WHIOCE PUBLISHING PTE. LTD.
PROVIDING FIRST-CLASS SCIENTIFIC INFORMATION FOR TOP SCHOLARS

2025 Volume 3, Issue 5
Lecture Notes in Education, Arts, Management and Social Science
ISSN(Online): 2705-053X

New Paths for Science Communication in the Digital Age

Jinling Ma
Beijing Netstep Technology Development Co., Ltd. Beijing 100086, China

Abstract: In the digital age, the channels, carriers and contents of scientific communication are becoming more and more diversified, which not only expands the audience, but also makes scientific communication more people-friendly, which is conducive to improving national literacy and promoting the dissemination of scientific knowledge. Based on the digital age, this paper analyzes the new mode of scientific communication, analyzes the problems existing in the current scientific communication, and puts forward to create new popular science media accounts, hold online scientific and technological live broadcast activities, promote scientific research achievements with short videos and improve the mechanism of dispelling scientific rumors, aiming at broadening the channels of scientific communication and improving the quality of scientific communication.

Keywords: Digital age; Science communication; Dilemmas faced; Communication paths

Online publication: June 26, 2025

1. Introduction

Science communication is tasked with popular science education for the public, promotion of scientific and technological achievements, and dissemination of the scientific spirit. It is essential to seize the opportunities presented by the digital age, leverage self-media accounts, online livestreams, and internet communities to promote scientific and technological advancements, popular science knowledge, and the scientific spirit. This effort aims to arouse the public's enthusiasm for learning scientific and technological knowledge, with a particular focus on planting the seeds of advocating science and serving the motherland in the hearts of young people, thereby inspiring their passion for studying scientific knowledge. It is also crucial to standardize popular science accounts on online platforms, actively publicize China's scientific and technological achievements such as Unitree robots, DeepSeek, the Shenzhou series of manned spacecraft, and the BeiDou satellites. By doing so, we can carry forward the scientific spirit of Chinese scientists characterized by self-improvement, innovation, and dedication, and foster a favorable atmosphere for science education. In turn, this will enhance the public's scientific literacy and lay a solid foundation for advancing Chinese-style modernization.

2. New models of science communication in the digital era

2.1. Science communication + "Micro-platforms"

Weibo and WeChat have a huge user base, with convenient information release and interaction functions, allowing

information to spread quickly through Moments, which is more in line with the needs of science communication. Therefore, many universities, research institutions, and colleges have opened WeChat official accounts and Weibo accounts to release popular science papers, popular science experiments, experimental videos, and other materials, and interact with netizens online, thereby building excellent popular science accounts, attracting more followers, and improving the effect of science communication [1]. For example, the popular Chinese Geography WeChat official account and Weibo account regularly update geography popular science knowledge, study tour videos, etc., attracting more followers, facilitating their online understanding of geological changes, geographical environments, and other knowledge, and improving their scientific literacy.

2.2. Science communication + short videos

With the popularity of the Douyin platform, a large number of knowledge-based and popular science creators have settled in. They carry out science communication through popular science short videos, guiding the public to actively participate in online interactions, automatically forward and spread popular science videos, thus promoting the dissemination of science, technology, and popular science knowledge [2]. For example, the Douyin celebrity “Infinite Xiaoliang” explains knowledge about insects, plants, etc. through short videos, shares knowledge about field exploration at home and abroad, rainforest scientific expeditions, and insect specimen production, introduces different types of insects, birds, and plants, and has become a popular science celebrity loved by fans with profound knowledge and interesting content.

2.3. Science communication + live streaming

In the era of artificial intelligence, online live streaming has opened up a new path for science communication, giving rise to a group of special anchors-popular science online anchors. They teach knowledge such as physics, chemistry, artificial intelligence, aerospace, etc. through online live streaming, and answer netizens’ questions online, making it easier for the public to learn more scientific and technological knowledge. For example, the Institute of Physics of the Chinese Academy of Sciences has opened a Bilibili account and regularly conducts “The Two-Dimensional Institute of Physics of the Chinese Academy of Sciences” live streams, which demonstrate the operation process of popular science experiments, allowing netizens to understand physics knowledge more intuitively [3].

