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Article:	**The Role of Media in Promoting Technology: A Case Study on Science Communication for Achieving SDG 2030**
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ABSTRACT

In more recent times, the advancement of tech brought in a new variable of media; media now plays the advocate for technology, and it also made plenty of changes to the surroundings of journalism, art, and even visual storytelling. The aim of this paper is to address concerns on these two issues and to emphasize the role of science communication as a means towards the achievement of the sustainable development goals by 2030. With no barrier to the digital era, the swiftness and availableness of information is unprecedented. These strategies then came up as significant tools that enabled scientific communities and public to relate each other in an understandable manner. I explored these ways and demonstrated the point that communication skills are precious for scientists and public engagement in science. Media literacy defined as an ability both to handle with media and to access, analyze, evaluate, and create media, had a paramount meaning in the process of social change. Navigating the information age was one of the most important challenges that every society had to face. The ability to distinguish the facts from misinformation or disinformation was crucial. An argument was being presented about obstacles associated with misleading media and fake news in relation to science communications and how media literacy is one of the ways to assist to resolve these issues. The paper examined all current trends, theories and case studies with an intention of developing a balance framework that lead to inner fulfillment while fully embracing the use of technology. Media can serve as a tool to spread the word of technology and its sustainability campaign; therefore, my mission was to do that.

Keywords: Media Revolution, Technological Advancements, Journalism, Arts, Visual Storytelling, Science Communication, Sustainable Development Goals (SDGs), Public Engagement, Media Literacy, Misinformation, Fake News, Journalism Ethics

1. Introduction

Today's digital space keeps developing more and more a symbiosis with media that very strongly forms the basis for changing the communication environment and social interactions. The convergence of media channels with technological advancements has strengthened the power of information broadcasting, and in turn transformed the perspective of how stories are told by creators all over the world (e. g. journalists, artists, and visual narrators) (Tandoc Jr. , Lim, & Ling, 2018). It is absolutely important to grasp the meaning and consequences of this interplaying and interdependencies for the society as we see it today and to learn how to deal with the media complexity.

Digital platforms and social media not only have the power to transform the publishing industry as such (Tandoc Jr, Lim, & Ling, 2018), but they also reshape the character of general discussions in the press. Today, through platforms such as Twitter, Facebook, and YouTube, individuals have been given the space to form news, important opinions, and even narratives and this has shown that journalism is no longer only for professionals but also users generated content. The plurality of sources and technology the phenomenon has brought about, made it a necessity for traditional media outlets to modify their practices, make the audience more involved and competitive.

Moreover, technological progression have ignited the invention of the immersive storytelling formats that go more than traditionally(Grau, 2018). Virtual reality (VR), augmented reality (AR), and interactive multimedia creative tools that incorporate stories with great depth and extensiveness allowing audiences to become absorbed into the narrative, and consequently gain a greater degree of empathy and understanding.

Therefore, technological development along with the circulation of misinformation and fake news has become the main obstacle which requires prompt attention and all-encompassing solutions (Allcott & Gentzkow, 2017). Digital platforms help disseminate the misinformation with incredible speed and availability. This distorts people's belief in the legitimacy of the conventional media and foster distrust of the media.

The digital information environment has seen a major shift primarily because of the ongoing challenges. This has in turn called for media literacy to become a necessity in obtaining the requisite skills for navigating the complexity of the said ecosystem (Livingstone, 2018). Media literacy education encompasses the construction of the tools necessary for subjects to critically evaluate and judge media content and determine the truth from the lie. Eliminating media illiteracy among citizens, the information society will be populated with a more informed and critical audience who will deal with the complexities of the online scene and ensure that the media discourse is free from distortion (Hobbs & Mihailidis, 2019).

