, but also philosophical, ethical and social, impacting deep aspects of knowledge and human learning.

Keywords: *Artificial intelligence, innovation, education, textuality, corporeality, and algorithmic citizenship.*

Resumen

En las últimas décadas, la inteligencia artificial (IA) ha pasado a desempeñar un papel cada vez más central en una amplia gama de campos, desde la industria a la sanidad o la educación, aportando cambios profundos y a menudo controvertidos. El uso de la IA en la educación, en particular, va acompañado de un complejo conjunto de retos y posibilidades. Las tecnologías de IA permiten elaborar y personalizar el aprendizaje, respondiendo a las necesidades individuales de los estudiantes y promoviendo entornos interactivos sin precedentes (Luckin et al., 2016). Sin embargo, la integración de estas tecnologías ha planteado importantes cuestiones, no solo de carácter técnico, sino también filosófico, ético y social, que inciden en aspectos profundos del conocimiento y del aprendizaje humano.

Palabras clave: *Inteligencia artificial, innovación, educación, textualidad, corporeidad y ciudadanía algorítmica.*

1. Introducción

En este artículo exploramos tres dimensiones críticas de la transformación educativa debida a la IA: textualidad, corporeidad y ciudadanía algorítmica. Estos conceptos representan pilares teóricos que vinculan el conocimiento humano con la naturaleza corpórea y las estructuras sociales, que ahora se reconsideran bajo la lente de la inteligencia artificial.

La **textualidad**, que siempre se ha considerado un pilar de la transmisión del conocimiento, se ve radicalmente transformada por los modelos lingüísticos de la IA, que permiten una interacción dinámica y dialógica que supera la naturaleza estática del texto tradicional, tal y como la describe Platón en el *Fedro*. Los modelos lingüísticos a gran escala (LLM), como GPT-4 o LLAMA, permiten una "conversación" con el texto, en la que el alumno puede interactuar con un contenido escrito que parece responder a sus preguntas y ofrecerle aclaraciones (Brown et al., 2020). Esta transformación plantea interrogantes sobre la calidad de las respuestas, la creatividad y la capacidad de estimular el pensamiento crítico, aspectos en los que la tecnología de IA aún se enfrenta a importantes limitaciones (Chomsky et al., 2023).

La segunda dimensión, la **corporeidad**, cuestiona la relación entre cuerpo e inteligencia. En una era de IA predominantemente incorpórea, que procesa la información sin un cuerpo físico, surgen nuevas teorías que se enfrentan a la tradición de la cognición encarnada. Según la teoría de la autopoiesis de Maturana y Varela, la inteligencia humana se desarrolla en constante relación con el entorno a través del cuerpo, lo que convierte al propio cuerpo en parte esencial del proceso de comprensión y adaptación. Por el contrario, la IA incorpórea desafía esta visión, sugiriendo que la inteligencia puede existir de forma puramente algorítmica, basada únicamente en datos y computación simbólica (Maturana y Varela, 1980). La dicotomía entre IA encarnada y desencarnada ofrece una nueva perspectiva para repensar la interacción entre cuerpo e inteligencia, con implicaciones que van desde la pedagogía hasta la psicología y la neurociencia.

Por último, la **IA** y la **ciudadanía** introducen una nueva dimensión ética y política, la de la llamada *ciudadanía algorítmica*. En la era digital, los derechos y la condición social de las personas se ven influidos por algoritmos que evalúan, clasifican y controlan a las personas sobre la base de diversos tipos de datos, a menudo recogidos sin consentimiento consciente. Cheney-Lippold (2011) describe este fenómeno como *Ius Algorithms*, en el que las decisiones relativas al acceso a derechos y servicios no son tomadas por instituciones humanas, sino por sistemas automáticos de evaluación. La cuestión de la discriminación algorítmica o *algorithmic discrimination* surge cuando los modelos de IA reproducen sesgos sociales en los datos de entrenamiento, perpetuando la discriminación de género, raza o clase. En su obra *Algorithms of Oppression*, Safiya Umoja Noble (2018) explora cómo los sistemas de IA, sin una regulación adecuada, pueden amplificar las injusticias sociales y los estereotipos culturales.

En este contexto, se hace evidente que las nuevas tecnologías de la IA no son meras herramientas educativas, sino "actores" capaces de influir en la formación del conocimiento, la percepción del cuerpo y la dinámica de los derechos. La reflexión crítica sobre estas cuestiones es crucial para comprender y gestionar el creciente papel de la IA en la educación. Explorar la textualidad, la corporalidad y la ciudadanía algorítmica no sólo nos permite identificar las potencialidades de la IA, sino también los riesgos éticos y sociales que podrían derivarse de ella, poniendo de relieve la necesidad de un enfoque interdisciplinar que incluya la pedagogía, la ética, la filosofía y la sociología para un uso consciente y crítico de la inteligencia artificial.

2. Inteligencia artificial y textualidad

2.1. Evolución de la textualidad en la era digital

Durante siglos, la textualidad ha sido una forma estática y lineal de transmisión del conocimiento, un modo que caracteriza tanto la transmisión cultural como la educativa. Platón, en el *Fedro*, criticaba el texto escrito por su incapacidad para responder dinámicamente a las preguntas del lector, subrayando que el discurso vivo (el diálogo) era superior. Con la introducción de los grandes modelos lingüísticos (LLM), esta visión tradicional se reformula por completo: la IA permite ahora una textualidad que no sólo responde, sino que se adapta a preguntas concretas, permitiendo una conversación que acerca el texto a una interacción viva. En el ámbito educativo, esta transformación es revolucionaria, ya que ofrece a los estudiantes una herramienta capaz de responder, aclarar y adaptarse a sus necesidades, ampliando el papel del texto, que pasa de ser una estructura estática a una entidad interactiva.

Según Geert Lovink (2019), la interactividad introducida por los LLM constituye una nueva forma de conocimiento "dialógico" que cambia radicalmente nuestra relación con la información escrita. La posibilidad de formular preguntas a los textos crea un entorno en el que el alumno puede adoptar un papel activo, navegando por la información de forma dinámica. Este cambio de paradigma implica pasar de una pedagogía basada en la asimilación pasiva a un aprendizaje experimental, en el que el texto se convierte en un espacio de descubrimiento activo.

2.2. Grandes modelos lingüísticos (LLM): ventajas y limitaciones

Los LLM, como GPT-3, GPT-4 y el modelo LLAMA, son sistemas basados en redes neuronales profundas que se han entrenado con grandes conjuntos de datos textuales para desarrollar capacidades de comprensión y generación lingüísticas. Al modelar estadísticamente miles de millones de parámetros, los LLM son capaces de "predecir" y construir frases con una coherencia y precisión lingüísticas que imitan el lenguaje humano (Brown et al., 2020). En educación, el uso de estos modelos ofrece numerosas ventajas. Por ejemplo, pueden responder a preguntas complejas, resumir textos, generar explicaciones detalladas y proponer ejemplos o ejercicios, adaptando la respuesta a las necesidades del alumno en tiempo real.

Sin embargo, estas capacidades tienen importantes limitaciones. Los LLM generan respuestas basadas en patrones probabilísticos, lo que significa que no "entienden" realmente el contenido, sino que operan sobre la base de correlaciones entre palabras y frases. Chomsky et al. (2023) señalan que estas respuestas pueden ser "conformistas", limitándose a reformular lo que es común en los datos de entrenamiento. Este enfoque reduce la posibilidad de respuestas innovadoras o contraintuitivas, lo que limita la eficacia del modelo a la hora de promover el pensamiento crítico. En un contexto educativo, esta limitación supone un obstáculo, ya que el aprendizaje no consiste únicamente en acumular información, sino que también requiere estímulos que cuestionen las ideas preexistentes y abran nuevas perspectivas.

2.3. El Tutor Digital Personal (TDP): un estudio de caso

El Tutor Digital Personal (TDP) representa una aplicación pionera de los LLM en la educación, ya que proporciona una simulación de diálogo que puede ayudar a los estudiantes en el proceso de aprendizaje. Basado en modelos como GPT-4 y LLAMA, el TDP está diseñado para responder a preguntas específicas, actuando como un asistente virtual capaz de adaptarse al nivel de conocimientos del usuario y de operar en diferentes contextos lingüísticos (Brown et al., 2020; Touvron et al., 2023). El TDP puede asumir la función de un "tutor personalizado", respondiendo a preguntas específicas y proporcionando explicaciones detalladas que se adaptan a las necesidades del usuario, fomentando un aprendizaje continuo y flexible.

Según Woolf (2009), la presencia de tutores digitales como el TDP es un paso importante hacia la enseñanza adaptativa, que reconoce las diferencias individuales en el ritmo y los modos de aprendizaje. El TDP es capaz de supervisar el progreso del alumno, adaptando las respuestas en función de los resultados obtenidos. Esta interactividad, posible gracias a las tecnologías de IA, transforma el tutor digital en una herramienta que no sólo responde al aprendizaje, sino que lo "acompaña", haciendo posible un proceso educativo a medida.

A pesar de este potencial, el uso de la TDP plantea dudas sobre la calidad de la interacción y la autenticidad de las respuestas proporcionadas. Mientras que un profesor humano puede responder de forma innovadora y creativa, la TDP se basa únicamente en patrones probabilísticos derivados de datos de entrenamiento. Su "conocimiento" se limita, pues, a la combinación estadística de palabras, sin verdadera comprensión ni juicio crítico. Chomsky et al. (2023) señalan cómo esta limitación hace que la TDP sea inadecuada para desarrollar el pensamiento crítico de los alumnos, ofreciendo respuestas que pueden parecer correctas pero que en realidad carecen de la profundidad interpretativa necesaria para analizar y comprender cuestiones complejas.

Woolf (2009) sostiene que la presencia de un tutor digital puede ciertamente enriquecer el proceso educativo, pero no puede sustituir el valor añadido que representa la interacción humana. La capacidad del profesor para interpretar las respuestas de forma impredecible y para estimular a los alumnos a explorar puntos de vista alternativos es una cualidad indispensable que la IA difícilmente puede reproducir. En particular, aunque la TDP puede apoyar la fase de adquisición de conocimientos, el papel humano sigue siendo crucial para fomentar la reflexión crítica y el pensamiento divergente, componentes esenciales del aprendizaje en profundidad.

2.4. Críticas y preguntas abiertas

La evolución de la textualidad con la introducción de los LLM representa un cambio significativo que reconfigura el concepto de conocimiento textual. Sin embargo, sigue abierta la cuestión de la capacidad de los modelos de IA para contribuir a una verdadera innovación del conocimiento. Aunque la capacidad de generar respuestas contextuales puede ser útil en

contextos informativos, el riesgo es que los LLM se limiten a respuestas conformistas, reproduciendo nociones ya conocidas en lugar de estimular nuevas perspectivas. Según Lovink (2019), los riesgos de utilizar IA en interacciones textuales se derivan del hecho de que estos modelos tienden a estandarizar el conocimiento, privándolo de la complejidad y la variedad de interpretaciones que caracterizan a la mente humana.

En el contexto educativo, este riesgo es especialmente relevante. El aprendizaje exige que los estudiantes se enfrenten a información que desafía sus creencias y fomenta la capacidad de análisis crítico. Los LLM, si bien son capaces de responder preguntas con precisión, carecen de la capacidad de desarrollar argumentos no convencionales, esenciales para el desarrollo intelectual. Como afirman Wolff y sus colegas (2009), la educación no consiste solo en responder preguntas, sino en enseñar a formular las preguntas adecuadas y a explorar nuevas formas de pensar.

La interactividad que ofrecen los LLM, si bien representa una ruptura con la visión tradicional de la textualidad, debe equilibrarse con un enfoque crítico que reconozca las limitaciones de estos sistemas. Aunque los LLM pueden servir como ayuda didáctica, es crucial que su uso vaya acompañado de una orientación educativa humana que pueda compensar las limitaciones de la tecnología y garantizar un aprendizaje que no se reduzca a la reproducción de conocimientos preexistentes. En este sentido, los modelos lingüísticos de IA son una herramienta poderosa, pero que requiere un uso consciente y crítico para evitar que se convierta en un obstáculo para la innovación y la creatividad.