2.4. Science communication + interest communities

In the digital era, Zhihu has become a popular interest community among the public, which can meet the communication needs of different groups such as animation, photography, film, popular science, and beauty, and has gradually become a new “position” for internet science communication. Unlike online live streaming and short video accounts, interest communities are mostly spontaneously gathered by enthusiasts who share professional knowledge and personal experience, and use the community to share popular science papers, scientific and technological achievements, scientific experiments, and other materials. This gives play to the cohesion of online interest communities, promotes the sharing of scientific knowledge, and allows more people to participate in science communication activities [4].

3. Difficulties faced by science communication in the digital age

3.1. Science communication activities deviate from scientific facts and the scientific spirit

In the digital age, some self-media and online anchors are deeply influenced by the pressure of pursuing traffic. In order to attract attention, increase the number of fans and likes, they make up false news, gossip about scientists, and even fabricate scientific content, which not only violates scientific facts but also misleads the public [5]. For example, some self-media outlets fabricate or forward “gossip news” about scientists and false scientific research results to attract traffic, which not only damages the legitimate rights and interests of scientists but also affects the authenticity

and scientificity of science communication content, violating the scientific spirit of seeking truth from facts and being rigorous and pragmatic.

3.2. Scientific discourse is not rigorous enough

Scientific research pursues rigor, fairness, and seeking truth from facts, requiring that professional terms be standardized, formulas and models be accurate, and so on. However, some self-media and online accounts have limited scientific literacy, and there are problems in the transformation between scientific discourse and media discourse. The non-standard transformation of professional terms and formulas leads to the distortion of some science communication content [6]. How to transform obscure scientific terms into easy-to-understand media language that is both interesting and readable is a difficult point, and also a professional problem that major popular science accounts and popular science bloggers need to solve.

3.3. The quality of science communication information is uneven

The Internet is an open environment where everyone has the opportunity to speak out. In addition, the review and supervision of popular science accounts by major platforms are not in place, leading many people to pretend to be popular science experts and blindly publish articles or short videos about pseudoscience and popular science rumors. Even some accounts use their accounts to sell shoddy products and release bad information, which not only disrupts the online communication environment of popular science but also causes troubles to the majority of Internet users. For example, some accounts claiming to be traditional Chinese medicine experts and health experts publish “health rumors” and take the opportunity to recommend health products, which not only causes Internet users to be deceived but also has a negative social impact [7].

4. New paths for science communication in the digital era

4.1. Actively building high-quality science popularization online accounts

In the digital era, universities, research institutes, and enterprises should take on the responsibility of science communication by launching science popularization accounts on platforms such as Weibo, WeChat, Bilibili, and Douyin. These accounts can publish authoritative scientific papers, scientific experiments, and cutting-edge technological achievements to meet the science education needs of different groups and gradually improve the scientific literacy of the general public[8]. First, universities and research institutes should proactively launch science popularization accounts, clarify the account themes, core content, and target audiences, and organize outstanding teachers and researchers to write popular science articles and record popular science videos. This will improve the quality of account content, actively dispel science-related rumors, and thus enhance the quality of science communication. For example, a science popularization account could explain the Yushu robot that went viral during the 2025 CCTV Spring Festival Gala, analyzing knowledge such as the robot’s sensitive motion design and programming code, decrypting the mysteries behind intelligent robots, showcasing China’s achievements in the field of intelligent robot research, boosting national pride, and encouraging the public to actively learn knowledge related to artificial intelligence, thereby improving national innovation capabilities and scientific literacy. Second, research institutes can invite academicians to record short science popularization videos. These videos can explain simple scientific knowledge, making profound scientific concepts accessible to the general public, fostering a favorable atmosphere where science is advocated and learned, and laying a solid foundation for building a learning society[9]. For instance, aerospace research institutions can hold popular science lectures on the Shenzhou series of manned spacecraft and the BeiDou Navigation Satellite System, explaining relevant knowledge in physics, electromagnetism, and aerodynamics. They can also share the patriotic spirit of Chinese aerospace pioneers such as Qian Xuesen and Sun Jiadong—their indifference to fame and fortune, perseverance, diligence, and dedication—calling on teenagers to master scientific knowledge, inherit the scientific spirit of these

scientists, and improve the quality of science education for young people.

