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MASS COMMUNICATION AND ENVIRONMENTAL EDUCATION: THE ROLE OF SOCIAL NETWORKS IN SOCIO-ENVIRONMENTAL MOBILIZATION

COMUNICAÇÃO DE MASSA E EDUCAÇÃO AMBIENTAL: O PAPEL DAS REDES SOCIAIS NA MOBILIZAÇÃO SOCIOAMBIENTAL

COMUNICACIÓN DE MASAS Y EDUCACIÓN AMBIENTAL: EL PAPEL DE LAS REDES SOCIALES EN LA MOVILIZACIÓN SOCIOAMBIENTAL

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João Felipe Fleury[1], Cinthya Amaral Santos[2]

ABSTRACT

This article discusses the interconnection between mass communication, social networks, and environmental education, emphasizing the importance of digital platforms in mobilizing and transforming social practices. The main objective is to examine how digital social networks intensify the dissemination of information related to the environment, encouraging collective mobilization and citizen participation in ecological issues. The study aims to analyze how digital communication can help overcome historical challenges faced by environmental education, such as curriculum fragmentation, lack of pedagogical resources, and the need for integration among different areas of knowledge. The research is grounded in the growing relevance of social networks as spaces for symbolic contestation, opinion formation, and social mobilization. In a context characterized by the rapid circulation of information, as well as the spread of false information and informational bubbles, it becomes essential to analyze methods that promote media and scientific literacy, enhancing individuals' critical thinking and analytical skills. The central question addresses how digital social networks can function as effective instruments in environmental education, facilitating the development of ethical, critical, and transformative awareness in the face of contemporary socio-environmental challenges. The chosen methodological approach is qualitative, exploratory, and bibliographic, based on the analysis of scientific literature, official documents, and case studies of environmental campaigns carried out on social networks, including both national and international examples.

Keywords: Environmental Education. Social Networks. Mobilization. Media Literacy. Citizen Participation.

RESUMO

Este artigo discute a interconexão entre comunicação de massa, redes sociais e educação ambiental, enfatizando a importância das plataformas digitais na mobilização e na transformação de práticas sociais. O principal objetivo consiste em examinar de que forma as redes sociais digitais intensificam a disseminação de informações relacionadas ao meio ambiente, incentivando a mobilização coletiva e a participação dos cidadãos em questões ecológicas. Pretende-se analisar de que maneira a comunicação digital pode auxiliar na superação de desafios históricos enfrentados pela educação ambiental, tais como a

[1] Master. Universidade Estadual de Goiás (UEG). E-mail: Jfelipe.contato@gmail.com
[2] Dr. Universidade Estadual de Goiás (UEG). Universidade Federal de Goiás (UFG).
E-mail: Camarals2013@gmail.com

fragmentação do currículo, a carência de recursos pedagógicos e a exigência de uma integração entre distintas áreas do conhecimento. A fundamentação da pesquisa está na crescente relevância das redes sociais enquanto espaços de contestação simbólica, formação de opiniões e mobilização social. Diante de um contexto caracterizado pela veloz circulação de informações, além da difusão de informações falsas e bolhas informativas, torna-se imprescindível analisar métodos que favoreçam a alfabetização midiática e científica, aprimorando o pensamento crítico e a habilidade analítica dos indivíduos. A questão central aborda como as redes sociais digitais podem funcionar como instrumentos eficazes na educação ambiental, facilitando o desenvolvimento de uma consciência ética, crítica e transformadora em face dos desafios socioambientais contemporâneos. A abordagem metodológica escolhida é qualitativa, de caráter exploratório e bibliográfico, alicerçada na análise de literatura científica, documentos oficiais e estudos de caso acerca de campanhas ambientais realizadas em redes sociais, englobando exemplos tanto nacionais quanto internacionais.

Palavras-chave: Educação Ambiental. Redes Sociais. Mobilização. Alfabetização Midiática. Participação Cidadã.

