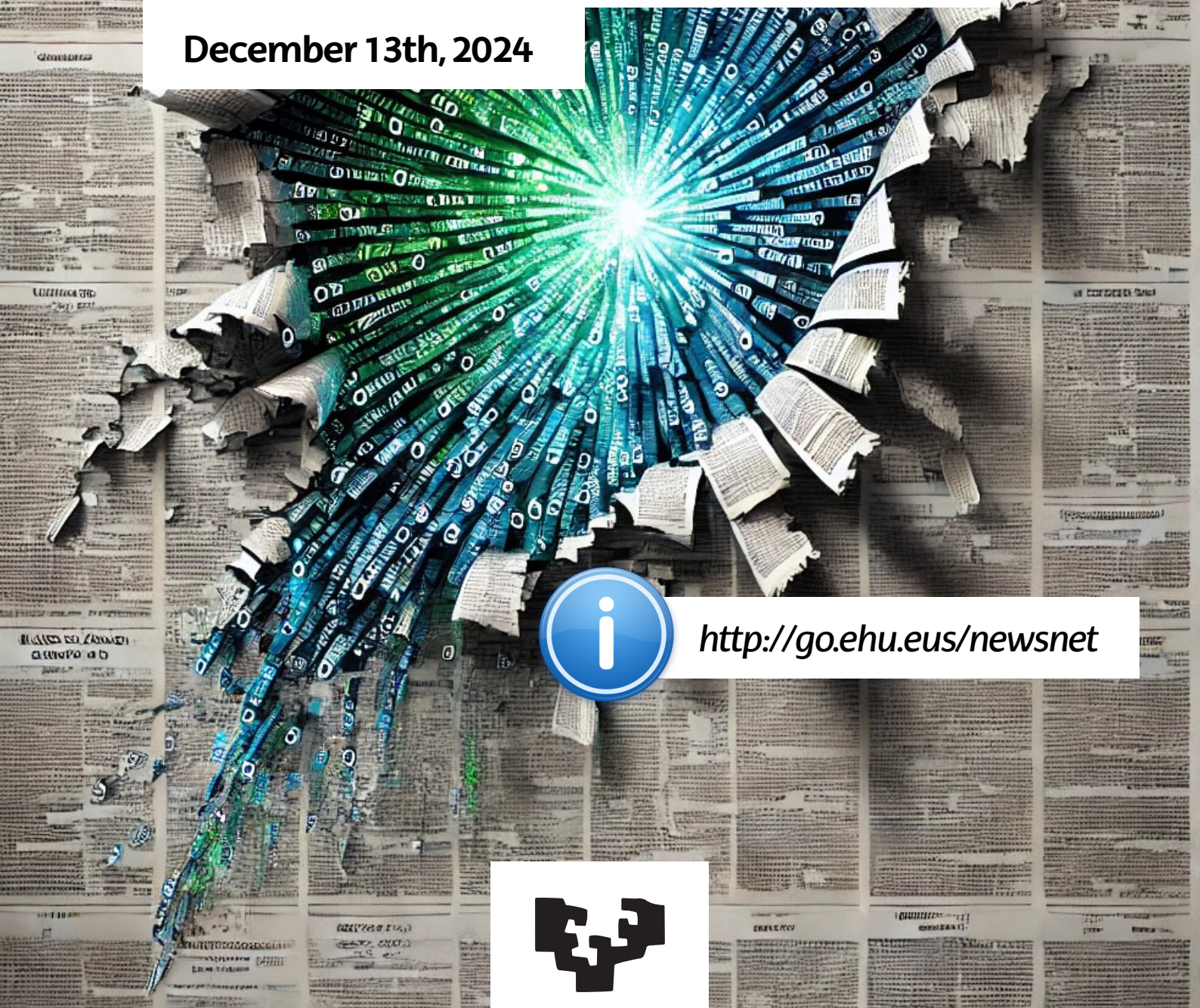
Newsnet #5

The Impact of Artificial Intelligence on Social Communication

December 13th, 2024



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Newsnet #5 (Bilbao, December 13th, 2024)

The Impact of Artificial Intelligence on Social Communication

Newsnet #5 Seminar Report

Simón Peña-Fernández
Koldobika Meso-Ayerdi
Ainara Larrondo-Ureta

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PREFACE

The expansion of generative artificial intelligence has transformed the way information is produced and circulated, raising pressing questions about its impact on truthfulness, authorship, and informational responsibility. In this new landscape, disinformation is taking on increasingly sophisticated and harder-to-detect forms, making its study an urgent task in understanding the balance between technology, power, and public knowledge.

In this context, the Newsnet #5 seminar took place at the University of the Basque Country (UPV/EHU) on December 13, 2024 and sought to find answers to understand the impact that the incorporation of artificial intelligence will have in the media, particularly in aspects such as misinformation or the impact on journalists and their audiences.

This event is organised as part of the activities carried out within the framework of the projects *Impact of artificial intelligence and algorithms on online media, journalists and audien*ces (PID2022-138391OB-I00) and *Automated counter narratives against misinformation and hate speech for journalists and social media* (TED2021-130810B-C22).

These projects, funded by the Spanish Ministry of Science, Innovation and Universities, aim to analyse how misinformation spreads and how the media seek to counter it, as well as to assess the impact of artificial intelligence implementation, particularly in its social dimension.

This volume is structured in two main sections that are in dialogue with one another. The first examines how artificial intelligence is becoming embedded at the core of communication and journalism, reshaping the ways in which information is produced, distributed and received. Through various studies, it explores processes of automation, and the tensions that arise between technological innovation and the principles underpinning journalistic practice. It also addresses the ethical, legal and social challenges that accompany this transition.

The second section broadens the focus to other forms of digital communication. It brings together research that investigates how social media and new expressive formats are redefining the relationships between media and their audiences. These contributions allow for the situating of artificial intelligence within a wider ecosystem, where technology, culture and everyday life intersect.

Taken together, the chapters in this volume provide a broad and detailed picture of the challenges and possibilities that artificial intelligence brings to the field of social communication. They aim to encourage critical thinking about how these technologies are shaping public debate and the role of journalism in today's digital environment.

The editors wish to express their gratitude to the authors of the contributions, as well as to all the individuals and institutions whose support has made these projects possible.

Simón Peña-Fernández
Koldobika Meso-Ayerdi
Ainara Larrondo-Ureta
Editors

ARTIFICIAL INTELLIGENCE IN JOURNALISM AND COMMUNICATION

AI TO EMPOWER MEDIA AND DEMOCRACY IN THE GLOBAL SOUTH: A CRITICAL REFLECTION

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INTRODUCTION

Artificial Intelligence (AI) is reshaping the global media landscape (de-Lima-Santos & Ceron, 2021). In the Global South—regions often characterized by economic limitations, political instability, and infrastructural challenges (Dados & Connell, 2012)—this transformation presents both unprecedented opportunities and serious risks. This essay, based on the presentation "AI to Empower Media and Democracy in the Global South" at the University of the Basque Country (UPV/EHU), provides an overview of AI use in Global South news outlets. It highlights how these organizations navigate pressing challenges like digital inequality, media freedom constraints, institutional isomorphism, and the tension between innovation and responsible adoption. This essay critically reflects on these key themes, contextualizing them within the Global South's broader socio-political realities and the scholarly discourse on AI in news media.

THE GLOBAL SOUTH CONTEXT: A COMPLEX LANDSCAPE

This discussion is grounded in the complex realities of the Global South, comprising countries historically facing systemic marginalization in global economic and technological developments. Media systems in these regions frequently operate amid limited press freedom, widespread corruption, and insufficient access to technological resources (Freije, 2021). These conditions

impede journalism's essential democratic functions, including holding power accountable. Freedom of expression is often undermined by authoritarian regimes and weak legal frameworks, making investigative journalism particularly challenging. Corruption exacerbates these issues by limiting journalistic independence and making investigative reporting dangerous (Cheas, 2025). Furthermore, limited access to high-quality data complicates the implementation of data journalism and advanced technologies like AI (Gondwe, 2023).

Despite these hurdles, AI's potential to enhance the watchdog role of journalism remains significant (Coeckelbergh, 2024). AI tools can assist in processing large datasets, identifying corruption patterns, and revealing hidden power networks. However, such applications must be designed and deployed with sensitivity to local conditions and democratic values to avoid amplifying existing inequalities, a risk discussed throughout this essay.

TECHNOLOGICAL INNOVATION AND MEDIA: BETWEEN HYPE AND HESITANCY

Technological innovation is often presented as a solution for media crises, yet it brings both promise and peril. While advancements offer new possibilities for journalistic creativity and efficiency, such as audience-led innovation and newsroom automation, they often unfold disconnected from the socio-ethical realities of the regions where they are implemented (de-Lima-Santos et al., 2023).

The news industry typically adopts technology cautiously, favoring incremental innovation. This approach, sometimes called the "Yes, But Syndrome," stems from financial constraints and ethical concerns about editorial independence and potential bias. This conservatism, rooted in economic limitations and risk aversion, hinders media organizations from fully harnessing new technologies for the public good (Paulussen, 2016).

Responsible Innovation emerges as a crucial guiding principle. Defined as a transparent, interactive process aligning technological development with ethical acceptability and social desirability (Stilgoe et al., 2013), it necessitates collaboration between media practitioners, technologists, and civil society. Journalistic innovation should thus focus not just on digital tools but also prioritize inclusivity, sustainability, and context-awareness (de-Lima-Santos & Jamil, 2024).

THE DIGITAL DIVIDE AND AI INEQUALITY

A fundamental barrier to AI adoption in the Global South is the persistent digital divide. Disparities in access to digital infrastructure, skills, and capital create uneven opportunities for media organizations. While Global North countries—particularly Western, Educated, Industrialized, Rich, and Democratic (WEIRD) nations—lead AI development (Starke et al., 2022), the Global South grapples with limited connectivity, low digital literacy, and insufficient technological investment (de-Lima-Santos et al., 2023).

This digital divide, representing unequal access to digital technologies within and between Global South countries (Mabweazara, 2020), becomes more pronounced with AI. AI technologies demand substantial financial investment, advanced technical skills, and robust infrastructure, often excluding smaller, less-resourced media organizations in the Global South from the AI revolution (Gondwe, 2023; Jamil, 2022).

This "AI divide" deepens pre-existing inequalities. Implementing AI requires resources often available only to large organizations. Smaller media outlets may rely on third-party vendors or open-source tools, restricting their autonomy and innovation potential (Gondwe, 2023; Jamil, 2022). Furthermore, many AI tools are trained primarily on English-language datasets, leading to linguistic and cultural misalignments when applied in diverse contexts across Africa, Latin America, and Asia (Mabweazara, 2020; Munoriyarwa et al., 2023).

AI's potential to empower media is undermined if institutions lack the capacity to implement it effectively. Dependency on third-party platforms makes many Global South organizations vulnerable to vendor lock-in and reduces their control over AI-driven editorial decisions (Jamil, 2022; Mesquita & de-Lima-Santos 2024). This asymmetry not only entrenches global technological hierarchies but risks perpetuating harmful biases, especially when Global North algorithms are applied without sufficient localization. For instance, language models trained mainly in English may misinterpret or marginalize regional dialects and cultural nuances (Munoriyarwa et al., 2023).

INSTITUTIONALIZATION AND ISOMORPHISM: NORMS IN TRANSITION

Institutional theory helps understand how AI adoption shapes and is shaped by journalistic norms. As newsrooms integrate similar AI tools, they often begin to resemble one another – a process called institutional isomorphism. This involves mimicking practices perceived as legitimate or efficient, often imported from Global North organizations (Lelo, 2022).

While convergence can foster standardization and professionalization, it risks eroding media diversity. Organizations might prioritize technological conformity over contextual appropriateness, leading to homogeneity in formats and reporting. Formal codes of ethics and editorial guidelines, vital for self-regulation, must evolve to address the unique ethical dilemmas posed by algorithmic decision-making (de-Lima-Santos et al., 2024). Isomorphic tendencies can also obscure the need for critical scrutiny of AI tools, particularly externally developed ones, leading to uncritical adoption without evaluating their impact on local media ecosystems.

AI IN JOURNALISM: OPPORTUNITIES AND CHALLENGES

Despite challenges, AI integration in newsrooms is growing. Traditional uses include algorithmically generated news in sports, weather, and finance. Generative AI, specifically, is used to draft articles, summarize documents, and create visuals, freeing journalists for creative and investigative work (Nishal & Diakopoulos, 2023).