4.2. Hosting online science popularization live events and optimizing science communication content

Social media platforms such as Douyin, Bilibili, and Weibo should actively cooperate with research institutes, universities, and government departments to jointly host high-level, professional online science popularization live events. By promoting high-quality scientific and popular science knowledge, these events allow netizens to learn from academicians and scientists, helping them acquire more scientific knowledge and improving the quality of science communication[10]. First, online science popularization live events can focus on social hot topics, explaining the most concerning scientific news and cutting-edge research results to netizens. By using easy-to-understand language to explain profound scientific knowledge, these live events can be both interesting and educational, thereby stimulating netizens' enthusiasm for learning scientific knowledge. For example, research institutes can host an online live event titled "Exploring DeepSeek," explaining the characteristics of the DeepSeek large language model and comparing it with ChatGPT from abroad. They can demonstrate processes such as information retrieval, automatic generation, short video editing, and calculation of science and engineering problems, explaining artificial intelligence knowledge in a simple and in-depth way, and actively interacting with netizens to answer their questions, thus improving the quality of the online live event[11]. Second, online science popularization live events can explain application cases of artificial intelligence in daily life, such as unmanned driving, smart homes, and intelligent robots, as well as discuss AI ethics. This can guide netizens to use artificial intelligence technology rationally and avoid over-reliance on it, thereby fostering a good atmosphere for scientific learning and enhancing the effectiveness of science communication education.

4.3. Promoting scientific research achievements through short videos to improve the quality of popular science education

Science and technology are the primary productive forces and an important foundation for realizing Chinese-style modernization. As cradles for cultivating scientific research talents, colleges and universities should actively carry out science communication, promote cutting-edge scientific research achievements through short videos, stimulate students' enthusiasm for scientific research, and encourage them to actively engage in scientific research, thereby cultivating more outstanding talents for China's scientific research cause. For example, colleges and universities can actively cooperate with research institutes to collect cutting-edge scientific research achievements in fields such as artificial intelligence, aerospace, and new energy vehicles, carefully produce short videos, and use concise and concise short videos to push excellent scientific research documents, academic papers, and research projects. This facilitates students' online learning of scientific and technological achievements, which can not only enrich their professional knowledge reserves but also improve their scientific research spirit and innovative ability [12]. In addition, colleges and universities should publish science communication videos on school websites and WeChat official accounts to facilitate netizens' browsing, thereby expanding the audience of science communication and improving the effect of science communication. Colleges and universities should work with education departments to carry out popular science education activities for teenagers, use short videos to explain knowledge that teenagers are concerned about, such as intelligent robots, computer programming, and China's space station, and timely forward popular science videos released by China's space station. This allows students to understand the application of physics, chemistry, and electromagnetism knowledge in the aerospace field, let them know about the achievements made by the motherland in aerospace, stimulate their national pride and sense of social responsibility, and exert the ideological and political education value of science communication [13].

4.4. Actively refuting popular science rumors to purify the environment for popular science communication

First, research institutes and colleges and universities should pay attention to "popular science rumors" on platforms such as Douyin, Zhihu, and Weibo, and promptly carry out online live broadcasts, record short videos, and publish

rumor-refuting articles to help netizens see through “popular science rumors” and prevent them from being affected by bad information [14]. For example, research institutes and colleges and universities can use big data and artificial intelligence to screen recently released popular science videos and articles, identify the “popular science rumors” among them, carry out online live broadcast activities of “refuting popular science rumors”, and record rumor-refuting videos. This helps netizens see through health-preserving rumors and pseudoscientific articles, enabling them to correctly understand scientific knowledge [15]. Second, popular science bloggers should actively carry out science communication and publicize popular science knowledge closely related to daily life, such as how to correctly eliminate cockroaches at home, and how to properly handle Paederus and ticks. This enhances netizens’ awareness of scientific prevention and health, helps them deal with emergencies, and thus enables them to stay away from health troubles, exerting the role of science communication.