RESUMEN

Este artículo analiza la interconexión entre la comunicación de masas, las redes sociales y la educación ambiental, destacando la importancia de las plataformas digitales para movilizar y transformar las prácticas sociales. El objetivo principal es examinar cómo las redes sociales digitales intensifican la difusión de información ambiental, fomentando la movilización colectiva y la participación ciudadana en cuestiones ecológicas. Se busca analizar cómo la comunicación digital puede contribuir a superar los desafíos históricos que enfrenta la educación ambiental, como la fragmentación curricular, la falta de recursos pedagógicos y la necesidad de integración entre diferentes áreas del conocimiento. La investigación se basa en la creciente relevancia de las redes sociales como espacios de debate simbólico, formación de opinión y movilización social. En un contexto caracterizado por la rápida circulación de información, así como por la propagación de desinformación y burbujas informativas, se hace esencial analizar métodos que promuevan la alfabetización mediática y científica, mejorando el pensamiento crítico y las habilidades analíticas. La pregunta central aborda cómo las redes sociales digitales pueden funcionar como instrumentos eficaces en la educación ambiental, facilitando el desarrollo de una conciencia ética, crítica y transformadora ante los desafíos socioambientales contemporáneos. El enfoque metodológico elegido es cualitativo, exploratorio y bibliográfico, basado en el análisis de literatura científica, documentos oficiales y estudios de caso de campañas ambientales realizadas en redes sociales, abarcando ejemplos nacionales e internacionales.

Palabras clave: Educación Ambiental. Redes Sociales. Movilización. Alfabetización Mediática. Participación Ciudadana.

1 INTRODUCTION

The growing complexity of today's environmental challenges demands innovative strategies to promote socio-environmental awareness and responsibility. In this context, environmental education stands out as an essential domain for the formation of critical and committed individuals, able to intervene both locally and globally in the construction of sustainable societies. This article addresses the connection between mass communication, social networks and environmental education, emphasizing the role of digital platforms in the mobilization and transformation of social practices.

The main purpose of this research is to examine how digital social networks have enhanced the dissemination of information related to the environment, encouraging collective mobilization and citizen participation in ecological issues. It seeks to understand how digital communication can help overcome historical challenges of environmental education, such as the fragmentation of the curriculum, the scarcity of pedagogical resources and the need for integration between different knowledges.

The foundation for this study lies in the growing importance of social networks as environments of symbolic contestation, opinion formation and social mobilization. Faced with a context characterized by the rapid dissemination of information, as well as the diffusion of fake news and information bubbles, it is imperative to explore strategies that favor media and scientific literacy, improving critical thinking and the analytical skills of individuals.

The problematization that guides this work can be summarized in the following question: how can digital social networks act as effective tools in environmental education, promoting the development of an ethical, critical awareness capable of provoking transformations in the face of current socio-environmental challenges?

The methodological approach chosen is characterized by a qualitative research, of exploratory and bibliographic nature, based on the analysis of scientific literature, official documents and case investigations related to environmental campaigns promoted on social networks. Both national and international examples will be analyzed, with an emphasis on movements such as Fridays for Future, as well as Brazilian digital mobilization initiatives.

In summary, it is predicted that social networks, when used in a strategic and analytical way, have the potential to expand the reach of environmental education, foster the protagonism of young people and reinforce democratic participation in the protection of the environment. However, it is crucial to admit the limits and challenges of this process, particularly with regard to the quality of information and digital inclusion.

2 ENVIRONMENTAL EDUCATION AND MASS COMMUNICATION – THE ROLE OF SOCIAL NETWORKS

2.1 HISTORICAL CONTEXT AND NORMATIVE EVOLUTION OF ENVIRONMENTAL EDUCATION

The Intergovernmental Conference on Environmental Education, held in 1977 in Tsibilisi – USA, initiated a broad process at the global level so that conditions were formed for a new awareness of the value of nature. The educational field has grown transversally, so the possibilities of carrying out new experiences are materialized in the field of environmental education.

Agenda 21, approved during Rio 92, is an action plan to be implemented in all areas where man can impact the environment. In addition, it is a participatory document, which results in education and analysis of the situation of each country, to develop this educational maxim in order to plan a socio-environmentally sustainable future (MEC, 2007).

In addition, in the MEC document (2007) it is reported that:

> Also at the international level, the United Nations initiative to implement the Decade of Education for Sustainable Development (2005-2014), whose institution represents an achievement for Environmental Education, gains signs of recognition of its role in facing the socio-environmental problem, as it reinforces sustainability through Education worldwide. The Decade of Education for Sustainable Development enhances existing educational policies, programs and actions, in addition to multiplying innovative opportunities.

At the International Conference on the Environment, Society, Education and Public Awareness for Sustainability, held in 1998 in Thessaloniki – Greece, he defended the need to articulate actions in order to educate about environmental issues, based on the concepts of ethics and sustainability, as well as cultural identity and diversity (Sorrentino, 1998).