Social bots are another application, used for news distribution and audience engagement (DalBen & Jurno, 2021). Responsibly used, these AI tools can streamline workflows and expand journalism's reach. However, careful monitoring is essential to prevent misinformation and ensure alignment with journalistic standards.

AI in journalism spans newsgathering, production, distribution, and business strategy (Nishal & Diakopoulos, 2023), each requiring different expertise and infrastructure, necessitating tailored approaches based on local capacities. This integration raises questions about ethical responsibility, labor displacement, and editorial transparency. Accountability for bot-generated content and concerns about misinformation from generative AI used without adequate oversight are significant issues.

CASE STUDIES: LOCALIZED AI EMPOWERMENT

As AI becomes more prevalent in journalism, strategies prioritizing inclusion and ethical governance are urgently needed. Unrecognized bias in AI algorithms can reinforce structural inequalities and distort media narratives (Mabweazara, 2020; Munoriyarwa et al., 2023). Developing AI literacy within newsrooms is critical, not just for technical adoption but for fostering critical engagement with these tools.

The Global South offers rich examples of news organizations creatively using AI to enhance transparency, monitor power, and combat disinformation, demonstrating localized approaches to leveraging technology effectively despite systemic challenges. For example:

- La Nación in Argentina employed computer vision algorithm (with subsequent validation of its output via crowdsourcing) to analyze scanned electoral voting documents. The team's purpose was to detect blank spaces in the forms filled out by voting station officials, which is crucial data for verifying the electoral process and preventing fraud. The AI technology enabled them to review 100,000 documents in 2021. The data gathered by the computer vision algorithm was validated with the help of volunteers through crowdsourcing, which helped identify and correct defects in the algorithm's output, particularly concerning documents from primary elections, allowing for fine-tuning before the general elections.
- Armando.info in Venezuela utilized AI to process satellite imagery for the purpose of identifying and analyzing the expansion of illegal mining operations in the Venezuelan Guayana, located in the northern part of the Amazon. A computer vision algorithm was programmed to recognize patterns in the images that are similar to open-pit mines and clandestine airstrips, enabling the identification of these features within the jungle environment. The AI-driven analysis identified 3,718 locations with illegal gold mining activities in the states of Amazonas and Bolívar.
- Aos Fatos, a Brazilian fact-checking organization, has developed FátimaGPT, an AI-powered chatbot designed to help users verify information and combat misinformation. This tool integrates generative AI technology in WhatsApp, Telegram, and the Aos Fatos website to interpret user queries and provide responses in natural language. Unlike traditional chatbots that rely on pre-programmed responses, FátimaGPT generates personalized answers based on the content published by Aos Fatos. This approach ensures that the information

provided is accurate and grounded in verified journalism. Similarly, Aos Fatos employed AI, specifically LLM, to efficiently categorize a large dataset of over 242,000 advertisements. The AI was used to classify each ad into one of sixteen predefined topics, which facilitated the identification of prevalent themes and potential misinformation within the advertisements. This automated classification process streamlined the analysis of the extensive dataset to combat potential deceitful content that could interfere in democratic processes in the country.

- CLIP (Centro Latinoamericano de Investigación Periodística) has developed NINA, a data commons platform, connecting 40 databases, including CLIP's own databases in more than 21 countries. This platform integrates AI to support investigative journalism across Latin America. In 2024, CLIP enhanced NINA with an AI-powered chatbot designed to facilitate "knowledge data search." This feature enables journalists to simultaneously query both structured and unstructured databases, providing precise references for their inquiries. The AI chatbot can process queries in English and retrieve information from Spanish-language documents, offering results in formats like CSV. Users also have the ability to restrict access to specific data, ensuring source privacy.
- Fiquem Sabendo, a Brazilian nonprofit organization dedicated to promoting transparency through public data, developed the "Agenda Transparente" platform to monitor the schedules of public officials. This tool aims to enhance political transparency by providing free access to information about the activities of authorities. While specific details about the integration of AI into the project are not publicly available, the platform's functionality suggests the use of automated data collection and processing techniques. By aggregating information on public officials' meetings and agendas, it facilitates the tracking of political movements and decision-making processes. Additionally, the platform offers customized reports, transforming raw data into actionable insights. Overall, "Agenda Transparente" serves as a valuable resource

for journalists, researchers, and citizens interested in governmental transparency, leveraging technology to make public data more accessible and understandable.

- GMA Integrated News Digital in the Philippines released "InoculatED," which uses AI to proactively combat misinformation through "pre-bunking"—educating audiences about misinformation tactics before they are exposed to them. Central to this initiative is Facts Talk, a series of engaging video explainers produced with the help of generative AI tools. The integration of AI has significantly improved efficiency, cutting production time by 50% and doubling the output of vertical videos for platforms such as YouTube Shorts.

These cases demonstrate that, when localized and ethically deployed, AI can significantly enhance media's capacity to serve the public interest. They highlight the importance of integrating contextual knowledge and community engagement in technological design—something often overlooked in Global North-centric AI systems.

CONCLUSION

AI has the potential to significantly empower media systems in the Global South—enhancing transparency, increasing efficiency, and expanding democratic participation. However, this potential can only be realized if the deployment of AI is context-sensitive, ethically informed, and inclusive. Structural barriers such as the digital divide, institutional isomorphism, and global power asymmetries must be addressed to ensure that AI becomes a tool for empowerment rather than exclusion.

Collaboration between journalists, technologists, civil society, and academic institutions is key to developing AI systems that reflect local languages, cultures, and political dynamics. Additionally, continuous evaluation of AI's

impact on newsroom practices and democratic outcomes is essential to ensure that innovation does not undermine journalistic integrity.
By critically assessing both the risks and opportunities of AI integration, media practitioners and policymakers in the Global South can build more resilient, innovative, and democratic information ecosystems.

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TRANSPARENCY WHEN USING ARTIFICIAL INTELLIGENCE: A COPYRIGHT LAW APPROACH

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INTRODUCTION

Media newsrooms have started to cover the popularization of artificial intelligence systems across the internet, which began with the public availability of ChatGPT, the flagship product of the American company OpenAI in November 2022, followed in February 2025 by the Chinese product DeepSeek and the European (French) Le Chat, from the company Mistral. The unrelenting adoption of these tools has led to at least two problems related to intellectual property and copyright law in the media industry and journalism. One is related to how training artificial intelligence models such as those mentioned above (and others), based on large language models (LLMs), requires huge amounts of data. This has raised serious questions, ending in court in more than a few cases, regarding whether such AI systems are using third-party works protected by intellectual property law, in many cases without citing the source. The second problem concerns the products of these AI systems.

The issue of transparency is related to, and perhaps even lies at the heart of, both of these problems. This concept was initially applied, for example, in the EU Media Freedom Act, through the requirement that the media be transparent about the ownership of their companies as well as their sources of funding, including subsidies, institutional advertising they may receive, and loans from

financial institutions that may condition their editorial line and independence (Tomaz, 2024; Theina & Sevignani, 2024), but the same term also applies to attribution rights as established by intellectual property law. We refer herein to this latter meaning.

CURRENT STATE OF AFFAIRS

The influence of AI systems has led to legislation to specifically regulate AI, in systems that are normally based on risk such as the EU AI Act—an approach that is also followed in bills in Brazil (draft Lei da Inteligência Artificial, PL 2.338/2023, introduced in the Senate in December 2024) and Australia (Safe and responsible AI in Australia: Proposals paper for introducing mandatory guardrails for AI in high-risk settings, September 2024)—in addition to court cases and agreements between media and AI companies in parallel. However, concerns remain about how to ensure that transparency is maintained in all processes involving generative artificial intelligence. Transparency regarding the algorithm and its legal regulation is considered to be a central issue, being not only a legal but also an ethical requirement (Alén-Savikko, 2022).

Shortly after the appearance of ChatGPT in November 2023, the G7 countries (USA, Canada, UK, France, Germany, Italy, and Japan) launched the Hiroshima Process International Guiding Principles for Organizations Developing Advanced AI Systems, leading to a code of conduct for AI developers based on voluntary adherence. These principles are aimed at identifying risks, insisting on the need for transparency and accountability, and ensuring both the privacy of personal data and intellectual property rights. Just one month later, 29 countries, including many from the European Union as well as the USA and China, adopted the Bletchley Declaration at a global summit on AI. Similarly, on October 30, 2023, the US Government issued an Executive Order on the Safe, Secure, and Reliable Development and Use of Artificial Intelligence.

Also in 2023, Digital Content Next, whose partners include some of the world's most powerful newspaper publishers, released the Principles for Development and Governance of Generative AI, which insists on both intellectual property (of media publishers, rather than journalists) and, in point four, transparency as an obligation to clarify how generative artificial intelligence models have been trained. The development of such a statement of principles has also been adopted by the International Authors' Forum (Principles for Artificial Intelligence and Authorship, September 2023), the first being authorization, fair compensation, and transparency (as well as accountability, see Milosavljević & Poler, 2024).

This requirement for transparency has become law, although it will not really come into force until mid-2026, through the European AI Act. Thus, under EU law, article 104 states that one of the transparency requirements for AI system companies is to clarify the content that they use to train their models. In the final stage before the approval of this Act, journalists' organizations such as Reporters Without Borders (RWB) recommended the inclusion of specific legal provisions. One provision that was proposed is that "content generated by large language models even in the supervised training phase must be verified by media and information professionals." Another aimed to ensure that any source used for this purpose should uphold the principles of pluralism. Moreover, RWB urged "the European Commission to ensure that the General Purpose Artificial Intelligence (AI) Code of Practice includes specific provisions to protect journalism and reliable information," considering that 78% of the meetings held by European representatives were with people from the tech industry.

This dominant position of the tech industry and the resulting danger to pluralism have also been denounced by the European Broadcasting Union (EBU, 2024, Borchardt et al., 2024) on behalf of the majority of European public broadcasting services. Specifically, RWB insisted on "improving transparency in the use of copyrighted works to train AI models, and ensuring more effective

means for authors and rights holders—including journalists and media organizations—to negotiate and retain their rights." None of these recommendations were accepted or finally adopted in either the IA Act or the Code of Practice. Moreover, recent academic literature, while recognizing that transparency is an important value for journalists and media as well as for the public (Thomson et al., 2025: 9), states that "transparency is not a panacea," and that, for example, Art. 50 of the EU IA Act is too narrow to be of any real benefit to address the needs of audiences (Piasecki, Morosoli, Helberger & Naudst, 2024). The News/Media Alliance (NMA) reiterated these principles in April 2023, expanding on them in their response to and comments during the consultation on Artificial Intelligence and Copyright launched by the US Copyright Office in October of that year.

Finally, also in November 2023, the Paris Charter on AI and Journalism was launched. In contrast to the above-mentioned guidelines, it insists on ethical rather than legal solutions, but still calls for transparency (in particular to distinguish human from synthetically produced content) and accountability as the pillars of a human-centered perspective on the use of artificial intelligence in newsrooms.

Other regulators have echoed this need for transparency regarding the use of sources. Even the House Bipartisan Task Force on Artificial Intelligence of the US Congress has been working in this issue, acknowledging in a report published in December 2024 that "it is often difficult for creators to know whether their copyrighted works are being used by AI developers." Baroness Kidron's proposed amendments to Clause 132 of the UK Data (Use and Access) Bill in the House of Lords seek to enforce precisely this transparency by demanding that all works and authors used in LLM training processes be explicitly acknowledged. The UK government also uses this argument, albeit from a different point of view; indeed, its December 2024 open consultation document on Copyright and Artificial Intelligence states that the proposed modifications (in fact, a licensing exemption) "depend on greater trust between

AI developers and rights holders." However, it is unclear whether this proposed provision will ultimately be enacted.

CONCLUSIONS AND FUTURE RESEARCH

Space limitations prevent us from explaining herein the full importance and development of the concept of transparency in copyright law. For the time being, although more in the realm of wishful thinking than true regulatory effectiveness, transparency of sources and processes remains a central concept. The most advanced legislative initiative, apart from the already approved EU AI Act, is currently the Brazilian artificial intelligence law. This bill devotes an entire section to transparency and copyright, and if passed, all AI system developers will have to report the use of content protected by copyright and related rights and refrain from using content to which an opt-out has been applied. The Brazilian legislator, benefiting from others' experiences, recognizes that it will not be easy to protect these rights in each and every work, and moreover, such control will be regulated by implementing legislation (regulations) and entrusted to an administrative authority (Rocha de Sousa, 2024: 94–96). The Australian government is proceeding in a similar manner, devoting the entire section 6 of its Proposals Paper for Introducing Mandatory Guardrails for AI in High-Risk Settings of 2024 to this topic. Australia is also a unique case because it has neither a fair-use exception nor a system of graded exceptions as in the EU.