2. Literature Review

The intertwinedness of media and technology has been an intensive subject of research in recent years by scholars. The studies have considered diversified angles of this nexus such as the influence of digital media on journalism conducts and the impact of technology on the format of virtual story-telling. Digital media has been confirmed very volatile and has greatly influenced the ways traditional standards and practices had been used in journalism, and digital media platforms serve as both obstacles and opportunities (Picard, 2019). Media as we know it has undergone a revolution as social media platforms have become part of daily life. This means that autonomy and power has been handed to both the activist and the citizen journalist

who do not need the approval or the gatekeepers to be the voice of the people to the world at large (Chadwick, 2017). Nevertheless, researchers have pointed out the dangers of misinformation and echo chambers that the digital space now fosters, with individuals able to view private domains that conform to their pre-conceived views (Wardle & Derakhshan, 2017).

In addition to that, a media outlet's platform rather than a storytelling practice within different domains has been significantly altered by new media evolution. The emergence of technologies that bring immersion into their totality such as virtual reality (VR) and augmented reality (AR) has given birth to new possibilities for creators to immerse audiences into more realistic and interactive experiences that come close to real life (Kaye, 2019). Education as well as entertainment and journalism are the subjects where VR/(AR) has been put to test, demonstrating of empathy and increased learning, and remembering the valuesOn another hand, much has presented by some researchers about for instance limitations of technology and ethics, showing to the fact that the scientists need to conduct much more research and work on this great technology (Liarokapis et al. , 2018).

The current digital period has not only introduced a whole new consumption and sharing paradigm but also quickly altered this aspect. Watching habits of 21st century viewers have changed dramatically for the rise of the on-demand services, mobile gadgets and now they can have the total control over when, where, and how they consume the content (Jenkins, 2016). The media consumption has become more individualized and fragmented recently which has interrupted the traditional advertising models and hasn't left any choice for the information providers but to rethink their plans and choose strategies that compel advertising recipients to stick to their media in an environment with many media sources. The team of researchers has examined the aftermath of the digital transformation in media industries, which has brought an emphasis on the value of audience engagement, data analytics, and cross-platform delivery as an effective strategy for retention (Evans & McDonald, 2020).

On the other hand, through the constant spread of new technology the ways people communicate with cultural artifacts and art works have undergone profound changes. Digital platforms acting as gateways to cultural content (including different types of arts/artworks) have made this content accessible to wide segments of society. People from all walks of life can now explore art works from different cultures and countries (Hesmondhalgh & Baker, 2015). Social media now provides a toolkit for artists to create and share user-generated content gesturing professional and amateur artists (Bennett and Segerberg (2018). Nonetheless, academics have articulated concerns including but not limited to copyright violation and digital piracy in the digital age; low emphasis is given to cultural diversity and the rights of creators. Therefore, new policies and ethical guidelines are required to protect the interests of creators and to encourage cultural diversity (Garnham, 2017).

Likewise, the emergence of social media has had enormous impacts on education and learning, as well. Digital technologies have impacted what knowledge is where and when has been obtained, and the technique of evaluating and sharing information in educational establishments (Bates, 2015). Most of the learning particularly those online learning platforms serve as information services which assist kids to understand and learn individualized and adjusted learning experiences with technology (Prensky, 2016). The psychologists were interested in the digital technologies effect on student engagement improvement, learning outcomes and creative and collaborative activities. (Clark & Mayer, 2016). Nevertheless, some

obstacles including the fact that digital divide exists and the sporadic access to technology and the negative sides of prolonged screen use have now entered the conversation too, which reminds us that we need to make things more fair and inclusive.

Specifically, the coming of digital media, meanwhile, has triggered arguments among journalists about the future of news and the role of traditional media outlets in the modern digitized world. The new digital order has occupied the attention of many scholars who have been talking about the implications of digital disruption on the traditional news business models. More specifically, they have focused on the problems in monetizing online content and the downfall of advertising. On the other hand, the science journalists look into creative journalistic practices like data journalism, collaborative storytelling and audience engagement initiatives too (anderson & Domingo, 2019). Although these are related to the improvement of journalism in the digital world, however, other questions concerning the sustainability of journalism in the digital age linger, among them are media ownership, funding models, and the influence of digital platforms on news distribution and consumption (Picard, 2021).