3. La corporeidad en la inteligencia artificial

3.1. La teoría de la autopoiesis y la importancia de la corporeidad

La teoría de la autopoiesis, introducida por Humberto Maturana y Francisco Varela, representa un hito en la comprensión del papel del cuerpo en el proceso cognitivo. Según Maturana y Varela (1980), la autopoiesis describe la capacidad de los seres vivos de autogenerarse y mantenerse a sí mismos mediante un proceso constante de interacción con el entorno. Este concepto cuestiona la idea de que la inteligencia pueda existir como una entidad abstracta o puramente mental, señalando que la cognición humana está inseparablemente conectada a la experiencia física. El cuerpo, según la autopoiesis, es un "puente" que conecta al individuo con el mundo, proporcionando un contexto para el aprendizaje y la comprensión.

La teoría sugiere que la cognición no es un proceso aislado, sino un fenómeno emergente que surge de las interacciones corporales y sensoriales con el entorno circundante. Maturana y Varela (1987) explican que la percepción, la memoria y la capacidad de aprendizaje están influidas por el contexto corporal en el que se insertan. En el contexto de la inteligencia artificial, este punto de vista implica que una IA sin cuerpo, es decir, "incorpórea", puede

carecer de la base fundamental para desarrollar una comprensión auténtica y significativa del mundo.

Este concepto choca con el modelo actual de IA, que tiende a tratar la cognición como un proceso separado de la experiencia física. Los algoritmos de aprendizaje automático procesan la información y toman decisiones únicamente a partir de datos abstractos, sin interacción directa con el entorno. Esto plantea importantes cuestiones filosóficas y epistemológicas sobre la naturaleza de la inteligencia: ¿si el cuerpo es esencial para la comprensión, puede una IA sin cuerpo “entender” realmente lo que procesa? La teoría de la autopoiesis sugiere que la respuesta puede ser negativa, poniendo un límite sustancial a la capacidad de la IA para replicar la inteligencia humana.

3.2. La inteligencia "incorpórea" de la IA y sus limitaciones

La inteligencia artificial moderna, especialmente en sus aplicaciones de aprendizaje profundo, se basa en una concepción incorpórea de la cognición. Los modelos de aprendizaje automático analizan datos y hacen predicciones sin necesidad de interacción corporal con el entorno físico. Esta "inteligencia incorpórea" se limita a procesar la información simbólica y matemáticamente, sin ninguna experiencia sensorial o física del mundo. La cognición incorpórea de la IA se presenta, así como una estructura computacional que reorganiza datos, pero sin un contexto corporal que dé sentido a esos datos.

Los autores del artículo analizan cómo este planteamiento supone un reto para la comprensión completa del concepto de inteligencia. En ausencia de cuerpo, la cognición de la IA se reduce al análisis de datos sin interacción real con el entorno y sin posibilidad de formar experiencia subjetiva o conocimiento situado. La falta de percepción física limita la capacidad de la IA para responder a ambigüedades y situaciones complejas que requieren una comprensión profunda del contexto. Este problema se ha debatido ampliamente en filosofía y neurociencia, donde se ha destacado la importancia del cuerpo como vehículo a través del cual los seres humanos desarrollan el conocimiento y la inteligencia emocional (Clark, 1998).

Otra limitación de la inteligencia incorpórea es su incapacidad para comprender las emociones y las interacciones sociales. La falta de un cuerpo físico implica la ausencia de un sistema sensorial que permita a la IA percibir señales emocionales y responder empáticamente. Esto hace especialmente compleja la aplicación de la IA en contextos educativos o terapéuticos, donde la relación física y social es un elemento clave para la eficacia de la intervención.

3.3. El paradigma de la inteligencia incorporada

En respuesta a las limitaciones de la cognición incorpórea, en los últimos años ha surgido el paradigma de la inteligencia encarnada (o cognición encarnada). Este enfoque propone un modelo de IA que integra elementos de corporeidad e interacción sensorial para desarrollar capacidades cognitivas que van más allá del simple procesamiento de datos abstractos. La

inteligencia incorporada sostiene que el cuerpo y la experiencia física son esenciales para comprender el mundo de forma auténtica y significativa.

Rodney Brooks (1991), uno de los pioneros de este enfoque, sostiene que la verdadera inteligencia requiere una dimensión física que permita la interacción directa con el entorno. Los robots autónomos, por ejemplo, representan una aplicación de la inteligencia incorporada, ya que utilizan sensores y actuadores para recabar información sobre el contexto físico, tomar decisiones y adaptarse en tiempo real a los cambios del entorno. Esta interacción directa con el entorno permite crear formas de aprendizaje que se aproximan al aprendizaje humano, ya que el robot desarrolla una "comprensión" situada y contextual del mundo.

La inteligencia incorporada es especialmente pertinente en contextos educativos, donde se intenta desarrollar una IA que pueda interactuar con los alumnos de forma más natural e intuitiva. Los robots educativos, como NAO y Pepper, son capaces de interactuar físicamente con los estudiantes, apoyando el aprendizaje mediante movimientos, expresiones e interacciones corporales. Estas herramientas ofrecen nuevas posibilidades para la educación y representan una ruptura significativa con los modelos tradicionales de IA, que operan exclusivamente de forma simbólica e incorpórea (Belpaeme et al., 2018). Sin embargo, incluso en estos casos, la inteligencia corporizada se limita a simular las interacciones humanas, sin lograr una comprensión auténtica de las experiencias vividas.

3.4. IA en entornos virtuales y simulaciones: ¿Un compromiso?

Un enfoque alternativo a la corporeidad física es el uso de entornos virtuales y simulaciones, en los que la IA puede "interactuar" con espacios digitales que reproducen, al menos en parte, situaciones del mundo real. Este modelo, utilizado a menudo en juegos o simulaciones de entrenamiento, permite a los agentes de IA desarrollar habilidades mediante la interacción con un entorno que reproduce aspectos del mundo real. Las simulaciones virtuales, por ejemplo, se utilizan en programas de formación de cirujanos, pilotos y otros profesionales, permitiendo a los participantes adquirir habilidades específicas sin riesgos físicos.

Las simulaciones ofrecen la ventaja de permitir un aprendizaje situado sin necesidad de un cuerpo físico, pero siguen teniendo limitaciones. Los entornos virtuales no logran reproducir plenamente la complejidad y variabilidad del mundo real, reduciendo la experiencia a una serie de escenarios predefinidos. Además, la falta de una verdadera experiencia sensorial limita la capacidad de la IA para responder a situaciones ambiguas o imprevistas. Como señalan Slater y Sanchez-Vives (2016), la inmersión en un entorno virtual es muy diferente de la experiencia física real, ya que no activa las mismas respuestas corporales y psicológicas.

3.5. Conflictos y preguntas abiertas

La comparación entre la inteligencia incorpórea y la IA encarnada plantea importantes divergencias epistemológicas. Por un lado, la inteligencia incorpórea se presta bien a tareas muy especializadas y circunscritas, como el análisis de datos y la resolución de problemas

matemáticos, pero es limitada en cuanto a comprensión contextual y adaptabilidad. Por otro lado, la inteligencia incorporada reconoce el valor de la interacción física y sensorial con el entorno, proporcionando un modelo más cercano a la cognición humana. Sin embargo, la IA incorporada sigue siendo una simulación de la interacción humana, incapaz de alcanzar la profundidad emocional y la perspicacia desarrolladas a través de la experiencia vivida.

La capacidad de desarrollar una comprensión situada y contextual es crucial en contextos educativos y terapéuticos, donde las dimensiones relacionales y corporales desempeñan un papel clave. Los autores del artículo sugieren que una IA incorpórea puede no ser capaz de establecer conexiones auténticas con los seres humanos, ya que carece de las percepciones sensoriales y las experiencias corporales que forman el núcleo de las interacciones humanas. Sin embargo, sigue siendo una cuestión abierta si es posible diseñar IA que, incluso sin cuerpo, puedan interactuar con las personas de forma empática y comprensiva, respetando la complejidad de las relaciones humanas.

4. Ciudadanía algorítmica y discriminación

4.1. Ciudadanía tradicional y ciudadanía algorítmica

El concepto de ciudadanía, tradicionalmente vinculado a los derechos y deberes que adquiere un individuo como miembro de un Estado, está hoy influido por una nueva dimensión digital. Históricamente, la ciudadanía se ha definido como el "derecho a tener derechos" (Arendt, 1951), un principio fundamental que establece el estatus jurídico de un individuo sobre la base de criterios territoriales o de ascendencia, como el *ius soli* y el *ius sanguinis*. Sin embargo, la llegada de la era digital ha introducido nuevos criterios de pertenencia, configurados y a menudo controlados por algoritmos que evalúan y clasifican a las personas basándose en datos digitales.

Esta transformación subyace al concepto de *ciudadanía algorítmica*, en la que el derecho a acceder a recursos y servicios está mediado por plataformas digitales y algoritmos que interpretan los datos personales, las actividades en línea y las interacciones sociales (Cheney-Lippold, 2011). Este sistema, descrito como *Ius Algorithms*, implica que los ciudadanos son evaluados y categorizados según métricas y puntuaciones digitales, a menudo opacas y difíciles de cuestionar. Los sistemas de puntuación, adoptados en contextos como el crédito financiero, el empleo y el acceso a los servicios sociales, determinan cada vez más el estatus de "ciudadanía" de un individuo e influyen en su participación social y sus derechos de acceso.

A diferencia de la ciudadanía tradicional, que se basa en procedimientos legales transparentes y verificables, la ciudadanía algorítmica introduce una dimensión de opacidad que compromete la posibilidad de comprender los criterios por los que se distribuyen o deniegan los derechos. En un contexto digital, los algoritmos representan una forma de autoridad invisible que, mediante el análisis de datos, determina quién puede acceder a

determinados recursos, sin respetar necesariamente los principios de equidad y justicia (Citron & Pasquale, 2014).

4.2. Discriminación algorítmica: sesgos históricos y distorsiones algorítmicas

Un problema crítico de la ciudadanía algorítmica es la discriminación algorítmica, o *algorithmic discrimination*, que se produce cuando los sistemas de IA perpetúan o amplifican los sesgos en los datos de entrenamiento. Los algoritmos utilizados para tomar decisiones en los ámbitos de las finanzas, la salud, el derecho y la educación suelen basarse en conjuntos de datos históricos, que contienen datos que pueden reflejar desigualdades y sesgos sociales (Barocas y Selbst, 2016). Si no se corrigen, estos sesgos se reproducen en los resultados de los algoritmos, creando desigualdades sistemáticas que penalizan especialmente a las minorías étnicas, las personas de distinto sexo o las clases sociales desfavorecidas.

Safiya Umoja Noble (2018), en su libro *Algorithms of Oppression*, analiza cómo los motores de búsqueda y otros sistemas algorítmicos tienden a reproducir estereotipos de género y raza, a menudo reforzando la discriminación existente en lugar de reducirla. Según Noble, esta tendencia se deriva del hecho de que los datos de entrenamiento de los algoritmos reflejan valores y percepciones culturales, que acaban distorsionando la imagen de las minorías, creando un ciclo de sesgo algorítmico difícil de romper. Este fenómeno es especialmente relevante en el caso de las minorías raciales y de género, que corren el riesgo de ser marginadas por un sistema que, por el contrario, debería promover la inclusión y la equidad.

La investigación realizada por Buolamwini y Gebru (2018) sobre los sistemas de reconocimiento facial, descrita como *Gender Shades*, pone de relieve cómo los algoritmos de reconocimiento tienen tasas de error significativamente más altas para las personas de piel oscura y las mujeres que para los hombres blancos. Estos resultados demuestran cómo la falta de diversidad en los datos de entrenamiento puede dar lugar a formas de discriminación automatizada, generando efectos negativos en contextos que requieren imparcialidad, como la contratación de personal o la seguridad pública.

4.3. Algoritmos lus y derechos digitales

El concepto de *lus Algorithms*, tal como lo describe Cheney-Lippold (2011), representa un desafío directo a los mecanismos jurídicos y sociales tradicionales de la ciudadanía. La ciudadanía tradicional, basada en normas jurídicas, se fundamenta en principios de transparencia y rendición de cuentas, mientras que el *lus Algorithms* se caracteriza por una opacidad que dificulta la comprensión de los criterios en los que se basan las decisiones algorítmicas. En contextos en los que la IA se utiliza para determinar derechos como el acceso al crédito, la atención sanitaria o la elegibilidad para el empleo, el riesgo es que los ciudadanos sean excluidos o penalizados sobre la base de puntuaciones algorítmicas que no pueden cuestionar ni comprender.

