

# Research on Science Communication Path of Scientists based on Short Video Platform

*Xiaowan Wang*

1. School of Journalism and Communication, Beijing Normal University, Beijing 100875, China

2. School of Digital Arts, Xi'an University of Posts & Telecommunication, Xi'an 710061, China

**Abstract:** In the information society with increasingly diversified media platforms, ideas, cultures, and values have a broader meeting space and more opportunities to collide. The process behind various disputes, conflicts, and debugging requires scientific understanding and dialogue. In other words, offline science communication can no longer meet the scientific needs of society and the public in terms of timeliness. Recently, short video platforms provided a new communication path for the convenient transmission of scientific information for scientists, science popularization workers, and users. Hence, this paper discusses how to make full use of such platforms to serve science communication needs, the support of policy, the collective participation of the public, and the control of mainstream media.

**Keywords:** Short video; Science Communication; Scientist; Participation

Since the end of the 20th century, information technology, aerospace, artificial intelligence, and biotechnology breakthroughs were made, among others. Science and technology have been deeply embedded in daily life, promoting lifestyle change. At the same time, the arrival of the digital era also provided ample opportunities for the development of science communication, opening up a new way of communication.

## 1. Developing a short video science communication path – a necessity

Science and technology are primary productive forces, with science communication and innovation (both scientific and technological) being the engines fueling their development. These warrant improvements in the understanding of scientific research workers and the importance of science communication, but also the development of innovation culture and promotion of social citizen participation in scientific dialogue. The necessity of citizen participation in science communication and the expansion of the short video science communication path is mainly reflected in aspects presented in the following sections.

### 1.1 The “information epidemic”-driven network governance needs

Short video social media makes it easier to present the production process of scientific knowledge and the application of associated advancements to the public. This is done through multimodal information, achieving the deep involvement of the audience, combined with an immersive communication interaction experience. However, problems such as network security and scientific ethics, intrinsic to the development of science and technology, further promote the formation of a risk society and the emergence of a trust crisis. When the differences in scientific dilemmas, such as the discussion of “genetically modified food” and “human cloning research”, enter the social field, fierce conflicts occur. It requires resources, interests, value orientation and other elements, complicates the problem, and even causes social group opposition. Therefore, promoting the development of science communication should strictly control the scientific content on the platform, immediately correcting the wrong views, and reducing information bias. On the other hand, it should also effectively build a communication bridge between scientists and the public, reducing the risk of a trust crisis.

### 1.2 Driven by social responsibility

Scientists have the primary responsibility and are information sources for science communication activities. As such, they are generally considered the producers of scientific knowledge, methods, ideas, and spirit, as well as the shapers of scientific culture. On the one hand, compared to popular science institutions and other media, they can avoid misinterpretation of scientific knowledge and improve the accuracy in the process of dissemination. On the other hand, they have experienced the research process and have professional advantages when it comes to establishing an in-depth scientific dialogue with the public. Finally, the public has a higher degree of trust in the scientific community than in other social institutions such as government, industry, and media.

### 1.3 The development of a new media platform brings new opportunities for science communication

With the rise and development of social media, the new model characterized by public “participation” and “dialogue” became an efficient, low-cost way for science communication. Firstly, scientific knowledge is no longer limited to one-way flow, breaking time and space constraints. Therefore, the interaction and secondary communication among multiple subjects increased significantly. It has

greatly enriched the volume and expanded the coverage of information, promoting the “democratization” of scientific and technological information diffusion. Secondly, the subject of science communication became more diversified, and amateur science lovers freely joined the communication channel, forming social influence through fragmentation, life, visualization, and personalized expression, such as clove doctors, paper clips, etc. At the same time, the transmission of scientific information changed from the traditional, text-based transmission, to the transmission of text, audio, video, and other multimodal combinations. It was further promoted by audio-visual language and graphically illustrated animation.

## 2. The dilemma of short video science communication

At the moment, short video science communication is in full swing, with videos of different knowledge types springing up on various short video platforms. However, some pseudo-science information and wrong value orientation can be found among them. Further, there are also various obstacles in the development process, which we covered in the following two points.