In addition, information age media has tremendously transformed the way political communication and public involvement take place. Social media platforms are the ground on which the political fight is fought as well as it is the same platform where activists gather, mobilize, organize, and lobby for social/political change (Bennett & Segerberg, 2018). Nevertheless, the same research shows that the overall amount of misinformation and disinformation is spreading through digital channels and that the filter bubbles and echo chambers bias our perceptions and ultimately have an impact on public debate (Guess et al. , 2020). Additionally, the impact of digital media in the politics of the voters' validation and participation is being thoroughly investigated as the discussions go on concerning the effectiveness of the online campaign, political advertisements regulation, manipulation of political preferences through algorithmic recommendations of a kind (Kreiss & McGregor, 2019).

3. Objectives

The primary objectives for this study are:

1. To analyze the role of media in promoting technology, with a focus on science communication for achieving SDGs by 2030.
2. To explore the importance of media literacy in mitigating challenges such as misinformation and fake news in science communication.

4. Questions

The questions to cover the objectives of this study are:

1. How does media contribute to the promotion of technology and science communication for achieving SDGs by 2030?
2. What role does media literacy play in addressing challenges such as misinformation in science communication, and how can it be enhanced?

5. Methodology

The major analytical approach employed in this qualitative research on the relationship between media, technology, and science communication is by carrying out the thematic analysis. Based on the methods used, I'd say that literature for the specified period was systematically collected from academic databases such as PubMed, Google Scholar, and Web of Science, using keywords like "media and technology," "science communication" and "digital

storytelling. "" Considered literature, which included academic articles, books, reports, case studies and descriptive essays has been scrutinized thoroughly. Interpretation of the main stream approaches to technology promotion and impact science communication was next applied to find the frequently recurring themes and patterns. Through the analysis, some critical attributes that these media platforms bring and problems that they pose in storytelling (such as media allowing the different storytelling formats or the misinformation) became apparent. Proces maintained a rigor by using some of the techniques such as keeping audit trail and peer debrief. Integration of the outcome of the above mentioned analysis served as the foundation for further explorations and inquiries in this research paper.

6. Findings

The results of the topic analysis showed different major themes and sub- topics concerning the setup of a relationship of media, technology, and public understanding of science.

Table 1. Main Themes and Subthemes

Main Theme	Subthemes
Role of Media	• Information Dissemination • Public Engagement • Technology Promotion
Impact on Science Communication	• Bridging the Gap between Scientists and the Public • Enhancing Communication Skills for Scientists • Addressing Misinformation and Fake News
Media Literacy	• Accessing and Analyzing Media • Evaluating Credibility of Information • Creating Media

6.1 Role of Media

As one of the main players in packaging the scientific information and disseminating it to the public, there is a role media plays. By various communication channels (e. g. news, documentaries, social media), this information dispersion happens, that allows for non-professionals the access to latest research findings, scientific advancements, and discoveries (Bucchi & Trench, 2020). Media platforms working towards the public participation, are the best inciteful actions for promoting conversation and communication between scientists and the public (Jensen, 2021). It offers a platform for people to take part in a scientific dialogue that involves interrogation, perhaps contemplation, and contact with scientific issues in a way leading to a deeper understanding. Moreover, media platforms function as stimulants for the dissemination of information about such technologies and possible advantages, thus inspiring wider audiences (Fischhoff et al. , 2022).

6.2 Impact on Science Communication

Media is a key actor in narrowing the gap between scientists and common people by gracefully converting complex science into deep and interesting messages (Nisbet & Scheufele, 2020). Through different channels, which may include documentaries, podcasts, media-literacy initiatives or just communication programs, media is able to debunk science, making it more relatable and understandable to non-experts with a better comprehension of the subject matter (Brossard & Scheufele, 2022). To supplement science communication with communication

skills for scientists is the second major importance of media for this doing (Dudo et al. , 2021). Media venues are the platform through which scientists are able to communicate their science findings well to a fairer audience that include interview, opinion pieces, and /or posts on social media. Among all, media literacy and fact-checking initiatives are absolutely necessary for the matter of science miscommunication (Wardle & Derakhshan, 2023). By championing critical thinking and discernment the media literacy turns the audience to be able to evaluate the accuracy and reliability of the information which allow the scientific facts to correctly be reached by the public.