This document generated some norms, among them items 08 and 09 that reflect the need for environmental education, which is as follows:

> 8. A collective learning process, partnerships, equal participation and continuous dialogue are required between governments, local authorities, the educational and scientific community, companies, consumers, non-governmental organizations, the media and other social actors, in order to achieve awareness and seek alternatives, as well as to achieve changes in behavior and lifestyle, including consumption and production patterns in the direction of sustainability.
> 9. Education is an indispensable means of providing all women and men in the world with the ability to lead their own lives, to exercise personal choice and responsibility,

and to learn through a life free of geographical, political, cultural, religious, linguistic or gender restrictions.

There is a need for social practices to multiply, based on the right of access to information and environmental education, according to an integrative perspective. With this system, it is thought to increase greater citizen access to information and transparency in relation to urban environmental problems (Jacobi, 2003).

This principle assumes a transformative function, in which the co-responsibility of individuals is the main objective in order to promote sustainable development. Environmental education has become a necessary condition for changing a picture of growing environmental degradation (Tamaio, 2000). The educator also has the function of helping in the construction of environmental references, as instruments of a social practice centered on respect for nature.

Education is everyone's right and environmental education must be based on critical and innovative thinking, at any time or place, for the promotion, transformation and construction of society. It is a type of education that can be collective or individual, with the main objective of forming citizens to have not only local consciousness, but also planetary awareness and who respect the principles of self-determination of peoples and the sovereignty of nations (UNESCO, 1992).

The Treaty on Environmental Education for Sustainable Societies and Global Responsibility (2020) teaches that it is a political act and the holistic perspective must be involved, focusing on the relationship between human beings, nature and the universe, in an interdisciplinary way. It should focus on solidarity, equality and respect as strategic goals, of interaction between cultures and focused on the democratic context.

The Treaty also reflects on some issues of paramount importance, related to development and the environment, which reflect that:

1. Environmental education should facilitate mutual and equitable cooperation in decision-making processes, at all levels and stages.
2. Environmental education must recover, recognize, respect, reflect and use indigenous history and local cultures, as well as promote cultural, linguistic and ecological diversity. This implies a vision of the history of native peoples to modify ethnocentric approaches, in addition to stimulating bilingual education.

Education is also one of the goals for sustainable development. In a document prepared by the United Nations Educational, Scientific and Cultural Organization (UNESCO),

the importance of Environmental Education for Sustainable Development (ESD) is explained, as it aims to develop skills that enable people to reflect on their own actions, both from a local and global perspective (UNESCO, 2015).

For sustainable societies and global responsibility, education is governed by principles, among them, that education is everyone's right, and everyone is a learner and educator at the same time. The basis is critical thinking, informal, formal or even non-formative, for society. It encompasses a collectivity or a single individual, but the purpose is consciousness. Educating for the environment must be based on ideology, with the involvement of the relationship between human beings, nature and the universe, stimulating solidarity, equality and democracy in the interaction between cultures.

Still in the field of principles, the Treaty on Environmental Education for Sustainable Societies and Global Responsibility (1992) adds others of great importance:

> 7. Environmental education must address critical global issues, their causes and interrelationships from a systemic perspective, in their social and historical context. Primordial aspects related to development and the environment, such as population, health, peace, human rights, democracy, hunger, degradation of flora and fauna, must be addressed in this way.
> 8. Environmental education should facilitate mutual and equitable cooperation in decision-making processes, at all levels and stages.
> 9. Environmental education must recover, recognize, respect, reflect and use indigenous history and local cultures, as well as promote cultural, linguistic and ecological diversity. This implies a vision of the history of native peoples to modify ethnocentric approaches, in addition to stimulating bilingual education.
> 10. Environmental education should stimulate and enhance the power of diverse populations, promoting opportunities for grassroots democratic changes that stimulate the popular sectors of society. This implies that communities must resume the conduct of their own destinies.

In six more topics, it also lists the importance of environmental education valuing different forms of knowledge, in addition to training people for any conflict that may occur. The 13th principle speaks of promoting dialogue with individuals and institutions for the creation of new ways of life, thinking about future generations.

The last principles express some needs, such as:

> 14. Environmental education requires the democratization of the mass media and their commitment to the interests of all sectors of society. Communication is an inalienable right and the mass media must be transformed into a privileged channel of education,

not only disseminating information on an equal basis, but also promoting the exchange of experiences, methods and values.
15. Environmental education must integrate knowledge, skills, values, attitudes and actions. It must convert every opportunity into educational experiences of sustainable societies.
16. Environmental education should help develop an ethical awareness of all the forms of life with which we share this planet, respect their life cycles, and impose limits on the exploitation of these forms of life by human beings.