5. Conclusion

In conclusion, in the digital age, online live broadcasts, short videos, and interest communities have opened up new channels for science communication, providing new carriers for citizens to learn scientific knowledge. This is conducive to building a learning society and improving the scientific literacy of the whole nation. Research institutes, colleges and universities, education departments, and popular science bloggers should shoulder the responsibility of science communication, actively create high-quality popular science online accounts, optimize science communication content, hold online popular science live broadcast activities, actively interact with netizens, promote scientific research achievements through short videos, actively refute popular science rumors, improve the quality of popular science education, and exert the social value of science communication.

Disclosure statement

The author declares no conflict of interest.

References

[1] Huang J, 2021, Ethical Dilemmas and Resolution Paths of Science Communication in the Digital Age. Chinese Editors Journal, 2021(12): 56-61.

[2] Zhang L, Liu Y, 2025, Characteristics and Innovation of Online Science Communication in Science and Technology Museums in the New Media Era - A Case Study of the Construction of the Converged Media Platform of Beijing Science Center. Modern Enterprise, 2025(04): 105-107.

[3] Zhu W, Fu W, 2025, Analysis of New Media Communication Strategies of Scientific Research Institutions - A Case Study of the WeChat Official Account “Voice of CAS”. Public Communication of Science & Technology, 17(05): 49-54+60.

[4] Xu Y, Zhou S, 2024, Summary of the Conference on Science Communication and Science Education in the Era of Strong Artificial Intelligence. Science Communication and Science Education, 2024(03): 143-151.

[5] Wang Q, Jian R, Nie Y, 2024, Significance and Paths for Scientific Research Institutes to Do a Good Job in Science and Technology News Dissemination. News Forum, 38(06): 97-99.

[6] Chen M, 2024, Research on the Relationship between Science and Technology Communication and Public Scientific Literacy. Science & Technology Vision, 14(31): 1-5.

[7] Ren P, Zhai J, 2024, Research on the Systematic Development of National Science and Technology Communication System in the Innovation Era. Studies in Dialectics of Nature, 40(10): 102-109.

[8] Wang S, Yan Y, 2024, Opportunities and Challenges of Science and Technology Communication in the Era of Generative

Artificial Intelligence - An Analysis Based on the Science and Technology Communication System. Forum on Science and Technology in China, 2024(09): 134-143.

[9] Zuo S, Du X, 2024, Practice and Reflection on the Construction of National Technology Communication Platform - A Case Study of National Science and Technology Communication Center. Public Communication of Science & Technology, 16(14): 1-4.

[10] Li X, 2024, Exploration on the Application of Artificial Intelligence Technology in Science Communication. Science & Technology Information, 22(08): 25-27.

[11] Sun B, 2024, Knowledge Sharing in Science and Technology Communication: Integration and Common Progress of Industry, University, Research and Application. Paper Information, 2024(03): 9.

[12] Jin X, Shu T, 2024, Challenges and Approaches of Science and Technology Communication from the Perspective of Intelligent Media. Public Communication of Science & Technology, 16(04): 81-85.

[13] Song X, 2024, Integration and Innovation of Science and Technology Communication in the New Media Environment. News Trend, 2024(02): 62-64.

[14] Kuang J, 2023, Doing a Good Job in Science and Technology Communication to Promote the Realization of Chinese-Style Modernization. Technology and Finance, 2023(12): 57-58.

[15] Jia Y, 2023, Discussion on the Current Situation and Problems of Science and Technology Communication in the Digital Age. Public Communication of Science & Technology, 15(16): 47-50.