Un ejemplo concreto es el sistema de puntuación crediticia utilizado en muchos países para determinar el acceso a hipotecas, préstamos y otros servicios financieros. En este contexto, los algoritmos evalúan a las personas en función de parámetros como el historial financiero, los hábitos de compra e incluso los contactos sociales, asignando puntuaciones que influyen en su acceso a recursos clave (O'Neil, 2016). El problema es que estos algoritmos operan en una "caja negra", lo que dificulta la comprensión de la lógica utilizada e imposibilita impugnar los resultados. Esta falta de transparencia socava el derecho fundamental de la ciudadanía, minando la confianza en las instituciones y generando desigualdades digitales.

4.4. Sesgo y transparencia en los algoritmos

Uno de los aspectos más críticos de la ciudadanía algorítmica es la falta de transparencia en los procesos de toma de decisiones, lo que introduce el problema de la "caja negra" algorítmica. El concepto de "caja negra" describe la dificultad de comprender el funcionamiento interno de los algoritmos, especialmente cuando se trata de modelos de aprendizaje profundo que utilizan redes neuronales complejas. Lipton (2018) señala que esta falta de transparencia no solo limita la capacidad de las personas para cuestionar las decisiones que les afectan, sino que también socava los principios de rendición de cuentas y justicia en los que se basa la ciudadanía democrática.

Diakopoulos (2016) destaca la necesidad de desarrollar normativas que promuevan la transparencia y la interpretabilidad de los modelos de IA. La interpretabilidad de los modelos, es decir, la capacidad de explicar y comprender las decisiones algorítmicas, es un paso importante para garantizar la equidad y la justicia en los procesos automatizados de toma de decisiones. En un sistema de ciudadanía algorítmica, la introducción de prácticas de interpretabilidad y auditoría ética de los algoritmos sería crucial para evitar discriminaciones injustificadas y proteger los derechos de los ciudadanos digitales.

Sin tales medidas, existe el riesgo de que las decisiones tomadas por los algoritmos sigan siendo inaccesibles e inalterables, con efectos potencialmente devastadores para los derechos humanos y civiles. Los algoritmos, aunque son herramientas matemáticas, son diseñados y manejados por seres humanos y, por tanto, están sujetos a los mismos sesgos y limitaciones que caracterizan a los sistemas sociales. Es crucial que los desarrolladores de IA y los reguladores trabajen juntos para garantizar que los sistemas algorítmicos sean justos, transparentes y responsables.

4.5. Ejemplos concretos e implicaciones éticas

La discriminación algorítmica tiene importantes repercusiones en varios ámbitos. En el sistema de justicia penal, por ejemplo, se utilizan algoritmos de predicción del riesgo para evaluar la probabilidad de reincidencia de los reclusos, lo que influye en decisiones como la concesión de la libertad condicional o la imposición de medidas de vigilancia. Chouldechova (2017) destacó cómo estos algoritmos, basados en datos históricos, tienden a sobreestimar el

riesgo de reincidencia de las minorías étnicas, perpetuando injusticias sistémicas que penalizan a personas ya de por sí vulnerables.

Las implicaciones éticas del uso de la IA en los derechos digitales también plantean cuestiones de privacidad y protección de datos personales. La recopilación y el análisis masivos de datos sensibles utilizados para entrenar los sistemas de IA plantean graves amenazas para la seguridad y la privacidad de la información personal. Floridi (2015) subraya la necesidad de establecer principios de protección de los derechos digitales para que las decisiones algorítmicas no vulneren la dignidad y la privacidad de las personas.

Es necesario establecer una normativa clara que proteja los derechos de los ciudadanos digitales y garantice un control transparente de las tecnologías algorítmicas, para evitar que la ciudadanía algorítmica se convierta en un instrumento de discriminación y opresión en lugar de inclusión e igualdad.

5. Conclusión: el cuerpo es el texto

Como tecnología en evolución, la inteligencia artificial tiene hoy el potencial de redefinir no sólo el proceso educativo, sino también las formas en que interactuamos y entendemos el mundo. Como se analiza en este artículo, las dimensiones de la textualidad, la corporeidad y la ciudadanía algorítmica revelan las formas en que la IA toca temas profundamente relacionados con nuestra naturaleza humana y social. Aunque estos avances abren nuevas oportunidades para la educación y la participación social, también plantean cuestiones sobre cómo preservar valores fundamentales como la autenticidad, la transparencia y la equidad.

Donna Haraway, en su famoso *Manifiesto Cyborg*, sugiere una perspectiva que puede ofrecer una interpretación única del impacto de la IA: la idea de que el cuerpo humano es un "texto codificado", una entidad que, a través de señales biológicas y químicas, representa un sistema de codificación a través del cual "leemos" e interpretamos el mundo. Según Haraway, el cuerpo no es sólo una estructura física, sino un "organismo textual" que, como un texto, se descompone en signos y códigos que hay que descifrar e interpretar. Este concepto recuerda a la inmunobiología como una forma de "criptografía" en la que el cuerpo humano, a través del sistema inmunitario, reconoce y descodifica la "información" del entorno para proteger su propia integridad.

Este paralelismo entre cuerpo y texto nos invita a repensar el papel de la inteligencia artificial no sólo como herramienta educativa, sino como una forma de "organismo digital" que interactúa con el mundo a través de un sistema de códigos y lenguajes. Los modelos lingüísticos de la IA, como GPT-4 o LLAMA, no son meros mecanismos de procesamiento de datos, sino entidades que se acercan a la descripción de Haraway del "cuerpo como texto": un sistema codificado que dialoga con los usuarios a través del lenguaje, respondiendo a sus preguntas y adaptándose a sus peticiones, aunque carezca de la comprensión y la subjetividad propias de la experiencia humana. Esta reflexión plantea interrogantes sobre lo que significa

realmente "conocer" o "comprender" en el contexto de la IA, donde el conocimiento se genera mediante esquemas y probabilidades más que por la experiencia directa.

La corporeidad, por otra parte, revela un aspecto crítico de la relación entre la IA y la cognición humana: si, como sugiere la teoría de la autopoiesis, el cuerpo es esencial para el desarrollo de la comprensión, ¿puede la IA, desprovista de cuerpo y sensaciones físicas, alcanzar alguna vez la verdadera inteligencia? Los planteamientos de la cognición incorporada, que pretenden desarrollar una IA capaz de interactuar físicamente con el mundo, representan un esfuerzo por superar esta limitación. Sin embargo, incluso la inteligencia incorporada, aunque se aproxima a la interacción humana, sigue siendo una simulación de la dinámica corporal, incapaz de desarrollar una experiencia verdadera o una percepción auténtica.

La dimensión de la ciudadanía algorítmica también introduce nuevos retos éticos y sociales. El *Ius Algoritmi*, tal como lo describe Cheney-Lippold (2011), define un nuevo tipo de pertenencia basado en criterios opacos regidos por algoritmos que median el acceso a recursos y servicios cruciales. Este concepto de ciudadanía, mediada por sistemas que operan en una "caja negra" y no ofrecen ninguna posibilidad de impugnación o comprensión de las lógicas aplicadas, constituye un riesgo para los derechos fundamentales de las personas. De hecho, la ciudadanía algorítmica es un desafío a la propia democracia, ya que reduce el poder de decisión del individuo en favor de un sistema automatizado que, si no se regula, puede perpetuar la discriminación y amplificar las desigualdades.

En este contexto, la reflexión de Haraway nos ofrece un punto de partida para considerar la IA como un nuevo tipo de "cíborg" que, sin ser humano ni totalmente artificial, interactúa con la sociedad como un organismo textual y corpóreo. El concepto de cíborg puede verse así como una metáfora de la IA moderna, que actúa como intermediaria entre las dimensiones corpórea y digital, transformando datos en respuestas, evaluaciones y decisiones que influyen en nuestra vida cotidiana.

Las conclusiones que se desprenden de este análisis son claras: mientras que, por un lado, la IA ofrece extraordinarias posibilidades para ampliar el conocimiento y facilitar el acceso a los servicios, por otro, existe el riesgo de que se convierta en una herramienta de control y discriminación. Los algoritmos, como entidades codificadas, no están libres de sesgos y limitaciones humanas y, por tanto, deben desarrollarse y utilizarse de forma transparente y responsable. Es esencial que el uso de la IA, especialmente en contextos educativos y cívicos, se rija por principios éticos que respeten la dignidad humana y promuevan la inclusión.

En última instancia, el futuro de la inteligencia artificial requiere una sinergia entre innovación tecnológica y reflexión crítica. Los modelos de IA deben concebirse no sólo como herramientas, sino como entidades "codificadas" que, al interactuar con la sociedad, configuran nuestra forma de interpretar el mundo. La fusión de cuerpo-como-texto y texto-como-cuerpo, sugerida por Haraway, nos recuerda que la inteligencia -ya sea biológica o artificial- es siempre el producto de una compleja interacción con el entorno, una interacción que debe

respetarse y comprenderse para garantizar que la IA contribuya a una sociedad más justa y consciente.

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Older Adults' Safety and Security Online: A Post-Pandemic Exploration of Attitudes and Behaviors

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Abstract

Older adults' growing use of the internet and related technologies, further accelerated by the COVID-19 pandemic, has prompted not only a critical examination of their behaviors and attitudes about online threats but also a greater understanding of the roles of specific characteristics within this population group. Based on survey data and using descriptive and inferential statistics, this empirical study delves into this matter. The behaviors and attitudes of a group of older adults aged 60 years and older (n=275) regarding different dimensions of online safety and cybersecurity are investigated. The results show that older adults report a discernible degree of concern about the security of their personal information. Despite the varied precautions taken, most of them do not know where to report online threats. What is more, regarding key demographics, the study found some significant differences in terms of gender and age group, but not disability status. This implies that older adults do not seem to constitute a homogeneous group when it comes to attitudes and behaviors regarding safety and security online. The study concludes that support systems should include older adults in the development of protective measures and acknowledge their diversity. The implications of the results are discussed and some directions for future research are proposed.

Keywords *internet usage; online risks, cybersecurity; online safety; digital literacy*

1. Introduction

Older adults' adoption and usage of digital technologies has significantly increased over the past decade (Faverio, 2022; Schehl et al., 2019) making them the population segment with the highest growth in this area (Friemel, 2016). The trend not only includes increased ownership of smartphones and tablet computers but also more frequent internet and social media use, as well as expansion of their online activities (Faverio, 2022; Schehl et al., 2019; Vaportzis et al., 2017). Evidence suggests that this tendency has been accelerated by the COVID-19 pandemic (Drazich et al., 2023; Lee, 2023; Sin et al., 2021; Sixsmith et al., 2022). However, while the trend depicts an improvement, adoption and usage of digital technologies continue to trail behind younger generations (Faverio, 2022; Pacheco, 2022) with evidence showing the gap extends to skills (Hargittai et al., 2019) and quality of internet connectivity (Pacheco, 2024).

Early academic literature has mostly portrayed older adults as unwilling or unable to use digital technologies (Vaportzis et al., 2017). However, this has progressively changed as benefits of digital tools perceived by older adults have been uncovered by research. These benefits include, for instance, communication with family and friends, access to information and services, leisure and recreation, dealing with social isolation and loneliness, maintaining independence, and higher life satisfaction and

wellbeing (Aggarwal et al., 2020; Hou et al., 2022; Lips et al., 2020; Mohan & Lyons, 2022; Zhang et al., 2021). However, the growing adoption of digital technologies and the perceived advantages they offer to older adults is linked to the possibility of encountering online risks. The subsequent subsections delve deeper into this matter.

1.1 Older Adults and Online Safety and Security

Older adults' increasing engagement with and through digital technologies also means associated online risks and potential harm (Jiang et al., 2016). Online risks include a range of experiences, behaviors, and events such as cyberbullying, financial fraud, online harassment, identity theft, scams, and phishing. Livingstone (2013), who has extensively investigated online risks in relation to children, explains that conceptually online risks do not necessarily cause harm; however, when it occurs, harm involves negative impacts on people's emotional, physical, and/or mental wellbeing.

Another negative impact of online threats is financial loss, not only for those targeted but also the wider society (Moore, 2010). For instance, a 2023 survey of New Zealand's largest financial institutions reported that customers lost nearly \$200 million NZD due to scams in the prior 12 months (RNZ, 2023).