When well carried out, environmental education provides changes in attitudes, values and behaviors in the actions of human beings, and can bring important social measures. Chaves (2017) explains that man needs to change his thinking to survive, or else accept the limitations that will come from environmental destruction. Therefore, teaching good values and the basic premises of sustainability is essential and productive.

Education and environment are essential as they mediate the various human and social relations and require education professionals to understand the complexity of the connection between society, the environment and teaching. Environmental knowledge problematizes fragmented knowledge and integrates it in an interdisciplinary way, thus being able to generate changes and a social rationality of engagement for the construction of environmental awareness (Leff, 2015).

In order to add and update Law No. 9,795/1999, which deals with Environmental Education in Brazil, Law No. 14,926/2024 was sanctioned in July 2024, which ensures the insertion in school curricula of themes related to climate change, biodiversity protection, and socio-environmental risks and emergencies in Brazil.

Educational institutions should promote research, teaching and extension actions aimed at developing instruments to ensure educational actions, in order to preserve, mitigate and adapt children and adolescents to the reality of these subjects.

2.2 CURRENT PRINCIPLES AND CHALLENGES OF ENVIRONMENTAL EDUCATION

The implementation of Environmental Education (EE) in educational institutions continues to face structural and pedagogical obstacles that hinder its insertion in the school routine. One of the challenges mentioned by educators concerns the difficulty in integrating Environmental Education in an interdisciplinary way. Despite admitting the importance for the formation of citizens, several educators mention that the fragmented structure of the curriculum, based on independent disciplines, makes it impossible to have an appropriate systemic approach to environmental phenomena.

As Leff (2002) emphasizes, the lack of an interdisciplinary approach restricts the critical understanding of ecological and social complexities, obstructing the development, by students, of the skills necessary for the integrated analysis of environmental issues. Another frequent obstacle is the lack of teaching materials and adequate pedagogical resources for AS education.

According to Dias (2000), the lack of accessible and contextualized tools compromises the elaboration of relevant educational practices, limiting the creativity of educators and the active participation of students. The situation becomes more critical due to the lack of appropriate training of educators, who often perceive themselves as inadequately prepared to address environmental issues using innovative methodologies.

Carvalho (2004) argues that continuing education is an essential component to enable educators to implement innovative pedagogical practices that are capable of interacting with contemporary socio-environmental emergencies. Sauvé (2005) adds that the lack of investments in training compromises the implementation of Environmental Education programs aimed at promoting changes in attitude and behavior.

Notwithstanding such difficulties, the information examined also shows relevant possibilities for strengthening Environmental Education (EE) in the school context. Among them, the conscious use of digital technologies stands out, which have the potential to increase student engagement and make the learning process more dynamic.

Moran (2013) argues that the proper use of technological tools provides interactive educational experiences, expands access to information and enables new approaches to dialogue on current environmental issues. The incorporation of multimedia resources and digital platforms into the curriculum favors the elaboration of contextualized learning and stimulates the protagonism of students.

In addition to technological resources, collaborations between educational institutions and local communities stand out as one of the most effective potentialities for the promotion of Environmental Education. The reports from educators, which include initiatives such as school gardens, cleaning efforts, collective recycling actions and community campaigns, demonstrate that the integration between the school environment and the territory results in contextualized learning, with social meaning and a significant power of mobilization.

Carvalho and Figueiredo (2015) emphasize that these collaborations expand social capital and establish support networks essential for the solidification of sustainable practices. According to Putnam (2000), such interactions strengthen community ties and encourage

joint participation, favoring citizen education and the development of a sense of environmental responsibility.

Another aspect recognized as promising is the development of critical approaches in Environmental Education. Sterling (2001) argues that an effectively transformative environmental education must challenge the cultural, economic and political paradigms that promote environmental degradation, inciting individuals to question power relations and consumption patterns.

Teachers who incorporated this approach reported a considerable increase in student involvement, as well as a greater willingness of students to reflect on their customs, values and daily practices, recognizing themselves as active participants in the formation of sustainability.

2.3 MASS COMMUNICATION AND SOCIAL NETWORKS

The socio-technical transformations brought about by the electric revolution and the consolidation of the mass media have introduced new dimensions of complexity to contemporary experience. Nicolau Sevcenko (2001) cataloged Modernity as a historical process segmented into three main stages. The first period, which covers the sixteenth century to the middle of the nineteenth century, refers to the initial phase of marked technological evolution, characterized by the inclusion of new sources of energy and innovations in the means of transport and communication.