The practical and legal embodiment of the principle of transparency, especially regarding sources and the right to author attribution (which is not always given to journalists in all legal traditions, in particular being omissible but generally followed in Common Law countries such as the UK or Ireland) will be an issue to follow and analyze in the near future, considering the wide range of solutions and its implications for other branches of law, relating for example to competition, to privacy, or even to plagiarism. A certain laxity in this regard has led, for example, to the considerable proliferation in China of media

content reproduced without authorization or citation of origin or authorship via social networks (Xu, YU & Chen, 2024). This problem is not unique to China. In France, 40 newspapers went to court in February 2025 to prevent systematic plagiarism, using artificial intelligence tools, of their content by web portals such as NewsDayFR. The emergence of DeepSeek in February 2025 provoked reactions and even measures from authorities such as those in Italy or Ireland, precisely because of misgivings regarding the processing of personal data, which may be in contradiction to European legislation, as well as other concerns closer to journalistic practice, such as the possibility of copyright infringement (Adami, 2025; Deck, 2025).

One of the solutions comes through self-regulation by the media and newsrooms, and it is possible that this trend will become more pronounced in the near future. Media such as El País in Spain or the British (actually, global) The Guardian publicly stated in 2024 and 2025 that they will have such internal regulation in place. It is taken for granted that measures such as this will reinforce users' trust in the media (Linden & Tuulonen, 2019; Mitchell, 2025). At the same time, The Guardian, one of the last to sign an agreement with OpenAI, in February 2025, states it can thereby guarantee attribution of content used by ChatGPT. No actions, even the most extreme, can be ignored, such as the appeal to the courts by the French Syndicat d'Editeurs de Presse Magazine, which succeeded in November 2024 in getting the Paris Commercial Court to prohibit Google from removing news articles that came from certain media with which it had copyright disagreements.

The Authors Guild has published a seal of quality, that is, the Human Authored Certification, that guarantees that content reaching a user was created through decisive human intervention. To the best of our knowledge, at the time of writing, no media had joined this initiative. In contrast, we have seen the appearance of media outlets such as Quartz that, without acknowledging it, have published numerous AI-generated news stories. Tools such as SpinozIA, from Reporters Without Borders, aim to provide journalists

with resources to make the news production process transparent. However, journalists and the media are responsible for this, especially through so-called news creators or news influencers, using whom as many as 37% of adults under 30 years old in the USA prefer to stay informed, according to a November 2024 study by the Pew Research Institute (Stocking et al., 2025). This issue is by no means minor: In November 2024, a United Nations study reported that 62% of such influencers did not verify the information that they shared on social networks, thus insisting on the need for media professionals or those who act in spreading news beyond the media to be transparent about their information sources.

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AI, MEDIA, AND JOURNALISM: EDITORIAL AND ALGORITHMIC DECISIONS IN PUBLIC SERVICE MEDIA (PSM)

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INTRODUCTION

In the context of the generalist benchmark media, public audiovisual media have demonstrated their capacity for resilience and adaptation in a constantly changing, hybrid media system. In this sense, the gradual implementation of artificial intelligence (AI) systems presents a new challenge to public broadcasting services in Europe, which have operated under constant innovation since the 2000s (García Avilés, 2021).

The adoption of algorithmic technology can be compared to previous adaptive challenges, e.g., those related to digitalization and multimedia convergence, which also led public broadcasters to adapt and compete with private media (Fieiras-Ceide, César, Vaz-Álvarez, Martín; Túñez-López, Miguel, 2024). However, AI presents additional, distinctive challenges linked to how such algorithms work and their regulatory and legal framework.

As discussed in the Council of Europe's European Audiovisual Observatory (2024), the legal frameworks governing the use of artificial intelligence (AI) in the 27 EU Member States are somewhat limited, considering the rapid evolution of this technology. Indeed, while AI presents opportunities for innovation, creativity, and efficiency in the audiovisual sector, it should be noted that existing regulations are still under development and may face difficulties in ensuring the sustainable integration of AI (Díaz Noci, 2003; Peñafiel, Peña and Larrondo, 2024).

Broadcasters such as DR (Denmark), ZDF (Germany), RTBF (Belgium) BR (Germany), BBC (UK), ERR (Estonia), RAI (Italy), RTÉ (Ireland), RTS (Switzerland), YLE (Finland), and RTVE (Spain) have started to reflect on the importance of addressing this new stage of innovation and new products derived from AI, to better fulfill their public service role (Public Media Alliance, 2023).

Beyond the regulatory issue, European public broadcasters are particularly concerned about respecting human and journalistic values in their operations, making the incorporation of AI into their production processes an even greater challenge, if possible, compared with other benchmark media. Therefore, the main issues for this type of media include the algorithmic procedures for adapting to audience needs and content recommendations as well as the ability to respond rapidly to such changes (Sørensen, J. K.; Hutchinson, 2018).

RESULTS

A few illustrative examples are already available: the Flemish TV station VRT (Belgium) created MediaDigest to optimize consumption time and strengthen engagement with younger audiences by creating more direct and accessible news summaries, distributed with a multiplatform philosophy. Meanwhile, Radiotelevisión Española (RTVE) applied AI during important coverage, e.g., related to elections, especially for audiences that were previously unserved in terms of news (Aramburú-Moncada, López-Redondo and López-Hidalgo, 2023). Likewise, this broadcaster has taken the initiative by generating products that are attractive to younger audiences through programs such as Hiperia, specialized in music content (Radio 3) (Leibar, 2024). RTVE's transparency and accountability mechanisms detail various uses of AI and other advanced technologies (Aramburú-Moncada, López-Redondo and López-Hidalgo, 2023), in addition to publishing news and specific content on this technology with the objective of improving citizenship literacy.

In other words, algorithms raise questions and uncertainties regarding the transparency, authority, and legitimacy of PSMs: on the one hand, they can help to avoid human bias thanks to their accuracy, whereas on the other, they can also suffer a high risk of becoming aligned with commercial, political, etc. interests. Consequently, the use of AI in the field of public service media (PSM) highlights the relevance of the work of human journalists and communicators for content creation.

The adoption of algorithms also implies the introduction of new parameters for measuring public service on the basis of data, in addition to other considerations that may be equally interesting for assessing the extent and value of the public service provided to citizens. Unsurprisingly, as has been pointed out, there is a growing tendency to question the usefulness of algorithms to express the human and ethical values that have traditionally

characterized PSMs, which seem difficult to express via a mathematical formula (Sørensen, J. K.; Hutchinson, 2018).

In this vein, the values of PSMs are already facing technical and organizational drivers that may promote their profound transformation, starting with a transfer of autonomy from editorial to technical staff (Carillon, 2024). So, the introduction of AI causes tensions between editorial considerations and algorithmic decisions in an organizational and labor context in which journalists constitute only a fraction of the constellation of actors involved in the development of recommendation systems. Indeed, engineers, designers, or decision-makers exert a much more significant influence on these processes.

These circumstances also make it necessary to consider the type of intelligent systems implemented at each broadcaster, i.e., whether to opt for the development of proprietary algorithms, with the associated economic costs, or to use third-party products. In this case, in particular, it becomes essential to monitor the type of data that feeds the algorithms, to avoid biases or inappropriate data use and ultimately ensure the quality of the product resulting from the use of such data, in terms of its usefulness to audiences. Indeed, some authors state that the use of third-party applications or large technological platforms is not ideal, "especially in the case of public service media, owing to their specific content and data processing needs" (Fieiras-Ceide, Vaz-Álvarez and Túñez-López, 2022).

CONCLUSIONS

This opens up an interesting line of research into the strategies employed by broadcasters to integrate public service values into content recommendation systems. This line of work has begun to be explored through the work of the Gureiker Research Group (IT1496-22) in its collaboration with the Aula Empresa of the Basque Public Radio and Television EITB and the Faculty of Social Sciences and Communication of the UPV/EHU, the university to which

the group is attached. On the basis of the analysis of experiments (Orbegozo et al., 2025), cases (Leibar, 2024), and following the work of technical staff, the importance of paying more attention than ever to technical issues is emphasized, but with the aim of discovering the current potential regarding news and journalism. This line of research also involves the transfer of university teaching of relevant journalism competences to train future communicators in the design, programming, and use of algorithms while incorporating the ethical and professional values of journalism.

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ARTIFICIAL INTELLIGENCE APPLIED TO INFORMATIVE SPEECH: AN EXPLORATORY STUDY WITH JOURNALISM STUDENTS

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INTRODUCTION

In the emerging context of the use of voices generated by artificial intelligence (AI) in the field of journalism, this study proposes a comparison and reflection on the differences between these and human voices. In particular, we address aspects such as credibility and emotional connection, which are key elements in media communication. In addition, we reflect on the extent to which AI-generated speech could be considered to provide a valid substitute for human voices in the near future. This reflection is based on an experiment designed to evaluate the ability of journalism students at the University of the Basque

Country to differentiate between human and AI-generated voices. This exploratory study was carried out in the context of a classroom activity involving 100 journalism students from three different groups, considering specific voice factors that influence their differentiation, such as intonation, rhythm, timbre, and vocalization.

JOURNALISM, SPEECH, AND ARTIFICAL INTELLIGENCE

The introduction of AI voice generation raises profound questions and challenges regarding the future of communication. Technological innovations make room for "diverse typologies, such as audio fiction, narrative non-fiction, conversational, or popularization podcasts" ["tipologías diversas, como ficciones sonoras, podcasts narrativos de no ficción, conversacionales o de divulgación"] (Chaparro Dominguez, 2024: 120) and a range of other automation resources, allowing the media to experiment extensively (Bazan-Gil et al, 2021). Among the examples that illustrate artificial innovations to conquer the audio field is the case of Intar Radio, the first online radio station to be created in Spain with AI. Although this project is novel, it suffers from monotonous prosodic features that limit its emotional connection with the audience (Gómez, 2024). Among the mainstream media, Cadena SER incorporated the voice of an artificial announcer (Victoria) into its program Carrusel Deportivo in 2022, an experimental multiplatform initiative that has also been applied by Amazon with Alexa and in the As daily newspaper (Novoa, 2023).

The voice is an essential component of the human experience; it transmits not only information but also emotions, intentions, and nuances that enrich the message (Rodero, 2003), making it one of the most complex characteristics of the human body (Torres Gallardo, 2025). In this regard, a natural voice still has much greater capacity than an artificial voice to generate empathy and establish an emotional bond with the audience (Gómez, 2024), aspects that are fundamental in journalism (Fitó Carreras et al., 2023). Meanwhile, AI-

generated voices, although they have advanced considerably in terms of technical quality, "have not yet managed to fully mimic the many nuances of the human voice" ["todavía no han conseguido imitar completamente los numerosos matices que tiene la voz humana"] (Chaparro-Dominguez, 2024: 135) and thus face challenges in achieving the same level of connection and authenticity.

In this context, and considering that AI development is advancing rapidly, the similarity of artificial to human voices will probably soon improve (Jimenez et al, 2024). It is thus considered interesting to test the human perception of the authenticity of different voices, both natural and artificial, in an audio news context, where the emotional nuances related to spontaneity are more limited than in entertainment contexts.

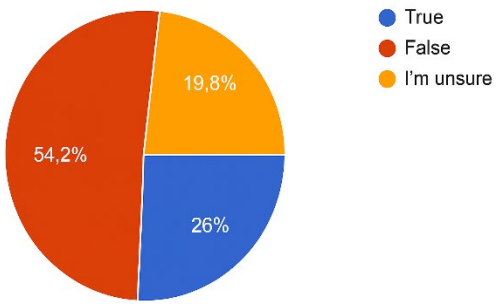
METHODS

This study aims to explore how AI-generated voices are perceived in comparison with human voices, primarily from a prosodic perspective. For this purpose, an experiment was designed in which 96 students following different journalism courses listened to 14 audio fragments with the same journalistic content: 7 produced by human speakers and 7 by free AI applications available on the market. The participants had to identify which voices were natural and which were artificial. The experimental design included a semi-open-ended questionnaire in which specific elements that influence voice perception were to be evaluated. These factors included: intonation, which refers to tonal variations in speech; rhythm, related to the speed and fluidity of speech; timbre, which determines the characteristic "color" of each voice that gives it its personality; and vocalization, which describes the precise and articulate pronunciation of sounds. These elements are fundamental to transmit not only the semantic content of the message but also its intention and emotionality. In addition, students responded to questions related to the implementation of AI-generated speech in journalism.