Meanwhile, it has been argued that cybersecurity and online safety are two distinctive areas of policy and research (Robinson, 2022). The former, cybersecurity, involves protecting devices and networks, usually via technical measures (e.g., antivirus software or multi-factor authentication) from threats caused by third parties. Meanwhile, the latter, online safety, focuses on protecting the people using the devices and networks from threats and potential harm caused by third parties through awareness, education, information, and technology. However, while this distinction is helpful, in practice online safety and security can overlap. For instance, dealing with a privacy-related threat can involve technical and/or behavioral responses such as using antivirus software and/or stopping using the online service or tool.

Around the world, policy discussions and measures to reduce risks and possible harm from online threats have focused on improving people's online security (cybersecurity) and safety. In New Zealand, for instance, the Harmful Digital Communications Act 2015 (HDCA) serves as the primary legislative measure to address technology-mediated abuse. The HDCA, which is based on ten communications principles, introduced civil court orders for a serious and/or repeated breach of the communication principles and a criminal offense – sanctioned with fines and/or imprisonment – that makes it illegal to post a digital communication intended to cause harm or that in effect causes harm to the victim. Under the HDCA, an appointed Approved Agency receives complaints about harmful digital communications and promotes online safety (Pacheco & Melhuish, 2021).

1.2 The Extent of Online Threats among Older Adults

The extent of older adults' vulnerability to online threats has been a topic of research inquiry. A 2021 Pew Research Center study (Vogels, 2021) found that 21% of older adults aged 65 years and over experienced at least one form of online harassment (e.g., offensive name-calling, purposeful embarrassment, stalking, physical threats, harassment over a sustained period of time, and sexual harassment). By a large margin the most common experiences were offensive name-calling and

purposeful embarrassment (Vogels, 2021). In terms of financial scams, another study shows that two thirds of older adults were targeted with COVID-19-related scams with charitable contributions and treatments being the most common (Teaster et al., 2023). Burnes et al. (2017) conducted a meta-analysis and found that financial fraud affects around 1 in 18 older adults (5.4%) annually, excluding those who are institutionalized or have cognitive impairments. Older adults are also the target of phishing attacks (Grilli et al., 2021) and consumer fraud (Shao et al., 2019) among others.

The literature has also compared and examined the attitudes and actions of older adults regarding online security and safety. It is argued that, compared to their younger counterparts, older adults are more concerned about their privacy and security online (Branley-Bell et al., 2022); however, they tend to be more reluctant to ask for help or to report that they have been the target of an online threat (Parti, 2022). They are also less aware and knowledgeable about managing security and privacy risks such as sharing passwords, using the same password over multiple platforms or passwords that can be easily guessed (Grimes et al., 2010). When it comes to participating in work or school-based safety training, older adults are less likely to do so (Alagood et al., 2023).

What is more, it is argued that as older adults tend to have lower digital literacy and skills, which have an impact on their protective behaviors online (Schreurs et al., 2017). When compared with their younger counterparts, older adults are less likely to use password managers (Ray et al., 2020) and report low adoption of two-factor authentication systems (Das et al., 2021). In addition, having less confidence with digital tools results in older adults performing fewer security behaviors, experiencing difficulties using security tools, spotting risks, and making informed privacy decisions (Jiang et al., 2016; Morrison et al., 2021). It has also been argued that due to declining cognitive abilities, they struggle to identify fake emails and websites (Mentis et al., 2019).

To sum up, there is a growing body of research about older adults' experiences of online threats. However, with the continuous evolution of the internet and related technologies, new online threats may arise, posing potential risks and harm. Therefore, it is crucial to continue gathering evidence on this phenomenon to identify patterns and its impact on vulnerable groups such as older adults.

1.3 The Heterogeneity of Older Adults

News outlets and social media platforms have consistently described older adults as a homogenous group, portraying them as disempowered, vulnerable, and passive (Makita et al., 2021). This has also been a tendency in research on internet usage, skills, and inequalities, in which older adults have been overlooked and described as a group with identical online behaviors and experiences (Hargittai & Dobransky, 2017; Quan-Haase et al., 2018). This line of thought and operationalization of older adults in research has been found in the studies summarized so far in this section. The risk of assuming older adults are a uniform group is that this view undervalues their agency to control different facets of their daily lives and ignores that they carry with them the skills and attitudes they have developed growing up (Quan-Haase et al., 2018). What is more, as Mannheim et al. (2019) point out, the homogenization of older adults can not only perpetuate ageist assumptions, but also hinder the development of technologies that meet their diverse needs, excluding them from research and design processes.

However, over the last decade a number of studies have provided evidence of the heterogeneity of older adults when it comes to their adoption and usage of the internet. A nationally representative survey (van Deursen & Helsper, 2015), for instance, found that older adults over 75 exhibit less variety in their internet use and are less likely to use email than older adults aged between 65 and 70. Additionally, older men use the internet more frequently than older women (van Deursen & Helsper, 2015). Another quantitative study (Hargittai & Dobransky, 2017) showed that older adults with greater incomes and educational levels are better at using websites, and that they are also more likely to utilize the internet for a wider range of purposes. A qualitative study with a group of Canadians aged 65 and above (Quan-Haase et al., 2018) similarly found that although they reported limited internet skills, they engaged in a wide range of online activities such as keeping in touch with family and friends, searching for information, performing economic activities (e.g., online banking), and entertainment (e.g., watching YouTube). Meanwhile, Liu (2021) observed that within the subset of regular internet users who possess a favorable social status, white females experienced a higher level of well-being and a diminished sense of loneliness. Conversely, black and minority ethnic females with an unfavorable social standing, despite their consistent use of the internet, reported a lower quality of life and a heightened feeling of loneliness. In another study conducted by Medero, Merrill Jr., and Ross (2022), it was found that older adults from racial and ethnic minority backgrounds demonstrated a decreased frequency of internet usage on both personal and public computers. Meanwhile, in Finland, Hänninen et al. (2021) conducted a qualitative study with adults aged 75 and above. The study found that participants' technology engagement varied: some were competent users, others avoided any engagement with the digital environment due to lack of interest, and some others engaged with the support of knowable users.

To sum up, there is an emerging literature about variations in internet access and activities within the segment of older adults showing they represent a heterogeneous group. However, to the best of our knowledge, minimal scholarly attention has been devoted to whether differences are also found in terms of cybersecurity and online safety behaviors and experiences. This is indeed surprising, given the susceptibility of this demographic to various forms of online threats, including scams and financial fraud. Consequently, the current work seeks to build on existing efforts by providing a snapshot of evidence from New Zealand. In doing so, policies and services can be designed and implemented to promote a safer online environment for older adults.

2. Method

2.1. Research Aims

The aim of the current work is to explore the attitudes and behaviors of older adults from New Zealand regarding some dimensions related to online safety and cybersecurity, and whether differences based on key demographics are statistically significant. The dimensions of interest are the following: attitudes towards the security of personal information online, decisions to stop using an online service due to privacy concerns, common protective actions against online threats, awareness of where to report an online threat, and attitudes towards six online safety issues (i.e., cyberbullying, online extremism,

identity theft, misleading information, conspiracy theories, and hate speech). The current work seeks to address two core research questions (RQ):

RQ 1: What are the attitudes and behaviors of older adults aged 60 years and above from New Zealand about different dimensions related to online safety and security?

RQ 2: Are there significant differences in older adults' online safety and security attitudes and behaviors in terms of gender, age group, and disability status?

2.2. Study Design

The data come from *New Zealand's Internet Insights*, a survey aiming at gathering evidence about different aspects of adult New Zealanders' interactions with digital technologies. Secondary analysis was conducted on the data related to online security and safety behaviors and attitudes.

The survey was administered online. Online surveys are cost-effective, easier to administer, and increasingly used in social and policy research (Lehdonvirta et al., 2021). In terms of exploratory inquiry, online surveys have been shown to be a useful technique for gathering evidence about people's self-reported access, activities, and attitudes regarding the digital environment as well as experiences of online victimization (Pacheco & Melhuish, 2018, 2019; Pacheco & Burgess, 2024).

Data collection was conducted from November 7 to 14, 2022, by a market research company on behalf of InternetNZ, a not-for-profit organisation managing the .nz country code top-level internet domain. Participants were recruited from the company's online consumer panels. A combination of pre-survey quotas as well as post-survey weighting based on census estimates from Stats NZ (New Zealand's official data agency) were employed to ensure the overall sample is representative of key demographics such as age and gender.

The original full survey dataset included adult internet users aged 18 years and above ($n=1,001$). A total of 275 participants reported to be aged 60 years and older. This group encompassed the final sample for the current study. Similar to other studies on older adults and digital technologies (Hargittai et al., 2019; Jacobson et al., 2017), this age criterion was chosen to focus specifically on participants of the older adult demographic.

The survey questionnaire underwent cognitive testing and pilot testing.

When data collection took place, the COVID-19 Protection Framework had already been terminated by the New Zealand government. The framework was put in place to make life with the Omicron variant easier to handle. It operated from December 2021 to September 2022. Due to declining reported COVID-19 cases, a highly immunized population, and improved availability of antiviral medications to treat COVID-19, the rules for various "traffic light" settings were eliminated. A New Zealand Government website provides more detailed information about the framework (New Zealand Government, 2022).

The maximum margin of error for the total sample is +3.1% at the 95% confidence interval.

2.3. Ethical Considerations

In relation to ethical considerations, all participants provided informed consent, which was documented. They were briefed on the survey's purpose, its topics, and how their information would be utilized. Additionally, the survey introduction outlined participants' right to abstain from the research and to refuse to answer any questions. It also assured them the right to withdraw from the survey at any point. Furthermore, participants were informed about data storage. The market research firm responsible for data collection ensured that participants' personal information would not be linked to their responses, thus guaranteeing confidentiality. During the data collection phase, the market research company adhered to the New Zealand Research Association's Code of Ethics.

2.4. Measures

2.4.1. Demographics

To account for demographic characteristics associated with experiences and attitudes regarding online safety and security, we included gender, age group, and disability status as independent variables. Of the sample, 46.9% identified as male and 53.1% identified as female. No participant in our sample of older adults identified as gender diverse. Age group was a dichotomous variable with participants aged 60-69 representing 52.4% of the sample while participants aged 70 and above represented 47.6%. In terms of disability status, 76.3% indicated not having a disability while the remaining 23.7% said they do. The definition of disability used in the 2013 Disability Survey (Stats NZ, 2014) was applied to identified participants who self-reported whether they experience a disability. In this respect, participants were asked: 'Do you have a long-term disability or impairment (lasting six months or more) that makes it more difficult for you to do everyday tasks, that other people find easy?' Participants who responded 'Don't know' or 'Prefer not to say' were excluded from analysis (n=9).

2.4.2. Online safety and security

The survey included questions regarding experiences and attitudes about different aspects of online safety and security. In this respect, participants were asked how concerned they were about the security of their own personal details when they use them on the internet. The possible responses were: 'Extremely concerned', 'Very concerned', 'A little bit concerned', 'Not very concerned', 'Not at all concerned', and 'I don't use personal details on the internet'.

Then, participants were asked the following question: 'In the last 12 months, have you decided not to use an online service because of security concerns?' The following options were provided to answer the question: 'Yes – many times', 'Yes – one or just a couple of times', and 'No'.

Then, participants were asked about what security precautions they take with their own devices. This was a multiple-choice question which listed the following options: 'Use a PIN or password on any or all devices', 'Regularly update the software', 'Regularly back up the content', 'Use two factor or multi factor authentication on any or all accounts', 'Use a password manager', 'Use unique passwords for every online service', 'Use a VPN if connecting to the internet using a Wi-Fi network you don't know', and 'None of these'. Only descriptive analysis was performed on the data provided for this question.

Regarding online safety, the following question was asked: 'If you see something online that might be concerning, harmful or dangerous, do you know where to report it?' It was clarified to participants that this included websites, organizations, or agencies to go to. The response options for this question were: 'Yes', 'No', and 'Don't know'.

To measure attitudes about online risks, Likert-type items were used to ask participants how concerned they were about cyberbullying, online extremism, identity theft, misleading information, conspiracy theories, and hate speech. For each of these risks listed, participants were asked to think about society instead of anything they may or may not have personally experienced. To rank each of these online risks, the following scale was provided: 'Extremely concerned', 'Very concerned', 'A little bit concerned', 'Not very concerned', 'Not at all concerned', and 'Don't know'. Participants who selected 'Don't know' were excluded from analysis.