6.3 Media Literacy

Both the process of consuming and interpreting media information are the most fundamental attributes of media literacy, which in turn permits an individual to address the issues of navigating the immensity of the information space regardless of the platforms, (Livingstone, 2020). Media literacy is the set of skills, including the ability to critique news reports and pick out distortions, and make credibility judgements on sources (Hobbs & Jensen, 2022). Accuracy of information is one of the crucial elements in an epoch where it is exorbitantly easy to create and pass off fake news and incorrect data (Potter, 2021, p. 103). It is the media literacy that gives power to the individuals to question, verify, and look up information in the other sources so that the person can rely on the accurate one and can make an informed decision. In addition to this, the part of being media literate also lies in producing and creating media content. This can be done by everyone, and this allows any person to get involved in public discourse, the main purpose of this to express their many talents and be creative. Through media literacy training, individuals develop the resources to not only consume, create and contest, but also to become engaged members of the media community.

7. Discussion

Some reference with other researches which according to that literature, literature on media's essential role in science communication and contribution to technological progress (Brossard & Scheufele, 2022; Fischhoff et al. , 2022) is also being observed by us. The media becomes a crucial medium, for information to reach the wider public, by means of various channels ranging from newsmedia to documentaries and social media networks (Jensen, 2021). The study discovered that effective strategies of science communication are the key to the scientific community and the general public approaches to the knowledge gap, something that has been described by previous researchers (Nisbet & Scheufele, 2020). Through the provision of science knowledge in conversational and alluring ways, media plays a significant role in disseminating science information to public, hence interacting and facilitating dialogue with the consumers (Bucchi& Trench,2020).

Additionally, the study to charge up the media in the field of technological innovations and promotion to demonstrate the benefits and applications of the technology (Fischhoff, et al. , 2022). According to this, it is what was reported in earlier studies on the role played by the media in change of the public vision of technology and innovations (Brossard & Scheufele, 2022). As might be expected, one of the key roles that the mass media plays is informing people on the success stories, breakthroughs, and progress, which do a lot in creating awareness and increasing the enthusiasm for scientific and technological advancement (Fischhoff et al. , 2022).

This study's findings, moreover, show that the effectiveness of scientists' communication skills for them should be improved, and this was indicated previously by the Dudo et al. (2021) research work. With scientists able to reach and adequately serve a wider audience through the media platforms their findings are communicated, proper science communication becomes essential (Nisbet, A. & Scheufele, D. A. , 2020). Financing the communication methods and programs will prepare scientists to become impressive communicators, thus increasing public awareness about the issues from scientific side (Dudo et al. , 2021).

Further, the study points out to the very important role media literacy plays in the deciphering of the problems that abound in the digital information environment and in so doing, the study is in accord with previous author's research (Wardle & Derakhshan, 2023). Media literacy which includes critical thinking of the users is an essential factor involved in the process of discerning reliable sources from misinformation in the era of dissemination of disinformation and fake news (Livingstone, 2020). Media literacy education and fact-checking campaigns that are led by the media stakeholders have a role to play in the process of information consumers of media content becoming well-informed, hence, reducing the rise of misinformation and building on trust in media sources (Wardle & Derakhshan, 2023).

Finally, the study made a valuable contribution to the science of research by examining how media shape the public perceptions of technology and supplying information about scientific endeavors. Utilisation of appropriate media channels by stakeholders helps in upgrading educational status of people in scientific issues, introducing innovative solutions and making informed decisions in the smart age. Looking to the future; strengthening the media literacy, adopting the responsibility while communicating science and between the fields will among other things, step up the science communication goals and sorting the challenges in the ecosystem of the digital information.

8. Conclusion

To sum all of this, the study has focused on the specific junction of media, technology, and science communication indicating the great function of media which paves the way for the technology and the field of science. By employing the thematic analysis of the discussed literature, couple of essential things which have highlighted the critical relevance of proper science communication strategies, role of media in the bridge between scientists and public and the need for mass media literacy in the time of digital information advancement have been identified.