RESULTS

Faced with the challenge of having to determine whether the played-back audios were produced by humans or generated by AI, the respondents did not achieve unanimous consensus for any of the 14 audios. It it also interesting to note that the greatest margin of doubt was generated by the artificial voices.

Figure 1. Perception of veracity of AI-generated audio



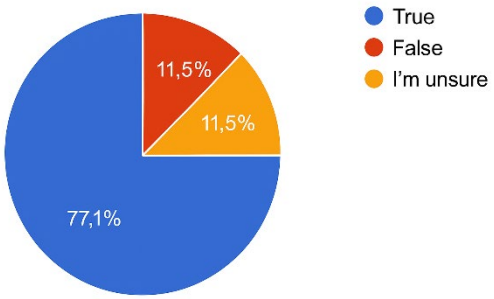
Source: Authors' own creation

Although most of the artificial speech samples were recognized as such with almost 100% accuracy, one of them was detected by only 54.2% of the participants (Figure 1). This means that almost half believed it to be a natural voice. On the other hand, the human voice that generated the most doubt was recognized as natural by 77.1% of the respondents (image 2). In all other cases the margin was very small, indicating that the difference was easily detected.

Meanwhile, the idea that all the voices managed to mislead their listeners in the some proportion is noteworthy, since none of them received a 100% unanimous decision. For all but two of the audios, the prosodic characteristic that most stood out as a determining factor in their perception of vocal realism was intonation. In one case, corresponding to an AI-generated audio, the rhythm was highlighted, whereas in another case, being a natural voice, the characteristic that enabled its detected as natural was the vocalization. In any

case, all the voice recordings managed to "fool" the participants in this study to some extent, albeit limited.

Figure 2. Perception of veracity of AI-generated audio



Source: Authors' own creation

All respondents expressed an a priori preference for the human voice over AI-generated voices. Among the main reasons expressed by the participants, the one related to expressiveness stands out. The human voice is considered to be able to convey emotions more effectively than an artificial voice. One of the recorded responses states that "if a person is moved by a topic, they will say it with more emotion; just as if it is a sad topic, they will say it with more regret, which the AI would have a harder time portraying." ["si a una persona le emociona un tema, lo dirá con más emoción, igual que si es un tema triste, lo dirá con más pesar, cosa que a la IA le costaría más representar."] The lack of naturalness and familiarity was also mentioned, since the human voice "sounds more natural, inspires much more confidence, and is not boring, as the one generated with artificial intelligence seems very monotonous to me." ["suena más natural, inspira mucha más confianza y no aburre, porque la generada con inteligencia artificial me parece muy monótona."] Other participants noted that the human voice "is more familiar, as it allows you to recognize the voice of the person who is speaking" ["es más cercana, ya que te permite reconocer la voz de la persona que está hablando"]. With regard to the professional or employment dimension, statements such as "I wouldn't want

to listen to an artificial intelligence deliver the news" ["no me gustaría escuchar a una inteligencia artificial dar las noticias"] or "many people could be left on the street" ["mucha gente se podría quedar en la calle"] were mentioned. Another respondent argued: "We cannot lose the essence of communicating among human beings without relying on external agents" ["No podemos perder la esencia de comunicarnos entre los seres humanos sin depender de agentes externos"]. Regarding the limitations of AI, it was mentioned that, although AI-generated voices may improve over time, they currently still lack spontaneity.

Meanwhile, 63.2% of respondents feared that, although artificial voices do not currently sound human, they will eventually do so and there is a possibility that human voices will be almost completely replaced. Indeed, more than half (56.1%) believed that, in the future, artificially generated voices will not be detectable as such by simple listening. In addition, 73.7% of the students who volunteered for this exploratory study stated that they are somewhat or very concerned that, in the future, there will be less diversity of accents or dialects detectable in speech.

CONCLUSIONS

The results of this study reveal that current technologies for generating artificial voices still fail to fully replicate the authenticity and closeness of human voices. While modern technologies have significantly improved in aspects such as intonation and clarity, they often lack the emotional depth and dynamism of a human voice. AI-generated voices tend to maintain a less natural intonation and rhythm than human voices or lack the subtle inflections that human voices display to emphasize key points or express emotion. However, it is striking that all the voices recorded and played back in this study invoked a margin of doubt, even if minimal, regarding their authenticity. With technologies advancing at an unstoppable pace, this margin could increase significantly for speech generated by artificial intelligence in the future.

The inclusion of journalism students as participants in this experiment enabled us to explore their perceptions regarding the impact of AI on their future profession. More than half expressed concerns regarding how automation could reduce the presence of human speakers, and the resulting lack of vocal diversity that this trend may cause in the future.

On the basis of this exploratory pre-analysis, future research will address the incorporation of more advanced deep learning models that more effectively reproduce not only linguistic patterns but also the prosodic and emotional signals present in human speech. On the other hand, it is important to consider the ethical and social implications of this technology. The use of AI-generated voices in journalism raises questions about transparency and authenticity. Should the media clearly inform their audience when using AI-generated voices? How might this affect public confidence in the news? These are questions that require an open and ongoing debate among developers, journalists, and academics.

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ARTIFICIAL INTELLIGENCE, JOURNALISTIC PRODUCTION, AND MEDIA CONSUMPTION: THE DESIGN OF A METHODOLOGICAL TOOL FOR THE ANALYSIS OF RELATED MEDIA COVERAGE IN SPAIN

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INTRODUCTION

Artificial intelligence (AI) has been defined as the tangible real-world capability of non-human machines or artificial entities to act, solve tasks, communicate, interact, and act logically as biological humans do (Gil de Zúñiga et al., 2024, p. 318). In addition, note that this includes different areas, such as machine learning, artificial vision, voice recognition, natural language processing, automatic planning, expert systems, and robotics.

Thus, the importance achieved by AI in recent years has resulted in a series of challenges in the economic, industrial, and social spheres (Gómez-Calderón &

Ceballos, 2024; Tuñez-López et al., 2019). Among the benefits, it is common to mention improvements in production processes, in democratic quality, or in the provision of high-quality public services, while the disadvantages include a widening of existing gaps (based on gender, race, social class, etc.), the lack of transparency, the impact on jobs, or market manipulation.

CURRENT STATE OF AFFAIRS

Study of the use of artificial intelligence in the media reveals that it is linked both to the development of generative AI, with the creation of new content and content personalization, and to analytics, through data classification and analysis for predictions to support decision-making (Iscote et al., 2024).

This influence of AI occurs in all phases of journalistic production, from the automation of information gathering and documentation, to automated content production, to information distribution and audience relationships (Sánchez-García et al., 2023). Moreover, these effects extend not only through the industry but also to professionals and the audience itself (Peña-Fernández et al., 2023).

In relation to the effects on production processes, a number of benefits and disadvantages are expected, linked to the media's role in providing the public with accurate, accessible, diverse, relevant, timely, and independently produced information (Nielsen, 20217). In addition, challenges associated with other standard functions associated with media in democratic societies will emerge, such as playing an investigative or watchdog role, providing analysis, fostering social empathy, providing a public forum for debate, serving as an advocate for diverse policies and viewpoints, or advocating for democracy (Lin & Lewis, 2022; Nielsen, 2017).

In addition, the effects of the implementation of AI on media actors can also be specifically noted. When talking about the media or the industry, the questions

that arise include the economic viability of the development of AI, legal liability for the content generated, creation of content about people, ethics in the use of data, transparency regarding algorithms, and expectations about AI. Meanwhile, professionals will also face new challenges, including the loss of the symbolic figure of journalists as mediators, the loss or instability of jobs and pay, how to adapt professional training, new professional roles, and new relationships with technical staff. Finally, the use of AI poses a number of dilemmas regarding its relationship with the audience in terms of the credibility, quality, or amenability of AI-generated content (Peña-Fernández et al., 2023).

OBJECTIVES OF THE CONTENT ANALYSIS

The main objective of the content analysis proposed herein is to deepen our knowledge on the informative treatment of online Spanish media on AI as applied to communication and, specifically, to the production and consumption of journalistic information, and the approaches established regarding the consequences of its implementation, in order to assess its social impact.

The following specific objectives are thus derived from this main objective:

> SO1. To determine how the media define AI in relation to the journalistic production process, the actors involved, and the challenges resulting from its use.
> SO2. To establish the importance given by the media to the effect of AI on the traditional standard functions of journalism.
> SO3. To measure the position of the media with respect to the use of AI in terms of the informative relevance given to both the benefits and harm resulting from its use.
> SO4: To compare the characterization of AI and its effects in terms of elements linked to journalistic practice, such as the authorship of

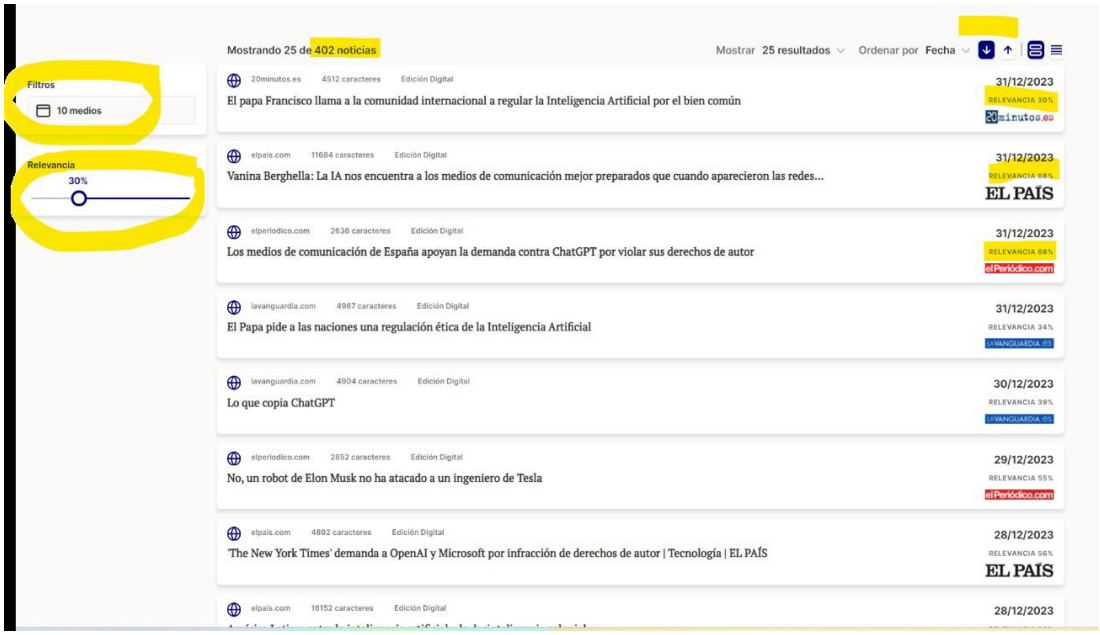
information, the ideology of the media, the genres applied, and the main sources of stories.

METHODOLOGICAL DESIGN

Characteristics of the Content Analysis

The scope of the content analysis, designed from a quantitative perspective, is both descriptive (determining how the media approach the use of AI in the field of communication in relation to the actors and production processes) and explanatory (determining which aspects condition this approach).

Figure 1. Example search results from MyNews



Source: Authors' own creation

Content Analysis Variables

For the operationalization process, a series of constructs were developed in which the variables were operationalized using different dimensions and indicators:

- Conditioning factors in journalism: These will help to evaluate possible differences in treatment depending on the ideology of the media, the authorship of the text, the journalistic function of the text, and the main source used.
- The definition of AI, according to: the type of AI (generative/analytical), the relationship of AI to the phases of the journalistic production process (information search, production and distribution of information), the relationship to the standard functions of journalism (informing, monitoring, fostering social empathy, facilitating a space for debate, serving as an advocate for diversity, and defending democracy).
- The challenges for media actors, including industry (economic viability, legal responsibility for content, creation of content about people, ethics in the use of data, and transparency of algorithms), professionals (loss of symbolic capital, loss of jobs, adaptation of training, new professional roles, and new professional relationships), and the audience (the credibility, quality, and amenability of AI-generated content).
- Specific benefits of the use of AI in production processes: accuracy (reduction of errors in verification and editing), accessibility (improved readability, adaptation to platforms, and people with disabilities), diversity of information (detection of peripheral views, improved context or diversity of points of view), relevance (detection of important topics for social life, thought-provoking or improved personalization services), and speed (acceleration of transcription and publication processes, better adaptation to the routines of the audience).
- Specific harms of the use of AI in production processes: accuracy (reduction of data quality, proliferation of misinformation, suppression of adequate context for correct interpretation), accessibility (use of information from fake accounts, incorrect levels of personalization, widening of the digital divide), diversity of information (biases and lack of transparency in the configuration of algorithms, excessive repetition of popular topics, proliferation of hate speech, and development of echo chambers or information bubbles), relevance (absence of journalistic

principles in the algorithm, resorting to the use and structure of topics derived from clickbait, disconnection from the interests of the audience), and speed (reduction of verification processes, an obstacle to deepening and contextualization, saturation of the audience due to information overload).