Finally, the survey included a question about attitudes towards the internet. Participants could choose between 'Yes', 'No', and 'I don't know' to answer the following question: 'There are positives and negatives to the internet, but overall do you think the positives outweigh the negatives?'. Participants who selected 'Don't know' as an answer were excluded from analysis.

2.4. Analytical Approach

All analyses were performed using the Jamovi program, version 2.3 (The Jamovi Project, 2023). The analysis comprised a dual framework, employing both descriptive and inferential statistical methods. Descriptive statistics were used to provide an initial overview of the dataset, while inferential statistics, specifically the Chi-square test of independence, were utilized to delve deeper into potential associations between categorical variables. Statistical significance was determined at $p < 0.05$. Simultaneously, we extended our inferential framework by incorporating Cramer's V statistic. Cramer's V measures the strength of association between categorical variables. A Cramer's V below 0.10 means a negligible association, between 0.10 and 0.20 indicates a weak association, between 0.20 and 0.40 represents a moderate association, and between 0.40 and 0.60 indicates a relatively strong association (Rea & Parker, 2014). Categories regarding online security and level of concern about online risks were collapsed into larger categories to facilitate analysis of the observed counts.

3. Results

To begin with, the association of the level of concern about the security of one's own personal details when using the internet with each of the three demographic variables was tested. As can be seen in Table 1, there was a significant association between level of concern about personal details online and age, $\chi^2 (3, N = 275) = 8.40, p = .038$. However, the effect size for this finding, Cramer's V, was weak: .17. Participants aged 70 and over were slightly more likely to be extremely/very concerned about the security of their personal details than those aged 60-69 years old. On the other hand, no significant associations were found in terms of gender, $\chi^2 (3, N = 275) = 5.59, p = .133$, and disability status, $\chi^2 (3, N = 266) = 1.12, p = .772$.

Table 1. Participants' Attitudes about security of Personal Details by Gender, Age Group, and Disability Status

Security of personal details when using the internet											
	Extremely/very concerned		A little bit concerned		Not very/not at all concerned		I don't use personal details online		Total		<i>p</i>
	n	%	n	%	n	%	n	%	n	%	
Gender											.133
Male	81	62.8	38	29.5	5	3.9	5	3.9	129	100.0	
Female	72	49.3	62	42.5	5	3.4	7	4.8	146	100.0	
Total	153	55.6	100	36.4	10	3.6	13	4.7	275	100.0	
Age group											.038
60-69	78	54.2	60	41.7	2	1.4	4	2.8	144	100.0	
70+	75	57.3	40	30.5	8	6.1	8	6.1	131	100.0	
Total	153	55.6	100	36.4	9	3.6	12	4.4	275	100.0	
Disability status											.772
With disability	38	60.3	21	33.3	2	3.2	2	3.2	63	100.0	
Without disability	108	53.2	77	37.9	8	3.9	10	4.9	203	100.0	
Total	146	54.9	98	36.8	10	3.8	12	4.5	266	100.0	

In terms of deciding not to use an online service in the past year due to security or privacy concerns, just over 60% of participants indicated they stopped doing so. However, none of the three demographic variables tested were associated with participants' behavior. The Chi-square test of independence showed the following results: gender, $\chi^2 (1, N = 275) = 0.154$, $p = .695$, age, $\chi^2 (1, N = 275) = 0.510$, $p = .475$, and disability status, $\chi^2 (1, N = 266) = 1.42$, $p = .234$. See Table 2.

Table 2. Participants who Stopped Using an Online Service in the last 12 Months by Gender, Age Group and Disability Status

Stopped using an online service							
	Yes		No		Total		<i>p</i>
	n	%	n	%	n	%	
Gender							.695
Male	81	62.8	48	37.2	129	100.0	
Female	95	65.1	51	34.9	146	100.0	
Total	176	64.0	99	36.0	275	100.0	
Age group							.475
60-69	95	66.0	49	34.0	144	100.0	
70+	81	61.8	50	38.2	131	100.0	
Total	176	64.0	99	36.0	275	100.0	
Disability status							.234
With disability	44	69.8	19	30.2	63	100.0	
Without disability	125	61.6	78	38.4	203	100.0	
Total	169	63.5	97	36.5	266	100.0	

In addition, Table 3 describes the results of the multiple-choice question regarding the security precautions participants take with their own devices. Of those who answered this question (n=274), the most common protective action was using a PIN or password followed by regular software updates. The use of two factor or multi-factor authentication, and unique passwords for every online service, were also common. Interestingly, the former, two/multi factor authentication, was about 11 percentage points lower than that of the average for the wider population.

Table 3. Participant's most Common Online Security Actions

Older adults' protective actions*	n	%
Use a pin or password on any or all devices	213	77.7
Regularly update the software	157	57.3
Use two factor or multi factor authentication on any or all accounts	118	43.1
Use unique passwords for every online service	117	42.7
Regularly back up the content	93	33.9
Use a password manager	62	22.6
Use a VPN if connecting to the Internet using a Wi-Fi network you don't know	48	17.5
None of these	10	3.6

Note: * n=274. Multiple-choice question.

On the other hand, when analyzing whether participants know where to report an online threat, the Chi-square test of independence found a significant association with gender, $\chi^2 (1, N = 227) = 4.34$, $p = .037$. The effect size for this finding, Cramer's V, was weak: .13. Male participants were more likely to say they know where to report an online risk than female participants. No significant association was found in terms of age, $\chi^2 (1, N = 227) = 3.42$, $p = .065$. Similarly, regarding disability status, the Chi-square test of independence did not reach significance, $\chi^2 (1, N = 219) = 0.095$, $p = .758$. See Table 4.

Table 4. Participants' Knowledge about Where to Report Online Threat by Gender, Age Group and Disability Status

	Know where to report online threat						<i>p</i>
					Total		
	Yes		No				
	n	%	n	%	n	%	
Gender							.037
Male	50	46.3	58	53.7	108	100.0	
Female	39	32.8	80	67.2	119	100.0	
Total	89	39.2	138	60.8	227	100.0	
Age group							.065
60-69	55	44.7	68	55.3	123	100.0	
70+	34	32.7	70	67.3	104	100.0	
Total	89	39.2	138	60.8	227	100.0	
Disability status							.758
With disability	20	37.0	34	63.0	54	100.0	
Without disability	65	39.4	100	60.6	165	100.0	
Total	85	38.8	134	61.2	219	100.0	

On the other hand, it was found that the level of concern about three of the six online risks mentioned was associated with participants' gender (Table 5). As can be seen by the frequencies cross-tabulated in Table 6, concern about online extremism was associated with gender, $\chi^2 (2, N = 269) = 9.44$, $p = .009$. However, the effect size for this finding, Cramer's V , was weak: .18. Female participants were more likely to be extremely/very concerned about online extremism than male participants. Moreover, a significant but small association was found between concerns regarding misleading information and gender, $\chi^2 (2, N = 268) = 8.17$, $p = .017$, $V = .17$. Female participants were slightly more concerned about misleading information on the internet than male participants. When looking at the results for hate speech and gender, the association was also significant but small, $\chi^2 (2, N = 269) = 7.49$, $p = .024$, $V = .16$. In contrast no significant differences were found in terms of gender and the concerns about cyberbullying, $\chi^2 (2, N = 271) = 5.95$, $p = .051$, identify theft, $\chi^2 (2, N = 275) = 2.88$, $p = .237$, and conspiracy theories, $\chi^2 (2, N = 269) = 0.281$, $p = .869$.

Table 5. Participants' Level of Concern about Different Online Risks by Gender

		Gender				Total		<i>p</i>
		Male		Female		n	%	
		n	%	n	%	n	%	
Cyberbullying	Extremely/very concerned	90	70.3	112	78.3	202	74.5	.051
	A little bit concerned	21	16.4	24	16.8	45	16.6	
	Not very/not at all concerned	17	13.3	7	4.9	24	8.9	
Online extremism	Extremely/very concerned	87	68.0	108	76.6	195	72.5	.009
	A little bit concerned	20	15.6	26	18.4	46	17.1	
	Not very/not at all concerned	21	16.4	7	5.0	28	10.4	
Identity theft	Extremely/very concerned	95	73.6	108	74.0	203	73.8	.237
	A little bit concerned	24	18.6	33	22.6	57	20.7	
	Not very/not at all concerned	10	7.8	5	5	15	5.5	
Misleading information	Extremely/very concerned	85	67.5	99	69.7	184	68.7	.017
	A little bit concerned	24	19.0	37	26.1	61	22.8	
	Not very/not at all concerned	17	13.5	6	4.2	23	8.6	
Conspiracy theories	Extremely/very concerned	83	64.8	95	67.4	178	66.2	.869
	A little bit concerned	27	21.1	29	20.6	56	20.8	
	Not very/not at all concerned	18	14.1	17	12.1	35	13.0	
Hate speech	Extremely/very concerned	86	68.8	117	81.3	203	75.5	.024
	A little bit concerned	24	19.2	21	14.6	45	16.7	
	Not very/not at all concerned	15	12.0	6	4.2	21	7.8	

The associations between levels of concern about each of the six online risks and age were also tested. The results show a significant but small association in terms of conspiracy theories and age, χ^2 (2, N = 269) = 6.87, p = .032, V = .16. Participants aged 70 and over were more likely to be extremely/very concerned about conspiracy theories compared to those aged 60-69. Regarding hate speech and age, the association was significant, χ^2 (2, N = 269) = 6.05, p = .049. The Cramer's V for this finding is a small .015. On the other hand, the differences between age and concerns about cyberbullying, χ^2 (2, N = 271) = 0.723, p = .697, online extremism, χ^2 (2, N = 269) = 4.86, p = .088, identify theft, χ^2 (2, N = 275) = 5.19, p = .075, and misleading information, χ^2 (2, N = 268) = 0.465, p = .793, did not reach statistical significance (Table 6).

Table 6. Participants' Level of Concern about Different Online Risks by Age Group

		Age group				Total		<i>p</i>
		60-69		70+				
		n	%	n	%	n	%	
Cyberbullying	Extremely/very concerned	103	73.0	99	76.2	202	74.5	.697
	A little bit concerned	26	18.4	19	14.6	45	16.6	
	Not very/not at all concerned	12	8.5	12	9.2	24	8.9	
Online extremism	Extremely/very concerned	92	66.7	103	78.6	195	72.5	.088
	A little bit concerned	29	21.0	17	13.0	46	17.1	
	Not very/not at all concerned	17	12.3	11	8.4	28	10.4	
Identity theft	Extremely/very concerned	106	73.6	97	74.0	203	73.8	.075
	A little bit concerned	34	23.6	23	17.6	57	20.7	
	Not very/not at all concerned	4	2.8	11	8.4	15	5.5	
Misleading information	Extremely/very concerned	96	68.1	88	69.3	184	68.7	.793
	A little bit concerned	34	24.1	27	21.3	61	22.8	
	Not very/not at all concerned	11	7.8	12	9.4	23	8.6	
Conspiracy theories	Extremely/very concerned	83	59.3	95	73.6	178	66.2	.032
	A little bit concerned	37	26.4	19	14.7	56	20.8	
	Not very/not at all concerned	20	14.3	15	11.6	35	13.0	
Hate speech	Extremely/very concerned	97	69.3	106	82.2	203	75.5	.049
	A little bit concerned	29	20.7	16	12.4	45	16.7	
	Not very/not at all concerned	14	10.0	7	5.4	21	7.8	

As can be seen in Table 7, the Chi-square test of independence showed no significant differences between the disability status of the participants and each of the six online risks. Disability was not associated with concerns about cyberbullying, $\chi^2 (2, N = 263) = 2.20, p = .333$, online extremism, $\chi^2 (2, N = 261) = 4.96, p = .084$, identity theft, $\chi^2 (2, N = 266) = 0.267, p = .875$, misleading information, $\chi^2 (2, N = 261) = 0.325, p = .850$, conspiracy theories, $\chi^2 (2, N = 261) = 1.95, p = .376$, and hate speech, $\chi^2 (2, N = 260) = 0.477, p = .788$.