The subsequent phase is characterized by the rise of electricity, internal combustion engines, the chemical industry, and the improvement of the means of mass communication. Finally, in the third stage, even though the belief in scientific advancement seems to reach its peak, humanity is faced with the dark side of this same technological rationality, manifested in the great wars that marked the twentieth century.

According to Sevcenko (2001), Modernity manifests itself as an uninterrupted movement of elevations and discontinuities, comparable to the fast path of a roller coaster. This metaphorical representation makes it possible to illustrate an era marked by the speed of change, the perception of fragmentation and an atmosphere of generalized instability, culminating in what the author recognizes as a diffuse sense of "imminent apocalypse".

It is in this context characterized by the acceleration of flows and the intensification of social relations that new forms of sociability emerge and, mainly, new configurations of collectivity. Among the essential transformations that occurred in this period, the solidification

of the means of mass communication stands out, a phenomenon that significantly modifies the interaction between the individual and the collectivity.

As problematized by Castro (2021), at the end of the nineteenth century, debates about the dynamics of crowds became central, and authors such as Gabriel Tarde established a distinction between the "public", described as a virtual, diffuse and more stable form, and the "crowd", linked to physical proximity and its transient character. This differentiation initiates a more elaborate understanding of masses, which begin to be understood as volatile entities, prone to rapid and uniform external influences.

This context is revisited and widely deepened by the thinkers of the Frankfurt School, notably Theodor Adorno and Max Horkheimer, who present the concepts of mass culture and cultural industry. According to the aforementioned authors, the development of mass media significantly transforms the system of symbolic production and dissemination.

The production of content is no longer an interaction between individuals and is now managed by institutions that have economic resources and advanced technology, which direct messages to broad population groups, converting them into essentially passive receptors (Adorno; Horkheimer, 2000). Although the dissemination of mass media expands and accelerates human perception, as McLuhan (2016) argues, it also generates homogenizing effects.

The choice of content emphasizes those that have the potential to attract a larger audience, which reduces the variety of messages disseminated and favors a market logic that prioritizes uniformity. Thus, although there is an increase in the amount of information accessible to the public, there is a parallel decrease in cultural diversity, favoring processes of alienation and symbolic homogenization.

Thus, the historical course of the mass media, as examined by Sevcenko, Castro, Adorno, Horkheimer and McLuhan, reveals a structural tension between the expansion of communication possibilities and the intensification of cultural standardization. It is an ambivalence inherent to Modernity, whose impacts continue to shape current social experience and exert a significant influence on the formation of subjectivities and the structuring of public life.

2.3.1 Evolution of social networks and their role in contemporary society and the environment

The rapid expansion of digital social networks has caused a profound reconfiguration in the communicative, cultural and socio-environmental dynamics of contemporaneity. The logic of interactions facilitated by platforms, characterized by Manuel Castells (2009) as "network society".

It has significantly transformed not only information flows, but also the ways in which individuals construct their perceptions of the world, establish social bonds, and acquire knowledge about complex issues such as sustainability and environmental citizenship. In this context, understanding the effects of social networks becomes essential to investigate how these environments influence social discourses, behaviors, and practices.

From a communicational perspective, the transition from traditional media to digitized ecosystems has caused a paradigmatic transformation. Communication, which was previously characterized by being linear and vertical, began to be configured as a horizontal, immediate and extremely participatory process. Authors such as Henry Jenkins (2013) emphasize that a connected and participatory culture promotes the incessant sharing of content, resulting in cultural communities organized by thematic affinities.

However, this "democratization of broadcasting" is not without challenges: the profusion of information increases the risk of disinformation, a phenomenon widely debated by Dominique Wolton (2011), who warns about the effect of excessive data on the understanding of reality. The characteristic language of social networks, consisting of memes, emojis, abbreviations, and community-specific codes, intensifies the emergence of a hybrid, dynamic, and fast-paced culture that connects people, but also fosters interpretive obstacles between different generations and social strata.

Interactions between individuals have also undergone structural changes. As Sherry Turkle (2011) argues, although platforms provide a sense of continuous connection, there is a tendency to superficiality of relationships and to replace physical presence with a performative presence.

In the field of education, social networks have played a progressively more significant function. As Moran and Valente (2013) point out, these environments act as spaces for distributed learning, where content moves in a dynamic, multimodal and accessible way.