The implications of this research accentuate the crucial help of the media in transmitting scientific notions to people and breathing interest in science issues among the society. Media platforms enact this purpose by making research results available in a way that people can understand and enjoy, therefore stimulating dialogue, interaction and citizen participation in scientific conversations. Furthermore, media acts as one of the most powerful driving forces in the process of growing technological solutions, by presenting these solutions to the public using the examples of how and where to apply them.

Moreover, the report underscores the necessary role for scientists of upgrading their communication skills in order to exchange knowledge to wider target group of audience. Developing communication experts and training initiatives can strengthen the role of scientists

as effective communicators having the immediate effect of ensuring that scientific knowledge is understood and shared by the public.

The research not only emphasizes the importance of media literacy in information system of the digital age but also the cards involved in deciphering digital information. Analysis and understanding of news media are needful for audiences to judge pseudo information and genuine sources of information in these increased era of misinformation and fake news. Through campaigning on media literacy education and fact-checking initiatives, the stakeholders can improve public's capabilities to be selective readership in recognizing and eliminating misinformation and regain the attention to trusted media sources.

The scientific study illustrates to a great extent the need of cooperation between scientists and other stakeholders like, media practitioners, policymakers and teachers in the quest to make science communicating more effective in the digital era. Through skillful employment of media, encouraging media literacy and training of scientists to efficiently communicate, stakeholders can play a hawkeye role in creating a more vibrant society with enhanced understanding and participation in solving scientific challenges that suitably advance sustainable development.

9. Recommendations

Based on the findings of this study, several recommendations are made to enhance the role of media in promoting technology and driving forward the agenda of science communication:

1. **Investment in Science Communication Training:** The government and external donors should ponder how to support scientists with trainings and initiatives for communicating. Scientists could be trained with key skills for effectively communicating their research results to audience from a range of stakeholder groups, this can then help transforming scientific data into public more comprehensible language.
2. **Promotion of Media Literacy Education:** The contribution of educators and media partners in the matter of media literacy is important at all levels of education. Community leaders' ability to educate individuals to critically analyze and accurately differentiate between information that is credible and not can motivate them to become smarter media users and to surf through the digital information landscaping responsibly.
3. **Enhancement of Media Ethics and Standards:** Media companies should meet a higher level of ethics standards and practices by being scientists when they write or portray science on the screen. Media can be the main source that advocates for the transparency, accuracy and accountability in reporting scientific issues which can foster the public trust in media outlets and also facilitate the decision-making process by an informed populace.
4. **Collaboration between Scientists and Media Professionals:** The scientists and the media leaders must liaise to understand one another on the strategies as well as campaigns. Through the synergies between communities with technical knowledge the stakeholders can achieve the goal of disseminating scientific facts in a credible, adequate and ethical manner to a multi-ethnic audience.
5. **Integration of Digital Technologies:** Media organizations must be on the forefront of technology while carrying ahead with science communication

initiatives. If the use of multimedia formats, interactive platforms and social media channels for the communication purpose is promoted, the chance of the access to wider audiences and keeping those audiences engaged will get increased.

6. **Support for Public Engagement Initiatives:** Government, publicly funded institutions and others should play an essential role in supporting programs that contribute to the society through organized dialogs, consensus building and participation. Through the funding of science communication programs and other incentives, the stakeholders can help shape a science communication culture and encourage every citizen to be an active part of the scientific process nationwide.
7. **Continued Research and Evaluation:** Further investigation regarding the use of media in terms of science communication is also needed, as well as evaluating the level of effectiveness of various strategic approaches and initiatives. Through data and findings production and the resulting insights, stakeholders can then further develop and improve science communication practices to fit the wider cohort of audience needs.

The suggestions listed above are for revealing cooperation between scientists, sparking sense or novelty and accountability in science communication that will promote the causes of sustainable development and reinforce an enlightened and interactive public discourse in scientific issues.

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