Figure 2. Content analysis codebook

BACKGROUND VARIABLES	**1.ID**			
	Encoder			
	3. Coding date (dd/mm/yyyy)			
	4. URL			
	5.Date of publication (dd/mm/yyyy)			
	* In case of update, enter the update date			
CONDITIONING FACTORS FOR THE JOURNALISM	**6. Media**			
	20minutos.es	1	*elmundo.es*	6
	abc.es	2	*elpais.com*	7
	elconfindencial.com	3	*elperiodico.es*	8
	Eldiario.es	4	*larazon.es*	9
	elespanol.com	5	*okdiario.com*	10
	7. Media ideology			
	Conservative	1		
	Liberal	2		
	Social-democrat	3		
	Far right	4		
	Authorship			
	None	1		
	Agencies	2	In some media, although the heading of the text reads "Editorial team" ["*Redacción*"], at the end of the text it is indicated that it is an agency news item.	
	Generic byline	3	For example: Editorial office, La Vanguardia...	
	In-house journalists	4		
	Non-journalist collaborators	5	For example, guest columnists or opinion-formers. Could be an individual or collective author (e.g., Association of Spanish Geographers).	

	9. Journalistic function		
	Informative	1	News, reports, interviews
	Interpretive	2	Reports, chronicles...
	Opinion	3	Columns, editorials, essays...
	10. Main source		
	Government agencies	1	
	Tech companies	2	
	Academics	3	
	Actors in the media sector (journalists, editors, etc.)	4	
	Non-governmental organizations and activists	5	
	Users	6	
	Other media	7	
	Other	8	
	None	9	
DEFINITION OF AI IN THE CONTEXT OF THE MEDIA	**Type of AI**	**11. Generative AI: new content creation and content personalization**	
		No	0
		Yes	1
		12. Analytical AI: classification and analysis of data for predictions to support decision-making	
		No	0
		Yes	1
	Relationship of AI with the phases of the journalistic production process	**13. Use of AI in information retrieval: automation of information collection and documentation**	
		No	0
		Yes	1
		14. Use of AI in information production: automated content production	
		No	0
		Yes	1
		15. Use of AI in information distribution: information distribution and relationship with the audience	
		No	0
		Yes	1
	Relationship of AI to the standard functions of journalism	**16. Effects on the role of informing the public about authorities and powerful actors**	
		No	0
		Yes	1
		17. Effects on the investigation and surveillance function	
		No	0
		Yes	1
		18. Effects on the function of fostering social empathy	
		No	0
		Yes	1

		18. Effects on the role of providing a public forum for debate	
		No	0
		Yes	1
		18. Effects on the role of serving as an advocate for diverse policies and viewpoints	
		No	0
		Yes	1
		18. Effects on the function of defending democracy	
		No	0
		Yes	1
CHALLENGES IN THE USE OF AI ASSOCIATED WITH MEDIA ACTORS	**Challenges for the industry**	**19. Economic viability of AI development**	
		No	0
		Yes	1
		20. Legal responsibility for generated content	
		No	0
		Yes	1
		21. The creation of content about people	
		No	0
		Yes	1
		22. Ethics in the use of data	
		No	0
		Yes	1
		23. The transparency of algorithms	
		No	0
		Yes	1
	Challenges for professionals	**24. The loss of the symbolic capital of journalists as mediators**	
		No	0
		Yes	1
		25. Job losses	
		No	0
		Yes	1
		26. Adaptation of training for professionals	
		No	0
		Yes	1
		27. The emergence of new professional roles	
		No	0
		Yes	1
		28. New relationships with technical personnel	
		No	0
		Yes	1
	Challenges for the	**29. Audience credibility of AI-generated content**	
		No	0

	audience	Yes	1
		30. Audience quality of AI-generated content	
		No	0
		Yes	1
		31. Audience accessibility and amenability of AI-generated content	
		No	0
		Yes	1
BENEFITS AND DISADVANTAGES OF THE USE OF AI IN PRODUCTION PROCESSES	Benefits	**32. Accuracy: reduction of errors in the verification of information and in the drafting of information**	
		No	0
		Yes	1
		33. Accessibility: improved readability of journalistic pieces, adaptation to multiple platforms and to people with disabilities	
		No	0
		Yes	1
		34. Diversity of information: detecting peripheral visions, improving the context through translation services, diversity of points of view (gender, political, linguistic)	
		No	0
		Yes	1
		35. Relevance: issues important to social life, thought-provoking topics, improvement of personalization services	
		No	0
		Yes	1
		36. Speed: acceleration of transcription and editing processes, improved distribution according to the routines of the audience	
		No	0
		Yes	1
		37. Total benefits stated in the journalistic text	
	Damage	**38. Accuracy: reduction of data quality, proliferation of disinformation (fake news, deep fakes), suppression of the appropriate context for correct interpretation**	
		No	0
		Yes	1
		39. Accessibility: use of information from fake accounts, incorrect levels of personalization of information, widening of the digital divide, payment for access to information	
		No	0
		Yes	1
		40. Diversity of information: biases and lack of transparency in algorithm configuration, excessive repetition of popular topics, proliferation of hate speech, development of echo chambers or information bubbles	
		No	0

		Yes	1
		41. Relevance: absence of journalistic principles in the algorithm, recurrence of use and structure of topics that lead to clickbait, disconnection from the audience	
		No	0
		Yes	1
		42. Rapidity: reduction of verification processes, slowing down of in-depth analysis and contextualization, saturation of the audience due to information overload	
		No	0
		Yes	1
		43. Total benefits stated in the journalistic text	

Source: Authors' own creation

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DISINFORMATION AND GENDER BIAS IN ARTIFICIAL INTELLIGENCE: ANALYSIS, IMPACT, AND PROPOSALS FOR TECHNOLOGICAL EQUITY

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INTRODUCTION

Gender bias in AI is one of the most pressing issues in contemporary technological development. Research has highlighted the lack of diversity in both the development teams and the datasets used, resulting in systems that not only reproduce but also amplify pre-existing gender stereotypes (Leavy, 2018; Nadeem et al., 2020). This underscores the need to implement corrective measures such as the inclusion of gender perspectives and equity principles, starting from algorithmic design.

On the other hand, digital platforms also act as amplifiers of misogynistic discourses and gender disinformation (Cabañes, 2020), negatively impacting women's safety and well-being (Benjamin, 2019), which reinforces the urgency of analyzing how media literacy can empower audiences to confront these dynamics.

As technology becomes a central element of daily life, concerns about its impact on gender equality are also growing (Liu, 2024). Algorithmic systems are not neutral but reflect the biases and limitations of those who design them and the data used to train them (Wellner, 2020; Buijsman and Jänicke, 2021). In this

context, it is crucial to examine the social effects of these technologies and propose strategies to mitigate them.

METHODOLOGY AND RESEARCH HYPOTHESIS

Three fundamental hypotheses are proposed herein:

1. AI-generated disinformation perpetuates gender stereotypes in society.
2. Algorithmic biases negatively impact women's career opportunities.
3. Gender media literacy contributes to reducing discrimination and disinformation, thus promoting equity.

These hypotheses are analyzed through a systematic literature review based on the key concepts of "gender disinformation," "gender bias," and "artificial intelligence," along with synonyms and related definitions (such as "gender disinformation," "disinformation," "gender bias," "gender equality," and "femtech"), both in the field of journalism and in the media.

ANALISYS

The gender biases that are present in artificial intelligence (AI) algorithms play a crucial role in reproducing discriminatory patterns inherent to the data used during their training. For example, cases of hiring systems that penalize women and facial recognition technologies that suffer from significantly higher error rates for women and racialized individuals have been documented (Crawford, 2013; Greenfield et al., 2018). These failures reflect not only technical deficiencies but also a lack of diversity in the teams responsible for the design and training of such systems. Cases such as Amazon's algorithm that automatically downgraded resumes from female applicants show how seemingly objective decisions can be imbued with social bias, thus reinforcing existing inequalities. These situations highlight the importance of implementing systematic audits, ensuring transparency in design processes,

and adopting ethical principles from the very early stages of technology development (Lambrecht and Tucker, 2016).

On the other hand, the feminization of technologies reinforces gender stereotypes that perpetuate traditional roles. Virtual assistants such as Siri and Alexa, by incorporating female voices associated with service and care tasks, reflect a cultural construction that links the feminine with characteristics such as obedience and availability (Sutko, 2020; Costa & Ribas, 2019; UNESCO, 2019). Moreover, humanoid robots such as Sophia consolidate the objectification of women, thus heightening technological and social inequalities (Zimmerman, 2018). These design decisions are not accidental but respond to cultural dynamics that reinforce subordinate behaviors in technologies, conditioning not only the interactions of users but also their perception of the role of women in technological fields (Nomura, 2020; Eyssel & Hegel, 2012). This phenomenon underscores how gender representations in technologies can impact both the design of tools and the narratives that legitimize structural inequalities.

In this context, gender media literacy emerges as a key tool to counteract such dynamics. Promoting inclusive digital skills enables people to develop critical thinking that facilitates the identification of biases in technological systems, as well as ensuring and supporting women's and girls' access to STEM education. According to UNESCO, education in this area is essential to move toward a more equitable society (García Matilla, 2015). This approach not only strengthens the ability of audiences to recognize biases but also drives their active involvement in questioning the structures that support them. In addition, ensuring that emerging technologies reflect equitable values can contribute to greater public confidence in their use, an essential aspect in our increasingly digitized world (García Matilla, 2015; López Safi, 2015; Buitrago, Navarro, & García Matilla, 2015).

An analysis of these issues shows that technologies are not neutral, but rather reproduce and amplify pre-existing inequalities. The dynamics of gendered disinformation, biases in AI algorithms, and the feminization of technologies interact to reinforce stereotypes and structural constraints that restrict women's access to the public sphere.

CONCLUSIONS

The results confirm the hypotheses proposed herein. Firstly, it is corroborated that disinformation generated by AI reinforces gender stereotypes, making it difficult for women to access leadership positions. Secondly, it has been shown that algorithmic biases negatively impact career development opportunities for women, perpetuating inequalities in key sectors. Finally, gender media literacy is presented as an effective tool to reduce discrimination and promote inclusive technology.

The relationship between disinformation and gender stereotypes is of particular concern, as these phenomena reinforce discriminatory narratives that affect women's credibility and participation. In addition, the examples of algorithmic biases analyzed herein, such as recruitment systems or facial recognition algorithms, illustrate how such technologies can perpetuate inequalities if not developed in an ethical and responsible way.

On the other hand, gender media literacy is presented as a key strategy to empower people to identify and question such prejudices. This approach is essential to ensure that technologies are not only more inclusive but also more representative of a diverse society.

In summary, addressing these issues will require a comprehensive approach that combines education, regulation, and technology. The incorporation of gender perspectives starting from technology design, the encouragement of inclusion in development teams, and the promotion of critical aspects of

education are key strategies to build fairer AI systems. It will thus be possible to move toward a society where technology is a tool for, rather than a barrier to, equity. Only with coordinated and sustained efforts will it become possible to achieve technological development that truly benefits everyone.

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COMING OF AGE: DRIVERS AND CONSEQUENCES OF ARTIFICIAL INTELLIGENCE ON THE NEWS PUBLISHING ECONOMY

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INTRODUCTION

Newsrooms have ascended into an age of rapid change thanks to the introduction of Artificial Intelligence (AI) (Linden, 2024; Sjøvaag, 2024). Technologies birthed from AI, including generative AI (GenAI) models like ChatGPT, are reshaping the production and distribution of news in real time (Cools & Diakopoulos, 2024; Wu, 2024; Gutiérrez-Caneda et al., 2024). The ubiquitous dissemination of these technologies has made it possible for journalists and editorial staff around the globe to implement AI to optimize media workflows, automate routine tasks, analyze large datasets, uncover valuable insights, and combat misinformation (Guzman & Lewis, 2019; Ahmad et al., 2024; Pinto & Barbosa, 2024; Adjin-Tettey et al., 2024). However, news publishers are often reliant on large tech companies like Meta and Google to develop their AI solutions, services, and infrastructures due to financial and engineering limitations (Simon, 2022).