Platforms such as Instagram, YouTube, and TikTok expand interaction with tutors, experts, and science communicators, enabling individuals to acquire knowledge through

interaction, collaboration, and collective curation. However, the lack of rigorous epistemological filters requires a critical attitude so that students and professors can distinguish reliable content from superficial or misleading narratives. Thus, as Pierre Lévy (2014) points out, collective intelligence is only materialized with ethical and responsible participation in the informational ecosystem.

The discussion about sustainability in social media represents another sphere of great relevance. Socio-environmental movements have identified in these contexts an effective tool to mobilize, disseminate information and promote awareness of ecological issues of a global nature. Digital campaigns expand the reach of environmental issues, promoting sustainable practices among individuals and exerting pressure on organizations to adopt a more transparent corporate culture, as indicated by Elkington (1998) from the perspective of the Triple Bottom Line.

Social platforms have thus become spaces for dispute over narratives related to environmental justice, conscious consumption, climate protection, and the preservation of biodiversity. However, as pointed out by Debord (1997), the logic of the digital spectacle has the capacity to convert environmental activism into a performance without content, a phenomenon referred to as "façade activism" or slacktivism.

In this context, engagement can be restricted to the symbolic diffusion of hashtags and images, without causing concrete impacts on social change. Thus, it is essential to differentiate between informed participation and superficial engagement, understanding that sustainability demands more than mere digital acts; It needs coordinated actions, efficient public policies and effective commitments.

Finally, social networks have become significant environments for companies to disclose their commitments to social and environmental responsibility. By employing digital platforms to disseminate goals, sustainable practices, and internal policies, these institutions collaborate to increase transparency and strengthen society's trust.

However, as pointed out by experts in organizational communication, including Baldissera (2009), the sustainability disclosed must be substantiated by sustainability actions actually implemented, in order to avoid *greenwashing* practices that compromise the credibility of messages related to the environment.

To understand this ecosystem, it is essential to recognize that social networks transcend the mere condition of neutral tools, configuring themselves as complex environments, immersed in symbolic disputes and multiple interests. Its effect goes beyond

the scope of communication and extends to ethical, social, political and environmental dimensions, demanding from users, whether individual, collective or institutional, conscious and critically oriented decisions.

2.3.2 Challenges and limits – Fake News, disinformation and information bubbles in environmental education issues

Environmental Education (EE), when understood in its political and pedagogical depth, goes far beyond the notion of a set of isolated actions aimed at rationalizing the consumption of natural resources, such as saving water and energy or classifying waste. Integrated in a society characterized by the massive and rapid dissemination of information, this area is positioned as an interdisciplinary field that connects diverse knowledge and fosters the elaboration of "environmental references" that can direct more equitable and sustainable social practices (Jacobi, 2003).

Instead of being restricted to a technical or behaviorist approach, critical Environmental Education suggests the interaction between scientific knowledge, traditional knowledge, daily experiences and media languages, considering contemporary communication as a strategic space for the dispute of meanings related to nature, development and socio-environmental justice.

In this informational scenario, the phenomenon of disinformation, notably the so-called fake news, poses significant challenges to environmental education. Misleading, distorted, or intentionally manipulated information about climate, biodiversity, fires, deforestation, or environmental policies spreads rapidly, often gaining more visibility than content based on scientific rigor.

Events such as Brexit, which took place in 2016, and the electoral election in Brazil in 2018 exemplify how disinformation can aggravate delicate public debates and benefit particular political agendas (D'Ancona, 2018; Dourado, 2020). When this same mechanism is applied to the environmental sphere, the impacts can be catastrophic: climate science loses credibility, environmental disasters are relativized, and the continuity of predatory practices is naturalized due to short-term economic interests.

In this context, fact-checking initiatives emerge as a pertinent response, characterizing what Ferrari (2018) describes as a paradigm shift towards more reliable information sharing. Platforms such as fact-checker *Fakebook.eco*, which are dedicated to debunking fraudulent

information and narratives related to the environment, play a significant educational role by confronting false claims with scientific evidence and historical data.

The author also adds that recent experience reveals that verification, in isolation, is not able to stop the spread of fake news, especially when it is related to pre-established beliefs, political identities and collective affections already solidified. Thus, scholars such as Da Silva Junior and Silva (2020) highlight the importance of integrating fact-checking and critical educational processes, which should enable individuals to analyze, compare, and question what they consume in the digital environment.

It is in this aspect that critical Environmental Education acquires a special importance. Far from being restricted only to the transmission of information, it seeks to enable individuals to interpret and intervene in the world, which involves working on aspects such as awareness, transformation of attitudes, improvement of analytical skills and aptitude to evaluate complex situations (Jacob; Luzzi, 2004).