Table 7. Participants' Level of Concern about Different Online Risks by Disability Status

		Disability status				Total		<i>p</i>
		With disability		Without disability		n	%	
		n	%	n	%			
Cyberbullying	Extremely/very concerned	50	80.6	145	72.1	195	74.1	.333
	A little bit concerned	9	14.5	36	17.9	45	17.1	
	Not very/not at all concerned	3	4.8	20	10.0	23	8.7	
Online extremism	Extremely/very concerned	46	74.2	142	71.4	188	72.0	.084
	A little bit concerned	6	9.7	39	19.6	45	17.2	
	Not very/not at all concerned	10	16.1	18	9.0	28	10.7	
Identity theft	Extremely/very concerned	48	76.2	148	72.9	196	73.7	.875
	A little bit concerned	12	19.0	44	21.7	56	21.1	
	Not very/not at all concerned	3	4.8	11	5.4	14	5.3	
Misleading information	Extremely/very concerned	41	68.3	137	68.2	178	68.2	.850
	A little bit concerned	13	21.7	48	23.9	61	23.4	
	Not very/not at all concerned	6	10.0	16	8.0	22	8.4	
Conspiracy theories	Extremely/very concerned	42	67.7	130	65.3	172	65.9	.376
	A little bit concerned	15	24.2	40	20.1	55	21.1	
	Not very/not at all concerned	5	8.1	29	14.6	34	13.0	
Hate speech	Extremely/very concerned	48	78.7	148	74.4	196	75.4	.788
	A little bit concerned	9	14.8	36	18.1	45	17.3	
	Not very/not at all concerned	4	6.6	15	7.5	19	7.3	

4. Discussion and Conclusions

The current study explored the attitudes and behaviors of older adults from New Zealand aged 60 years and older regarding different dimensions of cybersecurity and online safety. In addition to identifying general trends, the study also investigated whether each of these dimensions were associated with key demographics (i.e., gender, age group, and disability status). When looking at general trends, the results show that more than half of the older adults in our sample were concerned about the security of their personal information online. About 55% of older adults said they were extremely or very concerned while around 36% indicated being a little bit concerned about this matter. Similar trends have been reported in previous studies in the United States and New Zealand where

most older adults indicated being apprehensive about how secure their personal information was on the internet with some indication that these concerns are on the rise (Boise et al., 2013; Kakulla, 2021; Pacheco, 2024). As unauthorized access to personal information, information misuse, and/or lack of transparency in information collection are among the most pressing issues for older adults regarding online privacy and security (Elueze & Quan-Haase, 2018; Knight et al., 2022), they might explain the rates reported not only here but also overseas. Similarly, our results show that most older adults are extremely/very concerned about each of the six online risks examined (i.e., cyberbullying, online extremism, identity theft, misleading information, conspiracy theories, and hate speech) with rates ranging from 66.2% to 75.5%.

Additionally, due to concerns regarding cybersecurity, the majority of older adults in our sample discontinued their usage of an internet-based service in the prior year. Specifically, 65% of participants reported doing so. An explanation for this result might be found in prior qualitative studies which indicate that limiting or avoiding the use of online tools or services is a common mitigation approach among older adults (Feng et al., 2023; Frik et al., 2019). When it comes to the most common security actions to prevent online threats, adults aged 60 years and older apply different approaches. In line with Huang and Bashir (2018), participants in our study reported adopting a combination of protective actions on their own devices, with the most common being the use of a PIN or password, regular software update, multi-factor authentication, and a unique password for every online service. However, while this evidence is relevant to understand older adults' behaviors, our results only describe technical measures such as the use of software and technical tools to prevent unwanted online experiences. Older adults often prioritize the use of social resources (i.e., family and close friends) to deal with cybersecurity and online safety threats (Nicholson et al., 2019). Future research should investigate how prevalent and effective these social resources are in older adults' coping strategies and support-seeking behaviors. Similarly, another finding surprisingly shows that most older adults do not know where to report potentially harmful or concerning online content. In this respect, only 4 in 10 participants indicated they know what websites, organizations, and/or agencies they can use or go to when encountering this sort of online content. It is argued that older adults who show lower levels of knowledge and confidence regarding addressing online threats exhibit a lesser degree of engagement in security-related behaviors in comparison to their younger counterparts (Jiang et al., 2016). Despite the fact that older adults may indeed partake in certain safety measures (e.g., creating secure passwords, regularly updating their devices), there may be other actions that they are less inclined to take, such as securing their devices (Branley-Bell et al., 2022). The findings from the present study present a similar trend, indicating that the online safety and security behaviors of older adults constitute a complex issue that warrants further exploration.

From the general trends described above, it is evident that older adults express concern regarding risks on the internet. They are actively implementing certain measures to safeguard themselves against online threats; however, they encounter obstacles such as unfamiliarity with the appropriate channels to report potentially harmful online content. The empirical evidence derived from the present study demonstrates that older adults aged 60 years and above require prompt and focused assistance to enhance their confidence and skills, in order to make their online experience safer. Provision of

assistance is imperative due to older adults' increasing adoption of digital technologies, and the importance these tools gained among the older population, particularly since the COVID-19 pandemic. So far, interventions to prevent or mitigate online threats for older adults have focused on education and training programs as well as awareness raising. While evaluation of their efficacy is a pending task, online safety and cybersecurity interventions have traditionally overlooked the input of older adults during the development phase. In accordance with the suggestion made by Mannheim et al. (2019) regarding the involvement of older adults in technology design, a similar approach is required when creating support systems for older adults in the realm of online safety and cybersecurity. Including the voice of older adults in the design stage of support interventions can contribute a more profound comprehension of the challenges that affect them, their specific needs, and the appropriate measures that are more pertinent to their situation. Moreover, this approach can help create greater impact and effectiveness of these interventions (Mannheim et al., 2019).

On the other hand, regarding the role of key demographics, the current study has found some statistical differences suggesting older adults' heterogeneity regarding cybersecurity and online safety attitudes and behaviors. For instance, in terms of gender, older males (46.3%) were much more likely to say they know where to report potentially harmful content than older females (32.8%). Gender differences were also found regarding the levels of concern about online risks. In this respect, compared to older males, older females reported higher rates of concerns about hate speech, online extremism, and misleading information. Evidence about the link between gender and cybersecurity and online safety has traditionally centered on the general adult population. Despite some exceptions (Branley-Bell et al., 2022), this evidence has mostly found gender differences with females being more likely to have lower digital security skills and awareness than males (Alotaibi & Alshehri, 2020; Dodel & Mesch, 2018; McGill & Thompson, 2021). The analysis undertaken here about the role of gender provides a closer look at the cybersecurity and online safety attitudes and behaviors among older adults aged 60 years and older.

Similar to the preceding, studies on age differences in cybersecurity and online safety have primarily focused on the broader adult population (Branley-Bell et al., 2022; Dodel & Mesch, 2018). Nevertheless, the present study has made a noteworthy discovery: within the older adult cohort, there exist significant variations in age. In this respect, regarding online risks, the data uncovered higher levels of concern about conspiracy theories and hate speech among older adults aged 70 years and above compared to their 60–69-year-old counterparts. The differences were of 14 and 13 percentage points, respectively. Older adults aged 70 years and older were also slightly more concerned about the security of their personal information online than those aged between 60 and 69 years. It has been documented that older adults place more importance on the privacy and security of their personal information online than younger age groups (Kolimi et al., 2012). However, prior to the current study, evidence about how these attitudes differed within the older adult cohort was lacking.

The present study has argued about the inclusion of older adults in the design of online safety and security programs. However, it is important to note that these support interventions should also acknowledge the fact that the older adult group is diverse in nature. It is surprising that despite the

existence of online safety and cybersecurity interventions for a considerable time, the heterogeneity of older adults regarding experiences of online risks and threats has gone unnoticed. The findings of the present study complement the existing evidence regarding the varying online behaviors and attitudes of older adults in terms of internet access (Hargittai & Dobransky, 2017; van Deursen & Helsper, 2015). Recognizing the heterogeneity of older adults in terms of their online safety and cybersecurity attitudes and behaviors will aid in the development of interventions that are accessible and inclusive, cater to the needs of the target population, and are suitable for their intended purpose.

Finally, none of the dependent variables examined in the present study showed an association with disability status. While this relationship has not been well researched yet, the limited available evidence suggests that older adults with moderate cognitive impairment are more sensitive to online threats (Mentis et al., 2019). Our findings are somewhat surprising considering that older adults are more sensitive to online risks as their functioning declines (Lichtenberg et al., 2016). Further research on the role of disability in older adults' internet safety and security habits and attitudes would allow us to develop a higher level of accuracy in this matter.

4.1. Limitations

There were some limitations to the present study which future research could address. While this study managed to find some statistical associations between categorical variables, it does not mean these links explain causation. Furthermore, the probability of social desirability bias in participants' responses is another potential limitation. Due to the sensitive nature of the research topic, some participants might not have disclosed their personal experiences and views regarding online safety and security. Finally, as previously mentioned, we conducted secondary data analysis of the New Zealand's Internet insights Survey. Thus, another limitation is that our analysis and interpretation of the data was restricted to the original design of the survey tool. For instance, while the survey gathered evidence about how concerned participants are about online risks, it did not ask participants, whether they were personally targeted by any of them, how frequently they happened, and what was the emotional impact, if any. Gathering data about these and other variables in subsequent research will improve the understanding of older adults' online safety and security behaviors and attitudes.

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Critical Thinking and Transilience: Possible Answers to Invisible Poverty

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Abstract

The contemporary era is characterised by a plethora of paradoxical phenomena, which are readily discernible through a critical gaze. Although individuals have access to an unlimited quantity of content, the speed at which they are created impairs its effective comprehension. Despite the public intention of digital platforms and social networks to facilitate the democratisation of knowledge among users, they frequently result in the proliferation of disinformation and the fragmentation of content. This has a particularly adverse impact on the most vulnerable social groups, who often lack the requisite interpretative, analytical and contextualising skills. The cultivation of critical thinking and transilience are educational commitments of the present era. They are essential for the assessment of information reliability and the enabling of autonomous and aware participation in democratic processes. The current abundance of information has accentuated cultural poverty, particularly among social groups that are already subject to invisible forms of poverty. This is because the high information flow has deprived these groups of the importance of recognizing the value of information. Through an analysis of the aforementioned issues, the theoretical contribution presents the necessity to equip citizens with cognitive and digital tools to orient themselves in the digital swarm.

Keywords *transilience - critical thinking - invisible poverty – digital platform – disinformation*

1. Introduction

In recent decades, digital transformation has had a profound impact on the ways in which people access information and construct knowledge. As philosopher Byung-Chul Han notes, the contemporary era is distinguished by the phenomenon of the infocracy, characterised by a constant and overwhelming of data flow that impairs the capacity for critical judgement (Han, 2017). This flood of information has significant implications for pedagogy and social interaction.

The apparent democratisation of information allows for the retrieval of content of all kinds via increasingly sophisticated search engines. The ability to select and discriminate between relevant and objective information is becoming increasingly challenging in the context of the vast amount of data available. The consequence is the navigation of an expansive digital landscape, where the possibility of being overwhelmed by misleading or completely erroneous content is not always readily apparent. This poses a risk to “social freedom and communicative action within the framework of the minimum justice necessary to ensure the honesty of communication” (Honneth, 2015, p. XXVIII). While the

necessity for verification of information placed on the web is clear, the question of how to choose among the information available is a more complex challenge. *“The emergence of a knowledge ecosystem is always tied to the concrete possibility of accessing and spreading information/knowledge (primary needs). In the so-called Knowledge Society, the criteria of hierarchy in accessing information are tested every day, and culturally weakened by the new spirit of the information age”* (Dominici, 2015, p. 93). In the present context, the deficit of comprehension and analysis skills is indicative of a broader crisis that simultaneously affects the educational, economic and social spheres. The acknowledgement of human and cultural capital is crucial for the comprehensive advancement of individual and collective freedoms. In the absence of such recognition, the likelihood of heightened inequality and a diminution of essential critical capabilities increases (Di Bari, 2020; Honnet, 2015). This cultural gap, which frequently manifests as limited linguistic proficiency and interpretative difficulties, also creates a disadvantage in everyday dynamics, resulting in barriers to communication and active participation in community life (Rosati & Renzi, 2024a).