These changes raise fears that AI will replace journalists' jobs - creating resistance to change that has been well documented in research (Wu et al., 2024; Adjin-Tettey et al., 2024; Peña-Fernández et al., 2024). For years, journalists have expressed concerns about encroaching AI technologies (Ufarte-Ruiz et al., 2024; Linden, 2024). Media professionals believe that AI will hamper journalistic integrity, create barriers that control their work, and may even be used to generate and spread misinformation (Gutiérrez-Caneda et al., 2024;

Ahmad et al., 2024). Furthermore, a recent experiment performed by the British Broadcasting Corporation examined AI output accuracy and discovered that AI models misrepresent news and share false facts to the end users stating "51% of all AI answers to questions about the news were judged to have significant issues of some form" (Elliott, 2025, p.2).

AI is even embedded deeply in the economics of news publishing. Programmatic advertising, a system where advertising decisions are automated using AI and data-driven audience targeting, has disrupted the advertising economy within news publishing (Sjøvaag, H. 2024). This has all but collapsed the traditional two-market system in which news publishers acted as bridge between advertisers and the audience they serve via localized ads (Sjøvaag, H., & Owren, T. 2021).

The goal of this paper is to synthesize these various challenges outlined above - newsroom adoption, shifting economic business models, platform partnerships - to understand how news organizations are navigating the real-time disruptions occurring because of AI.

STATE OF THE ART

AI and the Economy of News Publishing

AI advancements in the newsroom are often spearheaded by economic pressures and have long been part of the revenue-generating arm of news publishing (Sjøvaag, 2024; Linden, 2024). Currently, publishers tend to outsource their monetization to third-party platforms, like Google or Meta, who use AI to assist with user data storage, audience reach, and serving readers with programmatic advertising (Sjøvaag & Owren, 2021; Nechushtai, 2018; Braun & Eklund, 2019).

Furthermore, Sjøvaag (2024) suggests that newsrooms adopt AI as a necessity rather than a choice, with large tech companies exerting technical and economic pressures. Sjøvaag states, "news media outsource more and more of their monetization to third-party services that link content with consumers through programmatic advertising. News media also largely outsource distribution to platforms relying on automated processes to reach audiences. Moreover, their audience data and content catalogs are housed by cloud platforms whose data optimization processes rely on artificial intelligence." (Sjøvaag, 2024, p. 252).

Partnerships or Dependency?

Direct partnerships between news publishers and AI developers are not so straight-forward. In 2023, German news publisher Axel Springer licensed their content to AI developer OpenAI to train their Large Language Model (LLM) on real-time copyrighted journalistic content in exchange for tens of millions of dollars (Soper, 2023). In that same year, the New York Times (NYT) sued OpenAI for copyright infringement claiming the developer trained their models on the newspaper's content without permission (Robertson, 2024). However, the allure of using AI is too grand, even for the NYT, who has since directed its journalists to use OpenAI tools in their newsroom during litigation (Benton, 2025).

Moreover, AI-driven news content lacks clear attribution, raising ethical concerns about authorship and accountability (Scheffauer et al., 2024) while also acting as a direct competitor in the sphere (Robertson, 2024). These concerns have led to further legal action, with the News/Media Alliance filing a copyright and trademark infringement case against Cohere Inc - an AI company valued at over $5 billion (News Media Alliance, 2025).

AI is increasing news organizations' dependence on platform companies, while these companies have historically controlled news distribution, AI adoption

now extends their influence to news production itself, threatening journalistic autonomy (Simon, 2022).

AI in the Newsroom

Contemporary research indicates that journalists and editorial staff are beginning to develop workflows involving GenAI (Wu, 2024). Journalists in Singapore are using GenAI to help develop headlines, generate questions for interviews, and identify trending keywords (Macalintal, 2024). Meanwhile, journalists in Dubai are using GenAI to "gather stories from raw data and turn these data into intelligent stories" (Ahmad et al., 2024).

SUGGESTED METHODOLOGY

There are a number of methodological approaches to research in the field of journalism. This study will use a mixed-approach of qualitative and quantitative methods including case study reviews and semi-structured interviews.

Case Studies

Case studies allow researchers to analyze specific implementations of AI in journalism, such as automated newsrooms, to understand their practical impact (Carlson, 2015). Since AI in journalism is still evolving, case studies provide early insights into organizational strategies concerning AI implementations and economic shifts (de-Lima-Santos & Ceron, 2022).

The planned research will examine three to five case studies focused on media organizations that have actively implemented AI or worked with platforms for AI solutions.

Criteria selection includes:

- The extent of AI integration in content production, audience engagement, and monetization.
- The economic models underpinning AI adoption, including partnerships with AI firms (e.g., Axel Springer's deal with OpenAI).
- The policies and editorial guidelines used to ensure AI-generated content maintains journalistic integrity.
- Sources of data will include public reports, corporate documents, industry analyses, contemporary reporting, and prior research studies.

Semi-Structured Interviews

Data collection in this field occurs in a number of ways, most predominantly through semi-structured interviews, as Cools and Diakopoulos (2024) state "semi-structured interviews were conducted as a means of facilitating purposeful and focused conversations. These interviews offered the necessary flexibility to delve into the subjects' insights, interests, and areas of expertise" (p.7).

Interviews are a well established methodology that allows for rich qualitative data collection (Guion et al., 2011) which often requires gathering personal insights and experiences that could not be captured through quantitative methods (Albizu-Rivas et al., 2024). Furthermore, semi-structured interviews allow researchers to adapt questions based on the journalist's responses, making it possible to probe further into areas of interest that emerged during conversations (Albizu-Rivas et al., 2024). Researchers have also used semi-structured interviews to get a deeper understanding of how business leaders react to disruptions in the industry (Sjøvaag, H., & Owren, T. 2021), a topic this paper specifically aims to understand further.

The study will conduct semi-structured interviews with key stakeholders, including journalists, editors, and newsroom executives working at three

digital news media organizations within the United States of America (USA). Participants will be drawn from three newsrooms that differ in content and audiences they serve. The organizations will be as follows:

- One organization serving news to a local audience such as a county newspaper
- One organization serving news to a national audience covering the United States
- One organization serving news to a global audience, similar to The New York Times, Business Insider, or Forbes

The interview questions will focus on:

- Perceived economic and editorial benefits and challenges of AI in the newsroom
- Strategies to adopt AI to increase revenue or introduce efficiency measures
- Strategies adopted to maintain editorial control
- Perceptions and attitudes towards platform partners
- In-house AI development potential

HYPOTHETICAL RESULTS

The following are hypothetical results based on existing research and trends synthesized from contemporary research and industry papers. Until the research is conducted, the following section is strictly hypothetical.

Deepening Legal Battles Between Platforms and Publishers

There is a rising trend in legal friction between news publishers and AI companies. 15 documented cases of copyright litigation are currently opened against AI developers and chip makers in the USA (Baker & Hostetler LLP,

n.d.). As previously mentioned, there is a unique, albeit conflicting, relationship between these companies. For instance, the NYT is directing its staff to use tools from OpenAI, the same company it is suing for copyright infringement (Benton, 2025).

Until these cases begin to be resolved there is no clear path forward for news publishers. This paper will aim to uncover the strategies that news publishers will develop based on legal rulings.

Economic Pressure as the Primary Driver of AI Adoption

News publishers are often reliant on big tech firms that provide technical infrastructure and grants, which reinforce a growing dependence on external platforms (Sjøvaag, 2024). As the technology becomes more available publishers may transition to in-house solutions deploying their own AI tools evidenced by The Washington Post (Fischer, 2024). They may also partner with alternative AI developers, like universities, to build lower-cost solutions (Adami, 2024).

Hybrid AI-Editorial Workflows & Ethical Frameworks

Successful AI adopters will likely implement hybrid models, where AI will assist in tasks such as content personalization, preliminary interviews, data analysis, and content summaries while human journalists oversee quality control and verification (Beckett & Yaseen, 2023; Thäsler-Kordonouri, 2024). As more journalists use AI tools, ethical frameworks and AI usage policies will begin to emerge in leading newsrooms, which according to a Thomas Reuters Survey of 200 journalists around the globe, only 13% of newsrooms currently have (Radcliffe, 2024).

A Paradigm Shift in Journalism as a Profession

Newsrooms may be more keen to hire journalists who are more tech-savvy and can use AI tools to develop stories, combining traditional journalistic knowledge with technical skills, as Danzon-Chambaud and Cornia (2024) state "...the adoption of a more abstract way of reasoning, which enables them [journalists] to master algorithmic production and to ensure that its outputs meet established professional standards and organisational norms and practices." (p.13). Lastly, journalists may begin to transition to self-branding, patenting their image and unique writing styles to protect themselves from encroaching AI systems that aim to replicate human journalists (Túñez-López et al., 2021).

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CITIZEN PERCEPTION OF ARTIFICIAL INTELLIGENCE: IMPACT AND APPLICATIONS IN JOURNALISM

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INTRODUCTION

The integration of Artificial Intelligence (AI) into journalism has significantly reshaped the news industry, enabling automation in news production, data analysis, and content personalization (Ufarte-Ruiz, Murcia-Verdú, & Túñez-López, 2023; Newman et al., 2024). Media organizations are increasingly relying on AI-driven tools to generate financial reports, sports summaries, and other data-driven content, with some platforms fully automating certain news categories. While AI is often seen as a means to enhance efficiency and optimize newsroom workflows, its growing presence raises fundamental questions about trust, credibility, and the evolving role of journalists (Sonni et al., 2024).

One of the key debates in AI-generated journalism concerns its impact on audience trust. Some studies suggest that AI-authored articles can be perceived as equally credible as human-written content, particularly when the AI's role is disclosed (Hofeditz et al., 2022). However, other research points to significant concerns regarding transparency, accuracy, and potential biases in automated news production (Forja-Pena et al., 2024). AI-generated journalism operates

within existing corporate and media structures, which means that its neutrality cannot be assumed (Bender et al., 2021). Scholars have argued that algorithmic content creation may still reflect biases from the data it is trained on, the interests of its developers, or the influence of the prompts used by human journalists (Mehrabi et al., 2021). These factors make the perception of AI as an objective news source highly contested, particularly among audiences with a deeper understanding of AI technologies.

METHODOLOGY

A qualitative study was conducted to examine public perceptions of AI using focus group methodology (Masip et al., 2021; Calvo & Rojas, 2024; Volk et al., 2024). The study aimed to explore three main objectives: first, to assess public knowledge and usage of AI, including perceptions, expectations, and its professional and personal applications; second, to analyze perceptions of AI in journalism, focusing on trust, objectivity, and its positive and negative aspects; and third, to examine how audiences detect potential manipulation in AI-generated videos.

Five focus groups were held, each lasting two hours: one with seven participants and four with eight. Groups included participants aged 18–25 (one focus group), 26–35 (two), and 36–50 (two), all from Barcelona and its metropolitan area, with equal gender representation, diverse educational backgrounds, and at least 50% regular news consumers.

Two focus groups were classified as medium-low AI users, with half of the participants aged 18 to 25, while two focus groups were categorized as medium-high AI users, with half also aged 18 to 25. The fieldwork was conducted at GESOP facilities in Barcelona, equipped for holding focus groups and their observation, between June 25 and July 4, 2024.

RESULTS

Participants with a medium-high AI usage profile, typically mid-to-high-level professionals, are enthusiastic and knowledgeable about the technology, understanding the importance of prompting for quality results. Medium-level users are less experienced, adopt a cautious approach, and rely on intuitive rather than formal knowledge. Medium-low users show curiosity but remain hesitant and disconnected from AI applications. Older groups express more concern about data sharing and misuse. There are potential differences in AI use influenced by education and social class.

Participants note that AI has influenced journalism as a supervised auxiliary tool and, in some cases, as a substitute. However, they emphasize that AI cannot originate news, as it relies on sources provided by journalists, and stress the importance of verification to prevent errors.

When it comes from AI, it is associated with lower value compared to information produced by a human. However, the ability to integrate data and associate it with the idea of greater rigor and precision gives a positive value to the use of AI in journalism.