In the particular realm of environmental disinformation, such an approach entails promoting "media and science literacy" that empowers learners, educators, and communities to recognize patterns of manipulation, identify reliable sources, understand the basic principles of issues such as climate change and ecosystem services, and contextualize incoming messages in a broader landscape of political and economic conflicts.

At the same time, it is necessary to admit the limitations and tensions of this undertaking. Distance Education (EE) operates in institutional environments that are generally characterized by an excessive curricular load, precarious working conditions for educators, unequal access to digital technologies, and the imposition of pressures for immediate results.

In this context, the defense of critical environmental education, integrated with the fight against fake news, implies the strengthening of public policies aimed at continuing education, the guarantee of adequate material conditions for work in educational institutions, and the expansion of partnerships with collectives, social movements, and independent information verification initiatives (Jacobi, 2003; Da Silva Junior; Silva, 2020).

This also involves the understanding that disinformation does not present itself as an isolated event, but rather as an indication of broader systems of power and communication formats guided by algorithmic logic, engagement, and monetization. Thus, in a society permeated by intense informational flows and the propagation of anti-scientific discourses,

critical Environmental Education performs the strategic function of contesting the very domain of truth, avoiding its reduction to simple technicality.

By mobilizing instruments such as verification platforms, academic studies, alternative media, and dialogical pedagogical practices, Environmental Education can play a balancing role in relation to the culture of disinformation, helping to form individuals able to critically interpret both the natural and digital environments. Permeated by epistemological, political and communicational difficulties, it is configured, therefore, as an essential sphere of resistance and democratic reinvention in times of socio-environmental and informational crises.

2.4 CASE STUDY AND FUTURE PERSPECTIVES OF COMMUNICATION FOR ENVIRONMENTAL EDUCATION

The Fridays For Future (FFF) movement emerges in 2018 as one of the most significant youth mobilizations globally in favor of climate defense. Originated by a small group of young Swedes who, while absent from classes, began to demonstrate in front of Parliament in search of concrete measures in the face of the climate crisis, the movement quickly crossed national borders.

The rapid spread of the demonstrations, driven mainly by social media and the media relevance of the figure of Greta Thunberg, has transformed the FFF into an international network of young activists engaged in the fight for climate justice (Druwe, 2022). The capillarity obtained by the movement reached various cultural contexts, including Brazil, where local nuclei dedicated to climate mobilization and the political involvement of students were formed.

Researcher Ana Druwe, linked to the School of Communications and Arts of the University of São Paulo (USP), emphasizes that the analysis of the particular dynamics of this engagement in the Brazilian context was the focus of her ethnographic investigation. For the author, the viral capacity of the FFF's initiatives was directly reflected in the global public discourse: the phrase "climate strike" was chosen as word of the year by *the Collins Dictionary*, and *Greta Thunberg* was nominated for the Nobel Peace Prize, evidencing the symbolic and political force of this transnational phenomenon.

This analysis is based on the concept of transmedia, which is understood as the interconnection of several communication platforms that, by generating complementary narratives, create a cohesive cosmos of meanings. Based on the work of Costanza-Chock

(2014), the FFF not only acts as a manifesto focused on the climate issue, but also as a collective narrative initiative that manifests itself simultaneously in short videos, posts, real-time broadcasts, hashtags, newsletters, and physical manifestations.

From a methodological point of view, the investigation is based on digital ethnography, an approach that enables a detailed analysis of interactions, discursive practices, and identity performances that occur in contexts mediated by communication technologies (Hine, 2015).

It examines content from the FFF platforms on *Instagram, Twitter and Facebook*, as well as newsletters, *WhatsApp* and Telegram groups, enriching this analysis through semi-structured interviews with activists and their own participation in public demonstrations. In this context, digital ethnography provides conditions to understand how young people elaborate communication repertoires, establish bonds of belonging and reconfigure modalities of political action.

The researcher emphasizes, as a fundamental contribution, the argument that Information and Communication Technologies (ICTs) are not only configured as neutral tools, but operate as instruments of collective agency. Through these, young people expand their ability to participate in public debate, reconfigure their social position, and compete for narratives related to the climate future.

By mastering media skills, such as audiovisual editing, content curation, collaborative writing, and organizing events and campaigns, they generate new formats of political participation that, throughout history, have been denied to them. In this way, far from acting as mere receptors, these young people become co-authors of possible realities, configuring political initiatives that harmonize with global environmental demands.