Following on from recent studies that have analysed the relationship between educational poverty and invisible poverty, the article explores the impact of critical thinking and transilience on breaking the spiral of poverty and informational and educational exclusion. The latter is not confined to material circumstances, as in the socio-economic perspective, but rather constitutes a cultural poverty that manifests as an inability to comprehend signs, symbols, words and languages. This distinction becomes a discriminating factor between those who participate in the life of the community and those who remain excluded due to their lack of the intellectual capabilities to discern information. The article therefore discusses the risk of a vicious circle being created that will feed, through multifactorial poverty, the exclusion of people from society. The metamorphosis and faces of poverty, the importance of transilience and critical thinking in the active participation of citizens in society, with a reference to the European framework in the context of the crisis, will be discussed.

In this context, it becomes crucial to question which critical and cognitive skills should be developed in order to enable citizens to navigate the contemporary digital context with awareness, but not only. As Nussbaum (2010) suggests, an education that merely transmits information without fostering critical thinking may result in the production of emotional and democratic illiteracy. The lack of critical thinking tools, according to a 2018 study by the Massachusetts Institute of Technology (MIT), encourages an increased speed in the spread of fake news thanks to the cascades of digital influence networks (Dizikes, 2018). If language is homothetic to reality (Wittgenstein, 2009), then it is necessary to consider what kind of reality is being produced and, above all, what implications this double binary linked to the looming cultural poverty will have. In particular, it is important to reflect on what episteme, and therefore what power (Foucault, 2014, 2016), is being constituted?

2. Metamorphosis or faces of poverty?

A combination of factors, including a lack of investment, inadequate measures, social inattention, and indifference, contribute to the perpetuation of processes of generalised and widespread

impoverishment that have a detrimental impact on individuals across the lifespan and in diverse geographical locations. According to the World Bank Group (2024), 692 million individuals worldwide are living in extreme poverty. In countries such as Italy, absolute poverty affects approximately 9% of the population, representing a slight increase compared to previous years. This increase is primarily concentrated in the southern regions of the country, with a notable presence also observed in the northern regions. The phenomenon is becoming increasingly prevalent, with the highest levels of poverty currently observed since 2014. The most recent reports from Istat (2024a), Caritas (2023) and Save the Children (2023) describe a situation that contributes to the socio-economic, family and personal disadvantage of individuals - of different ages - exposed to marginality and precariousness. The fragility of living conditions is becoming increasingly prevalent among minors, and is not primarily characterised by a lack of employment opportunities for parents, but rather by the general inadequacy of family income in comparison to the costs of living. The phenomenon of the working poor, defined as an income below the threshold calculated with reference to the national income (Istat, 2024b; Caritas, 2023), represents an aspect that should be taken into account above all in terms of social and welfare policies. However, poverty is not solely contingent on income; it is not confined to material deprivation, job loss, or precariousness, and conditions of disadvantage. Rather, it also pertains to educational pathways that can, to some extent, shield individuals from the risk of poverty (Caritas, 2023). Indeed, there appears to be a markedly strong correlation between those with low educational qualifications and those who have benefited from educational opportunities. To overcome social exclusion, it is necessary to increase and support individuals in their educational pathways. In this regard, European policies have identified the low level of schooling as a key factor contributing to social exclusion. The cultural background, along with the study and work experience of parents, appears to be a significant determinant of social success or failure (Caritas, 2022). This is also confirmed by quantitative studies carried out in countries that we often consider to be advanced, such as Italy, where 33.9% of children under 16 whose parents have at most a secondary school qualification are in a state of social and material deprivation: more than ten times more than their peers (3%) with at least one parent with a university degree (ISTAT, 2023). In other words, the educational level of the family of origin determines the educational and inclusive path of the children, and the intergenerational chain appears to be unbroken and uninterrupted. Furthermore, it can be argued that the interconnection between material and educational poverty gives rise to a vicious circle that is challenging to break. However, there is a possibility that this is not the case and that it would be beneficial to consider alternative perspectives. It would be erroneous to assume that the forms of structural poverty that mark experiences and stories of human life are the sole determining factor. The perspective from which problems are viewed is the foundation for the interpretations that inform subsequent measures and interventions. As Ulrich Beck (2024) suggests, we might also consider a metamorphosis of the poverty phenomenon. While data and statistics provide clear evidence of the reality of poverty, the way in which this problem is perceived allows for further considerations to be outlined. If we understand the meaning of metamorphosis in its nature, we can also identify the “*positive side effects of evils*” (Beck, 2024, p.6). The impact of structural poverty on individuals and their everyday lives is well documented (de Greef, Verté & Segers, 2014). However, in order to fully comprehend the impact

of poverty, it is necessary to consider its underlying effects. But a further step is needed to understand the hidden effects of poverty. This is why the hypothesis of approaching the problem of poverty through the lens of metamorphosis cannot be discarded a priori. Beck makes this clear when he highlights the conceptual difference between change and metamorphosis. The first attests to the persistence of certain elements in transformative processes; the latter, on the other hand, allows us to describe a more radical condition of passage and transformation that, in order to be understood, also requires a new sensitivity, a form of hermeneutic intelligence necessary to grasp what is new and unexpected that may emerge.

In the context of the current, tumultuous era (Beck, 2024) to speak of metamorphosis is to take note of the new visions that are bursting into the present. The objective is to gain perspectives that will facilitate change and the reversal of current trends. This does not entail the negation of the existence of poverty; rather, it entails the adoption of a stance that allows for the emergence of alternative perspectives, particularly from a cultural perspective. In light of the phenomenon of poverty, it is pertinent to inquire whether it is prudent to commence with the concept of cultural poverty in order to ascertain whether this, rather than being a consequence of an economic condition, could serve as a point of departure for a meticulous assessment. Looking at poverty in this way, it could be argued that material poverty is a manifestation of inherent cultural poverty. This, therefore, necessitates an examination of the role of culture in this process, with a subsequent evaluation of the effects at the economic level (structural poverty and relative poverty), rather than vice versa. This is the perspective that we intend to adopt in order to provide an explanation of poverty. To clarify this perspective, it may be useful to reflect on what we call invisible poverty.

3. Critical thinking and transilience as responses to social complexity

In the contemporary era, characterized by a proliferation of information and a concomitant increase in complexity, the capacity for critical thinking and transilience represents a crucial means of safeguarding individual autonomy and the ability to navigate a fractured reality.

Matthew Lipman defines critical thinking as a reflective, reasonable and purposive cognitive process through which the individual arrives at informed decisions about what to believe and how to act (Lipman, 2003). In the view of the American philosopher, critical thinking is an intentional mode of thought, characterized by accuracy and autonomy. This implies a rigorous and conscious evaluation of the available information and arguments, which may be described as a true cognitive responsibility (Lipman, 2005). This process does not conclude with mere problem-solving; rather, it necessitates comprehensive reflection on the rationale and implications of statements and decisions. In this manner, it cultivates an inclination towards open-mindedness and critical analysis, thereby fostering the capacity for individuals to engage actively and responsibly in social and political life.

Critical thinking, especially for a generation immersed in a high flow of information (Paul & Elder, 2006; Floridi, 2017), involves recognising one's own beliefs and prejudices, analysing the implications and consequences of information, and rigorously evaluating sources. For Dominici (2023), this capacity is indispensable to counter the superficiality and manipulation that characterize the hyper-

connected public sphere, where the quality of information is often sacrificed to speed and quantity. In the context of an overwhelming abundance of information, critical thinking enables individuals to navigate the digital landscape and resist the fragmentation and ephemerality that characterize contemporary culture, as described by Byung-Chul Han (2015) as the “digital swarm”. From this perspective, critical thinking is a fundamental aspect of an individual's development as an autonomous and responsible subject, able to cope with the intricacies of real-life scenarios and to make well-informed and ethically sound decisions. The capacity to analyze and evaluate information, content and sources in a reflective and autonomous manner assumes great importance.

The second element of discussion is transilience, as previously stated. The concept of transilience is a relatively recent and still developing one. It can be understood as the ability to continuously adapt and transform in the face of changing and complex contexts (Uhl-Bien & Arena, 2018; Lozano Nasi, Jans & Steg, 2023). Transilience is not merely resilience in the face of uncertainty; it encompasses the capacity to learn from uncertainty, to develop new competencies, and to transcend previous constraints in order to adapt to evolving circumstances. In this sense, transilience is not merely about enduring or absorbing difficulties; rather, it is about moving towards innovation and the co-creation of new solutions. In essence, the concept of transilience can be defined as the capacity to apply acquired knowledge or experience in a context that differs from the one in which it was originally acquired. This kind of application of prior knowledge in a new context can facilitate adaptation to new challenges or problem solving in unexpected domains, thus representing a kind of transformation or re-use of skills for different situations. In this case, transilience is not limited to enduring or adapting to difficult circumstances, but also implies the ability to transfer resources, experiences or skills from one domain to another, demonstrating cognitive flexibility. This can be particularly useful in professional or educational contexts, or in situations where one has to deal with rapid or unexpected change. And in the light of this reading of the term, we can reinforce the centrality of continuous education and training as indispensable conditions for personal and societal development.

Thus, if lifelong learning and flexibility become central to dealing with an environment in which emerging dynamics are unpredictable, the creation of contexts that foster collective learning and flexibility (Manca, 2021; Rosati, Renzi & Ponzo, 2024) seems inevitable. Educating for complexity means equipping people not only with technical skills, but also with tools to face and navigate uncertain contexts. Social complexity (Dominici, 2023a), which involves us and at the same time eludes us, requires “a reformulation of thinking and a redefinition of knowledge that should contribute precisely to reducing this complexity”. (Dominici, 2023a, p. 159).

Education must therefore encourage critical thinking, the capacity to collaborate in interconnected environments and adaptability in the face of new challenges. These are essential elements in fostering transilience, or the ability to evolve continuously. In this regard, the contribution of Byung-Chul Han is particularly illuminating. In his 2015 work, “In the Swarm”, Han examines the transformation of the individual into an indistinct network node, devoid of identity and narrative, characterized by compulsive and thoughtless communication. This “mass without coherence”, which is referred to as a digital swarm, fragments perception and reduces the ability to concentrate, thus

limiting the development of a critical consciousness. As Han (2024) observes, the proliferation of information devoid of a coherent narrative structure gives rise to a culture of the ephemeral, in which the pursuit of meaning and depth is continually superseded by the imperative for speed and immediate access. Narrative, understood as the structure that gives meaning and cohesion to knowledge, is gradually being eroded, leaving room for a mere summation of data.

However, the hyperconnectedness and overabundance of information, which theoretically should promote a democratization of knowledge, produce ambivalent effects. Dominici (2023a) highlights that the vast quantity of information, rather than enhancing understanding, may foster confusion and misinformation, particularly among the most vulnerable social groups, who are already susceptible to invisible poverty. While digital platforms and social networks facilitate access to knowledge, they also fragment content and impede the critical capacity of users, thereby exacerbating existing inequalities.

“In the hyper-technological society of knowledge, inequality and asymmetry are paradoxically increasing. We find ourselves in the throes of an ongoing anthropological transformation brought about by the extraordinary scientific discoveries and technological inventions of recent decades, in a desperate need to maintain the human factor, to strengthen rather than weaken social ties, and to preserve democracy in the face of what could easily become a surveillance Panopticon” (Dominici, 2023b, p. 23).

In this context, Martha Nussbaum's capabilities approach provides a valuable framework for rethinking education and human development. In her 2011 work, Nussbaum defines capabilities, or capacities, as the concrete possibilities an individual has to live a full and autonomous life, exercising their potential through informed and conscious choices. In her model, which combines ethical and social aspects, the freedom to develop capabilities such as critical thinking and emotional reflection is identified as a fundamental aspect of human fulfilment. Arendt's (2009) description of critical thinking as a form of resistance to passivity and conformity, and as a judgement skill that protects the individual from uncritical acceptance of imposed norms, provides a helpful framework for understanding this concept. For Arendt, critical thinking represents an act of self-preservation and collective protection, preventing the “banal evil” of irresponsibility. In an era of social complexity, this attitude proves to be a valuable resource for navigating fragmentation and uncertainty without becoming mired in ideologies or imposed narratives. Critical thinking and transilience are therefore an urgent response to “cultural poverty, lexical deficiency, difficulties in understanding, [...] elements that create situations of disadvantage even in everyday life, that is, in community life” (Rosati & Renzi, 2024b) and the illusion of total management by technology. Dominici (2023a) argues the necessity of educating on complexity, emphasising the significance of an epistemological re-evaluation of thought processes and an appreciation of error and uncertainty as indispensable instruments for learning. Inhabiting complexity thus implies the adoption of a culture of error and a revised epistemology, since it is only through the acceptance of indeterminacy that it is possible to educate citizens capable of participating consciously and actively in democratic life. The current educational challenge, therefore, is to construct an educational pathway that cultivates critical discernment and enables the development of transilience, which are essential elements for coping with a hypercomplex social reality. Inhabiting complexity entails acknowledging limitations and embracing interdependence, as

well as embracing a non-mechanistic perspective of reality. This necessitates enabling educators and teachers to facilitate critical thinking. As transilience is a deliberate process of adaptation, critical thinking enables individuals to navigate complex situations without succumbing to their inherent contradictions, while simultaneously maintaining an authentic connection with their own identity and the external environment. In conclusion, critical thinking and transilience can be regarded as attractors for personal and collective growth in the context of social complexity. These concepts represent an optimal state of being towards which the individual tends, not as a fixed condition, but as an ongoing process of inquiry, adaptation, and transformation. Such processes facilitate not only a more profound comprehension of reality, but also contribute to the development of a more conscious and just future. The challenge of complexity therefore requires not only the capacity to engage with complex ideas in a critical and informed manner, but also the ability to engage in self-reflection and to interact with reality in a responsible and constructive manner.