### 2.1 Lack of scientists’ enthusiasm for participation

As the main force to promote the breakthrough and development of science and technology, scientists need to spend a lot of time and energy to carry out scientific research. Young scientists, who are in the upwards stage of their careers, bear the pressure of teaching, scientific research, family, and other aspects, which move them further from science communication. Additionally, the lack of support policies related to science communication led to the lack of sufficient motivation and enthusiasm for scientists to actively participate.

### 2.2 High media access threshold

Schramm once said that “media is a tool inserted in the process of communication to expand and extend information transmission”. McLuhan further emphasized that “media is everything” and that “media is the extension of human”. In terms of the relationship between science and media, Felt proposed the concept of “space where science and the public meet”. The term “space” indicates that whether “scientists participate in science communication” or “public participation in science” always occurs in specific situations. This space has barriers to restrict access and provides multi-dimensional technical conditions. Although scientists are the symbol of knowledge authority, their mastery of media technology and the application of media language cannot fully meet the needs of the short video platform audience. This is especially true for the process of transforming professional terms into media language, there are not only technical bottlenecks but also cognitive differences with the public, as well as hard-to-bridge knowledge gaps.

## 3. Analysis of short video science communication path

Based on the necessity for the development of a short video science communication path and the dilemma of scientists participating in such communication activities, three proposals were proposed in this paper and covered in the following subsections.

### 3.1 Policy support

The National Natural Science Foundation of the People’s Republic of China, the Association of Scientists, universities, and scientific research institutions should work together to form policies to support the participation of scientists in science communication. The policies should be based on in-depth research, providing necessary guarantees and convenience conditions in terms of time, funds, and assessment mechanisms. The aim would be to stimulate the researchers to increase their motivation and enthusiasm for participation in science communication.

### 3.2 Skills training

Government departments, research institutions, and universities should build communication platforms with the media industry, providing necessary skill training services for scientists interested in participating. They should also improve their mastery of new media technologies and their understanding of different types of audiences. For the target science content audience, high-quality short videos with attractive content, rich media expression forms, and easy-to-understand language should be produced. This will improve the communication effect and increase the user stickiness and interaction in science communication activities.

### 3.3 Create a good public opinion

Scientific research is constantly overturning old understanding and forming new knowledge. The process leading to the conclusions is an incremental process of trial and error. Further, scientists’ cognition also dynamically changes with the development of scientific research. Although scientists are representatives of knowledge and authority and are rigorous in the selection of science communication content, their cognition and speech have certain situational limitations. Therefore, the mainstream media should play its role to guide public opinion and the public itself to objectively view scientific communicators. It should also provide them with a rational and inclusive network environment required to encourage scientists to boldly speak out and actively participate in science communication.

Lastly, the science communication activities of scientists via short video platforms are not one-way knowledge indoctrination activities. They break through the traditional “central broadcasting model” of science communication and turn to the “democratic model” of interaction between scientists and the public. Doing so requires the cooperation of all parts of society to promote the development of modern science communication and the cultivation of an innovative cultural atmosphere.

## Reference

- [1] Huaxin Peng. Social Media Participation and Power Game of Scientists in the Topic of “COVID-19” [J]. *Modern Communication (Journal of Communication University of China)*, 2021,43 (02): 141-146.
- [2] Guoyan Wang, Yuqin Yang, Xinyi Jin. Scientists’ Participation in Science Communication: Value, Relationship and Ability Improvement [J]. *Science of Science Research*, 2022,40 (10): 1729-1736.
- [3] Jing Zhu, Xuefeng Jiang. The Importance and Uniqueness of Scientists’ Participation in science communication -- An Investigation based on Epistemological Trust [J]. *People’s Forum, Academic Frontier*, 2022, (14): 90-96.
- [4] Francis Vandam, Eric A. Johnson, et al. *Introduction to Science Communication* [M]. Translated by Guo Zhenyu, Tsinghua University Press, 2022:30.
- [5] Li Liu. *Introduction to Science and Technology Communication* [M]. China Science and Technology Press, 2022:105.

### Author profile:

Xiaowan Wang, female, doctoral student, lecturer. Main research directions: online public opinion and science communication .  
[Fund Project] Shaanxi Provincial Social Science Fund Project (2019N007)