The rise of global environmental campaigns on social networks highlights their role as strategic instruments for social mobilization, the promotion of public education and the elaboration of collective agendas. Much like the international mobilization #SaveTheAmazon, which intensified during the 2019 wildfires, digital platforms have established themselves as significant environments for converting complex ecological crises into narratives that manage to engage millions of individuals on a transnational scale.

By disseminating images, testimonies and alarming information about the destruction of the Amazon, the campaign has become an icon of socio-environmental resistance, involving both civil society organizations and personalities and ordinary individuals, forming a digital chorus in favor of preservation and climate justice (Castells, 2012; Recuero, 2020).

Another striking example is the *#BeatPlasticPollution* initiative, carried out by the United Nations Environment Programme (UNEP), which focuses on reducing the use of single-use plastics. Through visual narratives with intense emotional appeal, in addition to the dissemination of scientific data related to the global waste crisis, the campaign managed to position the issue of plastic pollution as a central theme in the international public debate.

Communication tactics on social networks such as *Instagram*, Twitter, *and TikTok* expanded the reach of the initiative, enabling diverse audiences to be made aware of the urgency for behavioral and political transformations (UNEP, 2018; Jackson, 2021).

In addition to these widely recognized campaigns, other initiatives of equal relevance have emerged in the digital environment. The *#ClimateStrike* movement, promoted by young activists from Fridays For Future, brings together millions of students in global climate strikes, employing hashtags such as *#FridaysForFuture*, #SchoolStrike4Climate, *and #ActNow* to connect local narratives to a universal environmental appeal (O'Brien; Selboe, 2020).

The *#CleanSeas campaign*, which is associated with UNEP, aims to encourage effective measures to combat ocean pollution, motivating governments, companies and individuals to reduce the use of plastic and implement circular economy policies. These movements show that social networks transcend their primary function of communication between individuals and establish themselves as tools for socio-environmental change, able to transform collective indignation into concrete actions.

These platforms expand the framework of citizen engagement by enabling citizens to perform functions as creators and disseminators of content related to the environment, impacting political, media, and institutional sectors (Carvalho, 2017).

The intrinsic speed of social networks, combined with their global reach, significantly alters the way society perceives environmental issues. Recent research indicates that issues related to deforestation, extreme weather phenomena, and decreased biodiversity have a high potential for viralization, quickly influencing social and political perceptions (Marin; Pimenta, 2021).

This ability to disseminate in real time helps to address environmental crises as pressing and urgent issues, transferring them from specialized segments to the focus of daily debate. By enabling the personalization and segmentation of messages, the platforms enable environmental communication aimed at different audiences: young people, local communities, business leaders, legislators, the media, and international organizations.

Through this dynamic, issues such as climate change, environmental justice, and sustainability become part of the cultural repertoire of various social groups, impacting behaviors, political pressures, and new modalities of public activism (Lester; Hutchins, 2013). Thus, social networks are established as fundamental spaces in the current communicational ecology, in which the meanings of environmental crises and their possible alternatives for resolution are debated.

3 FINAL CONSIDERATIONS

The present study aimed to investigate the role of mass communication and social networks in the progress of environmental education, highlighting how digital platforms can engage and modify social practices. The established objectives were fully achieved: the research showed that social networks significantly expand the dissemination of information about the environment, foster collective mobilization and encourage citizen participation in ecological issues.

The central question of the investigation, how digital social networks can work as effective instruments for environmental education, fostering an ethical, critical and transformative awareness, was addressed through a qualitative analysis and a comprehensive literature review. The results corroborate that, when used in a strategic and critical way, social networks expand the reach of environmental education, enhance youth protagonism and intensify democratic participation in the preservation of the environment.

The research also demonstrated that digital communication is essential to overcome historical obstacles in environmental education, such as the fragmentation of the curriculum, the lack of didactic resources and the requirement for integration between disciplines. Research on national and international campaigns, such as *Fridays for Future*, has highlighted the ability of social networks to connect different audiences, increase the visibility of environmental causes, and motivate effective actions.

However, the study also highlighted ongoing challenges, such as the spread of misinformation, the possibility of superficial engagement, and problems related to digital inclusion. These results highlight the relevance of boosting media and scientific literacy as fundamental approaches for strengthening critical thinking and analytical skills of individuals.

In summary, this article shows that social networks, when used judiciously and responsibly, are valuable allies in the promotion of environmental education. They not only promote the formation of a critical and active citizenship, but also collaborate to build fairer

and more sustainable societies. It is suggested that future research continues to delve into innovative approaches, aiming to enhance the beneficial effects of digital communication, while also dealing with its intrinsic limitations.

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