AI's ability to access numerous sources is seen as positive, but its lack of transparency in selection and processing reveals a gap in terms of traceability. In this sense, it is considered that combining AI with journalistic functions is the most suitable approach, and participants emphasize the importance of the media brand, especially in the case of print media, as a key factor in generating trust and credibility. Some participants question AI's neutrality due to corporate interests and the influence of the prompt provided by the journalist or media outlet.

The main strategies used to verify the authenticity of online content are diverse and include both direct review of the material and consultation of multiple

external sources. Google search is a fundamental tool for verifying information. Social media also plays a crucial role in this process, especially platforms like X. On platforms like TikTok and Instagram, using hashtags or influencers to verify information has become a common practice among users.

Trusted newspapers and news websites remain a key strategy for obtaining more reliable information. Another indicator of a potential fake news story is the scarcity of available information on the topic. However, the knowledge and use of fact-checking websites remains low among participants.

For participants, it is considered necessary to regulate the identification of AI-generated content, especially in audio and video, and establish criteria for written press, indicating its use when information has been largely created by this technology. Additionally, the importance of regulating data security and protecting intellectual property rights in the interaction with AI is emphasized.

CONCLUSIONS

The generation of trust emerges as a fundamental aspect for media outlets in an increasingly AI-influenced context, where verification and the role of professionals in journalistic functions are gaining growing importance. According to the focus group results, it is concluded that AI is already being used as a support tool, a practice accepted and considered logical by the participants.

However, there remains some reticence toward content generated by AI, although such content could be accepted in specific formats such as chronicles, simple news stories, graphics, and data. Participants deem the involvement of the human factor essential in detecting news and creating other types of content, such as analysis, evaluations, and opinions on current events or debates, as well as live broadcasts, such as sports events or conflicts. In these contexts, trust, personality, and the journalist's experience are particularly

valued, leading to the perception of AI more as a complement rather than a substitute for journalistic work.

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RESEARCH ON DIGITAL COMMUNICATION

BASQUE FEMINISM ON SOCIAL MEDIA

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INTRODUCTION

The Internet and social networks have caused a seismic shift in the way we communicate. For this reason, the analysis of communicative relationships taking place in the digital realm has become a significant research area. The study of feminist claims and language normalization processes has become essential in the digital sphere; after all, technologies are not just a reflection of

society, they are society itself (Astudillo-Mendoza et al., 2023), and the power relations that dominate and are reproduced depend on how these networks are used. Social networks have provided feminism with opportunities for dialogue and collaboration (Ott, 2018), and along with other spaces and forums, women can actively participate in social and political discussions. Thus, social media can help raise awareness about feminist claims, but at the same time, they can serve as platforms for antifeminist messages and amplify patriarchal ideas (Banet-Weiser, 2018). Additionally, from a linguistic perspective, the use of social networks has become crucial, as they can help revitalize languages and secure spaces that were previously unavailable. Finally, researchers have highlighted the similarities between the feminist movement and the Basque language movement, due to the way power relations operate within them (Agirre & Eskisabel, 2019).

STATE OF THE ART

Feminism has evolved in distinct waves throughout its history, each responding to the socio-political context of its time. Although there is still no full consensus, many theorists argue that feminism is currently immersed in its fourth wave. The fourth wave, closely linked to the #MeToo movement, focuses on issues of sexual harassment and violence, proving that feminism remains a vital force in modern society (Laudano, 2019). Otra de las características que se le atribuyen a esta ola es su tendencia global y, en ello, tienen gran impacto las redes sociales.

In short, it has transformed the field of communication and the strategies of expression of social and political movements and, in the case of feminism, it has also offered them the opportunity to find a place that has not been found in traditional media. The feminist movement began a long time ago in an attempt to echo the main demands; in this way, it has united different media and tools, but the street has undoubtedly been the main area. The network

offers him a new place. Moreover, according to several experts, it is the basic element of the so-called fourth wave (Laudano, 2019; Munro, 2013).

In the Basque Country, feminism was deeply intertwined with the struggles of the 1960s, particularly the cultural and political movements for independence, where women began to emerge as active participants (Epelde et al., 2015). During the 1970s, feminist movements gained autonomy, especially in Norther Basque Country, gradually spreading to the south despite the challenges posed by Francoist repression. The 1980s saw the formalisation of feminist institutions like Emakunde, and by the 1990s, feminism was increasingly integrated into academia (Esteban, 2019). With regard to social networks, Basque feminism has responded in an organized manner to instances of digital misogyny through specific campaigns, such as the one surrounding 'La Manada' (Orbegozo, Morales & Larrondo, 2019).

METHODOLOGY

The research design and data analysis process has been developed employing a mixed-methods approach that combines both qualitative and quantitative techniques. The study focuses on Twitter, a public platform with a strong Basque-speaking community, as the primary space for examining feminist discourse in Basque. The sample selection involves identifying Twitter accounts and posts related to feminism and the Basque language, ensuring a diverse range of perspectives.

The research employs thematic analysis to explore the content of tweets, identifying recurring themes and key topics in the feminist discussions. Network analysis has also been used to map the relationships between key actors and to evaluate their influence on the overall discourse. This helps to identify central figures and their impact within the feminist online community. Additionally, engagement metrics such as likes, retweets, and replies are analysed to measure the reach and impact of feminist messages in Basque.

RESULTS

The analysis of the network reveals that a relatively small group of accounts, often representing feminist organisations, activists, and scholars, play a central role in initiating discussions and influencing the wider conversation. These accounts are characterised by a high level of engagement, with their tweets being frequently retweeted and replied to. For instance, 20% of the analysed accounts generated over 50% of the engagement in the conversations, indicating their central role in the discourse. However, the study also identifies a broader group of users, including individuals who participate less frequently but still contribute to the diversity of perspectives within the conversation. This highlights the multiplicity of voices within the Basque feminist movement on social media.

A significant portion of the messages focuses on topics such as gender equality and sexual violence. There is a notable engagement with broader societal issues, such as the fight against misogyny and patriarchy, with many messages explicitly addressing the need for structural social change. However, there is also a marked presence of messages relating to the intersection of feminism and the Basque language. Messages disseminated in Basque serve to share experiences of empowerment and sorority among women and feminist collectives. They also highlight the importance of the Basque language in transmitting feminist values and are used to promote or announce feminist events, initiatives, and actions of various kinds.

Overall, the results show that social media, particularly Twitter, serves as a vital space for feminist activism in Basque, where discussions on gender and language intersect and contribute to ongoing societal debates.

DISCUSSION

Social media, especially Twitter, has become an essential platform for feminist activism, enabling a diverse range of voices to participate in public debates on gender equality and social justice. The research demonstrates that feminist conversations in Basque are not only focused on traditional feminist issues but also on the intersection of language and feminism.

The study also concludes that a core group of influential accounts, including feminist organisations and activists, play a central role in driving the conversation, with high levels of engagement from their followers. However, the findings suggest that the broader feminist community on social media includes many less active participants who contribute to the diversity of discussions and perspectives.

Furthermore, the research highlights the challenges and opportunities that social media presents for feminist activism. While it offers a platform for visibility and mobilisation, it also exposes feminist discourse to antifeminist backlash and the reinforcement of patriarchal ideas. In conclusion, the study underscores the importance of understanding the dynamics of online feminist activism in the Basque context and its potential to foster social and linguistic change.

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MEDIA DESENSITIZATION IN COVERAGE OF MASS AND SCHOOL SHOOTINGS: STATE OF THE ART AND FUTURE RESEARCH PROPOSAL

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INTRODUCTION

Mass shootings and school shootings have increased in frequency in the United States, leading to intense and repetitive media coverage (Gun Violence Archive, 2023; Schildkraut & Muschert, 2014). While journalists play a critical role in documenting these tragedies, they also experience repeated exposure to graphic content, survivor testimonies, and crime scenes. Thus, raising concerns about emotional desensitization and trauma-related stress (Feinstein et al., 2014; Simpson & Coté, 2006).

Media desensitization, the process by which repeated exposure to trauma reduces emotional responsiveness, is well-documented in media effects research (Lazarsfeld & Merton, 1948; Sparks & Sparks, 2000). Most studies have focused on public desensitization, showing that continuous exposure to violent media lowers empathic concern and emotional arousal in audiences (Oliver & Bartsch, 2010; Potter, 2006). However, journalists are uniquely positioned as both witnesses and reporters, facing first-hand exposure to real-world violence rather than mediated portrayals (Simpson & Boggs, 1999; Greenberg et al., 2009). The cumulative impact of this exposure on journalists' mental health, ethical decision-making, and reporting styles remains underexplored (Newman et al., 2003; Leaver, 2023).

This study investigates how repeated mass shooting coverage affects journalists' psychological well-being, ethical dilemmas, and emotional engagement. Using media framing theory (Entman, 1993), trauma journalism research, and empirical data from mass shooting archives, this paper argues for trauma-informed newsroom policies that safeguard journalist mental health while maintaining ethical reporting standards (McGinty et al., 2019; Meindl & Ivy, 2017).

STATE OF THE ART: UNDERSTANDING MEDIA DESENSITIZATION

The Role of the Media in Mass Shooting Coverage

Journalists serve as primary information providers in the aftermath of mass shootings, shaping public discourse and policy debates (Duwe, 2007; Altheide, 2009). Studies show that media coverage of mass shootings follows recurring narrative structures, typically focusing on:

- Shooter profiling – Investigating perpetrators' backgrounds, motives, and mental health histories (Schildkraut & Muschert, 2014; Silva & Capellan, 2019).
- Gun policy debates – Discussions on firearm regulation and legal loopholes (McGinty et al., 2019).
- Victim-centered storytelling – Humanizing tragedies through survivor and family narratives (Patterson, 2013).
- Law enforcement response – Evaluating police intervention strategies (Fox & DeLateur, 2014).

While these elements provide essential context, research suggests that repetitive media framing can normalize mass violence, reducing its emotional impact on both journalists and audiences (Kissner, 2016; Leaver, 2023). Additionally, extensive coverage of perpetrators has been linked to copycat shootings, a phenomenon known as the contagion effect (Meindl & Ivy, 2017; Towers et al., 2015).

Psychological Impact on Journalists

Journalists covering mass shootings experience long-term psychological stress, with symptoms similar to those observed in war correspondents and trauma workers (Feinstein et al., 2014; Greenberg et al., 2009). Studies have identified several adverse effects, including:

- Secondary Traumatic Stress (STS) – PTSD-like symptoms from repeated exposure to traumatic content (Simpson & Coté, 2006).
- Emotional numbing – Decreased emotional engagement and empathy over time (Newman et al., 2003).
- Moral injury – Cognitive dissonance stemming from ethical dilemmas in coverage (Pyevich et al., 2003).

Greenberg et al. (2009) found that journalists often suppress their emotional responses to maintain objectivity, but this leads to chronic emotional exhaustion and detachment. Moreover, Leaver (2023) suggests that newsroom culture prioritizes productivity over psychological well-being, discouraging journalists from seeking support for trauma-related stress.

Ethical Dilemmas in Reporting Mass Shootings

Journalists covering mass shootings must navigate difficult ethical decisions, including:

- Shooter glorification – Extensive focus on perpetrators may unintentionally promote notoriety (Meindl & Ivy, 2017; Schildkraut & Elsass, 2016).
- Use of graphic imagery – Publishing violent visuals can re-traumatize victims' families while desensitizing audiences (Patterson, 2013).
- Sensationalism vs. Objectivity – The pressure to attract viewership may lead to emotionally exploitative reporting (McGinty et al., 2019).

Studies indicate that journalists often struggle with balancing ethical considerations and professional obligations, particularly in high-pressure news environments (Leaver, 2023).

FUTURE RESEARCH PROPOSAL

Research questions

This study will explore:

- To what extent does repeated mass shooting coverage lead to emotional desensitization in journalists?
- What coping strategies do journalists use, and are they effective in preventing trauma?
- How do newsroom policies shape journalists' responses to trauma?

Proposed Methodology

The proposed methodology will employ a mixed-methods approach to examine journalist desensitization, combining quantitative content analysis, and qualitative interviews to ensure a comprehensive evaluation of psychological and ethical impacts (Creswell & Plano Clark, 2017).

Quantitative Analysis:

- Content Analysis – A systematic linguistic and thematic analysis would be helpful on mass shooting coverage from major news outlets. This will help determine whether framing language, emotional tone, and word choices have changed over time, potentially reflecting journalist desensitization (Entman, 1993; McGinty et al., 2019). Prior research has demonstrated that journalistic tone in crisis reporting evolves based on repeated exposure, with increased detachment and formulaic coverage

over time (Schildkraut & Muschert, 2014; Silva & Capellan, 2019). Additionally, this analysis will assess whether media narratives shift in response to public discourse, policy debates, and the evolving socio political landscape surrounding gun violence (Duxbury et al., 2018; Callaghan & Schnell, 2001).