4. A European framework on risks and access to society

In recent years, has been a notable advancement in the manner in which humans interact with and navigate the flow of information, which serves to facilitate transitions between different life contexts. The advancement of communication and information through digital networks undoubtedly fosters the formation of a more interconnected and relational society. However, the ideal of a virtual society, in which knowledge is a text woven from different threads, presupposes the competence of the many information prosumers and the ethics of their management. The large number of content producers has revolutionised the possibilities of communication, facilitating the instantaneous exchange of information on a global scale. The demand for knowledge drives production itself, while consumer interest directs and steers the focus of information channels (Bentivegna & Boccia Artieri, 2019). The centrality of the digital in today's society is not only connected to the sphere of information; it is also, and above all, indispensable to the maintenance of democracy. The capacity for participants to share ideas and collectively construct knowledge and their society has constituted a revolutionary phenomenon that has engendered changes at multiple levels. The close relationship between technology, the individual and society (Rivoltella, 2019) has resulted in changes to the flow of information within communities, thereby also transforming the way in which communities themselves and their members are formed. In this context, it is becoming increasingly important to implement joint actions that address the software and application structures, the skills of the individual and the norms of society. This is the direction in which the OECD report "Facts not Fakes" (OECD, 2024) is heading, with the objective of achieving transparency and plurality of information sources, resilience of their users and the implementation of improved governance measures. It is imperative to engage in multifaceted actions to safeguard the users of content and their autonomy in producing it, to empower them as active social members capable of advocating for their own causes and intentions. In the contemporary era, it has become increasingly prevalent to encounter a plethora of information, a considerable portion of which is comprised of misinformation and fake news. A Eurobarometer study conducted by the European Commission (2022a) revealed that approximately 70% of the 26,696

respondents encountered news items they deemed to be false or misrepresentative. This phenomenon is not a recent development and it has been subjected to rigorous scrutiny over the past decade. A further survey indicated that approximately one-third (32%) of Europeans do not believe they have access to a reliable digital environment (European Commission, 2023). This, in conjunction with the growing utilisation of online platforms for geopolitical purposes, led the European Council in 2015 to acknowledge the threat posed by online disinformation campaigns (European Commission, 2018), with the objective of fostering awareness and developing more effective strategies for responding to cyber incidents. Furthermore, the proliferation of these phenomena is a cause for concern, particularly in light of the potential risks they pose to the cybersecurity and stability of EU countries. Between July 2022 and June 2023, over 2,500 recorded cyber incidents affected EU countries, as reported by the European Network and Information Security Agency (ENISA, 2023). Such incidents frequently coincide with significant events in democratic systems, eroding public trust and the credibility of established institutions (Schneider, 2020; OECD, 2023; Rosati & Renzi, 2024b). The link between this factor and the aggressive commercial profiling around the data economy, which also aims to discredit reliable sources of information, is now apparent (Carlsson, 2019). In this regard, studies have been conducted with the objective of enhancing comprehension of the phenomenon and impact of fake news, with a view to reducing the vulnerability of public institutions while safeguarding civic space (OECD, 2024). The proliferation of information, whether deliberate or inadvertent (Wardle & Derakhshan, 2017), impairs and restricts the avenues for accessing information, engendering growing disparities for those in "*information poverty*" and "*information malnutrition*" (Carlsson, 2019). This shifts the focus of access to knowledge from the digital divide to a deeper level of cultural divide (Dominici, 2017). In this sense, it becomes evident that the promotion of digital literacy and the tackling of misinformation at the earliest possible stage of an individual's education is of paramount importance. This is not merely a matter of acquiring the necessary skills for the future, but rather a necessity of the present, if one is to be able to participate fully in the democratic process. The contemporary digital divide (Van Deursen, Helsper, Eynon & Van Dijk, 2017) is realised in the different ways people navigate the information flows of the web. Just as in education it's not enough to put a book in someone's hands, it's not enough to create online communities and declare that access is equal for all. For access to be real and effective, people need to be equipped with the skills to find and use the resources available in a useful way. (Hargittai, 2002; Maurizio, 2024). It is therefore increasingly important to educate and empower citizens to exercise their rights, thus removing an obstacle to social inclusion. The digital should be considered "an achievement of the mind, an enrichment of the individual's baggage" (Alberti, 2021, p. 54). Schools are among the first institutions to be tasked with promoting change. They are encouraged to develop technical and critical digital literacy skills, thereby fostering greater awareness of the potential influence of the internet. However, teachers often find it difficult to "*create learning spaces in classrooms and schools where students can engage with the topics of digital literacy and disinformation*" (European Commission, 2022b, p. 9). This is due to the paucity of technical resources and a lack of mutual trust when discussing topics on which there is often a significant age-related discrepancy in opinion. Moreover, although the training of teachers is often crucial they are

frequently left to their own devices, thus impeding the spread of better abilities and skills to access information and to evaluate it critically. In this regard, the European Commission recommended in 2023 that digital competences should also be promoted through non-formal and informal learning and youth work, with a focus on critical thinking (European Commission, 2023). This approach not only provides an alternative avenue for learning, but also facilitates the dissemination of the understanding that life experiences are a crucial element in the educational process. It can be reasonably argued that “*are a useful proxy, life-long and life-wide learning beyond formal schooling*” (OECD, 2024, p. 68). This frequently results in the lack of significance and visibility, which consequently deprives a considerable proportion of the population the chance to develop and engage with other contexts (Rosati & Renzi, 2024b).

It is therefore evident that students and citizens must be furnished with the requisite tools to “identify reliable signals in the midst of so much noise. Metacognitive skills include an awareness of one’s own ability and the level of difficulty of the information challenges we face” (OECD, 2024, p. 68). Furthermore, in addition to responding to an explicit request from students, of whom over 40% believe that topics such as critical thinking, the media and democracy should be addressed more frequently in an educational setting (European Commission, 2020), this necessity also arises from a multitude of projects and studies (UNESCO, 2021; OECD, 2023). These studies, conducted across a range of cultural contexts, highlight the importance of promoting media and information literacy, which encourages creativity and critical thinking, and is vital for navigating the challenges of information overload. It is only through this approach that the root of the issue can be addressed, rather than merely treating the symptoms, such as disinformation (Carlsson, 2019), which control bodies are often reluctant to address. It is, therefore, imperative that action is taken at multiple levels to prevent the digital, as a knowledge tool, from creating further asymmetries, which could result in the emergence of a new category of digital oppressed (Ceretti & Ravanelli, 2017). It is of the utmost importance to ensure that social groups are not excluded from the emancipatory opportunities afforded by the network, and that they are not merely participating in a simulation of such opportunities. This is a crucial aspect of the self-determination of individuals whose awareness of their own possibilities is today often limited.

5. Invisible and silent poverty

How can full participation in the inclusive and social processes of complex societies be promoted? Many interventions have been made in this direction. With an educational perspective, socio-cultural promotion activities have been promoted through the creation of meeting places and spaces for young people and adolescents. Listening desks and moments of sharing have also been created to allow students, with the support of experts, to network and find opportunities for emancipative confrontation (think of narrative practices, autobiography, focus groups, role plays and read aloud practices). Initiatives aimed at reducing the negative socio-cultural effects of poverty have also been activated by volunteers working in listening centres, such as those of Caritas Italy, who are also active in peer to

peer activities. As the Caritas report notes, the age of the adults who turn to these centres is quite low. In 20.1% of the cases they were between 18 and 34 years old and in 34.5% between 35 and 44 years old (Caritas, 2023). Animation centers, oratories and spaces of associative life are the tiles of an intense movement that aims to give a concrete perspective to the meaning of education (Whitehead, 2022), in the conviction that culture is first and foremost "activity of thinking and receptivity to beauty and human feelings" (Ibidem, p.1). The aim to be pursued, therefore, is to broaden people's involvement and participation in community life. Recognizing this priority means acting to transform society and to be somehow "more aware of what it means to be human" (Savater, 2014, p.64).

In official documents terms such as proximity, gaze, accompaniment, service, protection, listening, participation recur in the documents (Caritas, 2023; World Bank Group, 2023), almost as if to emphasise how the unified perspective that characterizes the relational dimension is the answer to the problem of poverty/social exclusion. What is needed, then, is an intelligent device with which it is possible, not so much to speak on behalf of others, but "to arrive together with others at an understanding of how to preserve the different modes - of existence - [...], to manage to respect each other without trying to overwhelm each other" (Latour, 2024, p.78). This is only possible if people are given the opportunity not only to participate with choices and decisions, but also to express themselves through language. It is the possession and the ability to use the word that creates differences, remember Don Milani and Paulo Freire. But the word, capable of affirming individual identity, tends to be replaced by narratives, which take on value in terms of persistence and continuity, both online and offline (Sisto, 2024). In this "human-biology-artefact hybridization" (Benasayag, 2022, p.18), people are deprived of body, soul and words; the deepest and most suffered dimensions of human existence are also erased: old age and death, characteristics of the uniqueness that emerges in the possibility of conversation. To talk about everything with everyone (Boncinelli, 2022): this is true wealth. A wealth that defies poverty because it uses words, it knows how to converse and makes conversation possible, it constructs representations and makes communication possible through language.

6. Conclusion

The paper has tried to highlight the importance of a theoretical key, with strong references to the current Italian and European social context, which analyses poverty as a complex and multidimensional phenomenon, rooted in the interdependence between economic, cultural and social factors. It is clear, however, that any attempt to synthesise the multiple aspects that characterise our times misses the underlying nature of the problem and runs the risk of neglecting certain issues that, because of their importance, deserve greater attention. It is not just a question of analysing material poverty, but of understanding how it is intertwined with an even more pervasive and subtle information poverty. Such poverty, defined for this reason as invisible, hinders access to tools for understanding and transforming reality and has deep cultural roots, of which disinformation is only one aspect.

The dimension in which intellectual forces and resources must be invested is that of education, capable of bringing about a true metamorphosis of the person. A change is therefore required in the educational systems, in the content and methods, involving students and teachers, starting from the possibilities (European Parliament, 2023) of the Recovery and Resilience Facility (RRF). Indeed, there is a strong conviction that fostering critical and transient skills is the answer to many problems that highlight the link between cultural and economic factors. Reading the complexity of today's networks and society requires transversal skills that, like transilience, allow the value of knowledge to be extended and applied to unforeseen and unpredictable situations. In this sense, future studies should analyse the transformative and generative value of transilience in school and life contexts.

In a context dominated by speed and fragmentation, this critical capacity seems increasingly threatened by the culture of the ephemeral and the overabundance of information, which create confusion and reduce the time for conscious reflection. In this key, time becomes not only a resource but also a dimension for educational and cultural growth. Developing time literacy means knowing how to slow down, observe and reflect, resisting the temptation of immediacy. It means rethinking traditional learning processes and modes of social interaction in order to bring out an interdisciplinary approach that promotes the encounter between individual and collective dimensions and stimulates an integrated understanding of reality. The mastery and updating of digital skills are essential for the citizens of today and tomorrow (IDMO, 2023), as "we need intelligences refined by science and culture in all their forms and potentials, so that we can interact meaningfully with the mass of information and meanings with which we come into contact on a daily basis, without being overwhelmed and enslaved by them" (Alberti, 2021, pp. 71-72).

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