Qualitative Research

- In-depth Interviews – Semi-structured interviews will be most crucial with journalists who have covered mass shootings, focusing on coping strategies, emotional responses, and ethical considerations (Newman et al., 2003; Simpson & Coté, 2006). Interviews will explore whether journalists perceive themselves as emotionally detached over time and how their experiences align with research on trauma and occupational stress in crisis reporting (Feinstein et al., 2014). These interviews will also examine the extent to which newsroom cultures and institutional policies influence journalists' emotional resilience and ethical decision-making in reporting traumatic events (Dworznik & Grubb, 2007; Keats & Buchanan, 2009).

- Newsroom Observations – Ethnographic fieldwork would provide a well rounded study, exploring newsroom settings, participant observation including editorial meetings and journalist discussions regarding mass shooting coverage. This will help determine how trauma exposure influences decision-making, narrative framing, and emotional discourse (Leaver, 2023; Greenberg et al., 2009). Research suggests that newsrooms rarely provide structured mental health support for reporters, often leaving them to develop personal coping mechanisms that may reinforce desensitization (Simpson & Boggs, 1999; Backholm & Björkqvist, 2012). This lack of institutional support may

contribute to a culture where journalists normalize distress, potentially impacting both their well-being and the way mass shootings are reported to the public (Feinstein et al., 2017; Pyevich et al., 2003).

Combining content analysis, and qualitative interviews allows for corroboration of data, ensuring that journalist desensitization is analyzed from multiple perspectives (Creswell & Plano Clark, 2017). Previous studies on media trauma and ethics have emphasized the need for both statistical analysis and personal narratives to capture the full impact of psychological stress on journalists (Newman et al., 2003; Feinstein et al., 2014).

Policy Recommendations

To mitigate journalist desensitization, newsrooms should:

- Implement trauma-informed journalism training (Newman et al., 2003).
- Offer mental health programs and peer support networks (Greenberg et al., 2009).
- Revised ethical guidelines to prevent shooter glorification (Meindl & Ivy, 2017).

EXPECTED RESULTS

Journalists covering mass shootings experience profound psychological and ethical challenges, as repeated exposure to traumatic events can lead to secondary traumatic stress, emotional numbing, and moral injury. The cumulative impact of this exposure not only affects their well-being but also influences how these tragedies are framed and reported to the public. To ensure responsible journalism while safeguarding journalist mental health, news organizations must implement trauma-informed policies, ethical guidelines, and mental health support systems. By fostering a newsroom

culture that prioritizes psychological resilience and ethical responsibility, journalists can continue to fulfill their duty to inform the public without compromising their own well-being. Ultimately, addressing desensitization in mass shooting coverage is essential to maintaining both journalistic integrity and the broader societal understanding of these tragic events.

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BREAST CANCER ON TIKTOK: EMOTIONAL SUPPORT, MISINFORMATION, AND THE CHALLENGE OF RELIABLE HEALTH COMMUNICATION

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INTRODUCTION

Breast cancer is a complex disease influenced by multiple risk factors, including genetic predisposition, hormonal changes, and lifestyle factors such as diet, alcohol consumption, smoking, and obesity (Martínez Basurto et al., 2014). Beyond its medical implications, a breast cancer diagnosis carries a profound emotional and psychological burden, affecting patients' well-being on multiple levels.

In the face of these challenges, many individuals turn to digital communities for emotional support, practical guidance, and a sense of belonging (Abt Sacks et al., 2013). Online interactions often foster empathy and gratitude, which Han

et al. (2011) identify as key mechanisms of emotional support. Additionally, studies highlight encouragement, religious faith, and direct requests for help as common forms of engagement within these spaces (Kim et al., 2012).

Social media platforms play a significant role in supporting breast cancer patients. Research by Attai et al. (2015) suggests that participating in Twitter discussions reduces anxiety and increases disease awareness. Similarly, Pluta (2022) argues that Instagram fosters positive emotions, self-acceptance, and shared experiences of coping. On TikTok, patients frequently share survival stories, educational content, and personal narratives, which help build community and awareness (Pluta & Siuda, 2022; Wellman et al., 2022).

However, not all content is beneficial. Johnson et al. (2022) report that over 30% of cancer-related content on Facebook contains misinformation. Similar concerns arise on TikTok, where Siva et al. (2022), and Liu et al. (2024) found that approximately 40% of breast cancer videos are created by non-medical users and often contain unreliable information. This is alarming, as cancer patients are particularly susceptible to misinformation and pseudoscientific treatments. Van Prooijen (2019) explains that individuals facing severe illnesses may seek out "magical" solutions for hope, while Čavojová et al. (2023) found that women with cancer are significantly more likely to believe in pseudoscientific claims than those without the disease.

Interestingly, medical professionals and health organizations create higher-quality content, yet their videos receive fewer views. This raises concerns about the need for healthcare professionals to adapt their communication strategies to reach larger audiences without compromising accuracy (Pérez & Ganzabal, 2023). Studies suggest that while medical content is often too technical, personal storytelling resonates more strongly with viewers, making it a more effective engagement tool.

ANALYSIS OF BREAST CANCER CONTENT ON TIKTOK

To examine the content, determine the profiles of users posting about this carcinoma, and identify the most recurring topics, we collected Spanish-language TikTok videos tagged with "breast cancer" between October 2022 and 2023 using Zeeschuimer software (Pérez et al., 2025).

These posts were sorted by engagement, and the top 270 were analyzed, focusing on aspects such as the role of the protagonist, age, emotional state, or type of content published.

The study categorized TikTok accounts discussing breast cancer into three main groups:

1. General content creators (49%), who occasionally address breast cancer.
2. Accounts exclusively dedicated to breast cancer (29%), often run by patients documenting their experiences.
3. Cancer-focused accounts (22%), covering breast cancer as part of broader oncological discussions.

Most videos are short, with 58.42% lasting under a minute, though longer formats are becoming more common (20.22% around two minutes, 21.3% over two minutes). Surprisingly, only 10.98% of videos are created by medical professionals, and no active contributions from official health organizations, NGOs, or foundations were found.

Women feature in 60% of the videos, primarily as patients sharing personal stories. Men appear in 27.78% of videos, usually discussing prevention rather than personal experiences. A small percentage (2.2%) includes actors or individuals without direct experience with the disease.

Regarding age demographics, the largest group (35.56%) is between 25 and 40 years old, followed by 40–65-year-olds (13.33%). Younger patients tend to

emphasize hope and resilience, whereas older patients focus more on disease progression and treatment impact. Notably, only 1% of videos feature women over 65.

A significant portion of the content (31.87%) portrays breast cancer as a life-or-death battle, while 28.57% highlight the physical consequences of treatment, such as mastectomies. In contrast, only 10.99% of videos focus on survivors who have overcome the disease, though many still discuss lingering effects like hair loss or lymphedema.

MISINFORMATION ABOUT BREAST CANCER ON TIKTOK

Misinformation is the most prevalent theme in breast cancer-related TikTok videos (23.08%). Unverified treatments and misleading claims—such as Ludwig Johnson's promotion of carrots as a cancer cure—are widely shared. Using criteria from the Spanish Association Against Cancer (AECC), researchers identified common misinformation tactics, including:

- Sensationalist titles
- Distorted interpretations of scientific research
- Oversimplification of complex medical concepts
- Omission of critical details

Other major themes include discussions about conventional treatments (19.78%), general breast cancer information and prevention (18.13%), messages of hope (12.09%), and community support (10.99%). Additionally, 7.69% of videos critique healthcare access disparities.

CONCLUSIONS

The study confirms that TikTok serves as a platform where breast cancer patients share their experiences and connect with others. The most viral videos are those that evoke strong emotions—32% depict the struggle against cancer,

while 28.6% focus on the physical consequences of treatment. These narratives help humanize the disease and foster empathy (Martínez & Arribas, 2023).

However, misinformation remains a significant issue, with 23.08% of videos promoting unverified claims. The prevalence of pseudoscientific content poses a public health risk, as it can influence patients' decision-making and encourage reliance on ineffective treatments (Porroche, 2017). TikTok itself is not the root cause of misinformation; rather, it is the deliberate use of sensationalist strategies that attract viewers at the expense of accuracy.

In conclusion, while TikTok provides valuable emotional support and awareness, stronger efforts are needed to combat misinformation and enhance the credibility of breast cancer content. Encouraging medical professionals to adopt more engaging storytelling techniques could help bridge the gap between reliable information and audience engagement.

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CRITICAL MEDIA LITERACY AND MIGRATION IN HIGHER EDUCATION: A CRITICAL DIALOGIC APPROACH

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INTRODUCTION

In the current information context, media discourses on migration tend to reinforce narratives that distort reality and contribute to the construction of an "otherness" marked by rejection and stigmatization (Creus and Martins, 2024). Although the migrant population represents a moderate percentage in Spain, social perceptions tend to overestimate their presence and impact. Previous studies have shown that disinformation and the repetition of media stereotypes have direct effects on the acceptance of inclusion policies and the integration of migrants into local communities (Ikuspegi, 2023).

Critical media literacy has been identified as a key tool to foster understanding of media discourses and provide citizens with tools to analyze and question the messages they receive on a daily basis (Buitrago Alonso et al., 2017). However, its implementation at the university level remains limited, partly owing to the lack of teacher training and the scarcity of public policies for its promotion in a structured way (Bezanilla et al., 2021).

This study proposes a methodology that combines expert interviews, questionnaires, and focus groups with dialogic strategies in the classroom to evaluate the effectiveness of critical media literacy in university education. The aim is to understand how such training in critical educommunication can

contribute to the development of a more informed perception regarding migration and the effects of the associated media discourses.

METHODOLOGY

The general objective of this study is to discuss the potential of educommunication from a critical dialogic viewpoint, as a solution to provide tools that can generate critical thinking among citizens.

The specific objectives were:

O1. To identify students' perception about migration and the role of the media in its construction.

O2. To implement a methodology based on critical dialog in the classroom to foster critical reading of communications on migration.

O3. To assess the impact of critical media literacy as a potential cross-cutting competency in higher education.

The research adopts a qualitative approach, combining seven in-depth interviews held with experts in critical media literacy and diagnostic questionnaires and focus groups involving 141 Education and Communication students at the UPV/EHU. NVIVO software was used for data analysis, allowing accurate coding, as well as content and critical discourse analyses (Gee, 2004).

In-depth interviews were conducted with seven experts in the field of educommunication and critical media literacy from different regions, including North America, Latin America, and Spain. Their discourses were analyzed on the basis of conceptual differences in the field of educommunication, the need to strengthen critical media literacy among both teachers and students, and the role of public policies in its implementation.

The focus groups were structured into five phases: initial diagnosis through a diagnostic questionnaire, presentation of selected media materials, conversational dialog, critical dialog (Bermejo-Berros, 2021), and collective discussion in a "fishbowl" format. This approach enabled the observation of the evolution of the participants' critical thinking through the process and an analysis of their ability to identify biased media narratives about migration.

RESULTS

The results obtained from the data analysis indicated that the student body has moderate awareness of media stereotypes but lacks critical tools to question them. In addition, 54.6% of the participants stated that they did not have sufficient resources to analyze information critically, while 97.87% showed interest in receiving training in critical media literacy.

The focus groups proved to be an effective tool for promoting critical media literacy, as participants improved their ability to identify and argue about migration-related media biases. In addition, a change in their perception of migration was observed, moving from simplified views to a more complex and informed understanding of this phenomenon.

The interviews highlighted critical educommunication as a fundamental strategy to development critical thinking and to address challenges such as disinformation, fake news, and the fascination with technology without responsible use. The need for teacher training in educommunication and public policies to guarantee its incorporation into formal education was also highlighted.

CONCLUSIONS

The findings confirm the importance of critical media literacy as an educational strategy to analyze and counteract biased discourses on migration. The

application of critical dialogic methodologies that encourage shared discussions and reflections in the classroom can transform students' relationship with the media, promoting a more informed and equitable understanding.

The introduction of public policies to reinforce training in critical media literacy and training of both teachers and students in educommunication is recommended.

Finally, we emphasize the need to continue research on innovative pedagogical strategies to consolidate critical educommunication in university education.

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