

# Case Analysis of the Status and Effect of Knowledge Short Video Communication Based on 5W Model: TikTok

Qinyi Wang

School of Foreign Languages, Lanzhou University, Lanzhou, China

wangqinyi19@lzu.edu.cn

**Abstract.** With the rise of short videos as a form of social media, knowledge short videos cater to people's need for fragmented learning in a fast-paced life and have become a new way of informal learning. The current state of this kind of short videos and the role these videos play in fragmented learning have not been discussed in depth. The study chooses the short video platform TikTok as an example and uses the Lasswell's 5W model to analyze the status and the transmission effect of this kind of videos. The results show that the short-form video platforms are important contributors to the dissemination of knowledge-based content, but the authenticity and quality of knowledge short videos need to be improved. In this regard, the short-video platforms should establish interrogative mechanisms for content, encourage user's learning behavior and try to build online learning communities to promote the knowledge transmission.

**Keywords:** Short video; knowledge transmission; Lasswell's 5W model; TikTok.

## 1. Introduction

### 1.1 Short Videos and Knowledge

In recent years, short-form video is undoubtedly one of the most popular types of content on social media. By the end of June 2022, the quantity of short video users in China has reached 962 million, accounting for 91.5% of all Chinese Internet users [1]. FastData's report shows that short video has entered the era of globalization and the global short video market is predicted to reach \$135.8 billion in 2025, showing the popularity of short videos [2]. It is worth noting that in China, although most users still recognize watching short videos as a form of entertainment, the proportion of short video users for learning purpose is increasing dramatically [3]. More and more people in China are spending their fragmented time on learning knowledge on short video platforms.

With the development of knowledge-based short videos, certain studies have been carried out in this field, mainly focusing on the determinant factors of the transmission effect of knowledge-content short videos and the attempts to combine short video platforms with e-learning education. A study has found that practical knowledge is the most popular among all the knowledge content and academic knowledge is less popular on TikTok; the content and quality of short-form videos are main factors affecting the transmission effect [4]. In addition, technical packaging, professional producers and regular updates are keys for knowledge short videos to achieve better communication effect [5]. Moreover, the knowledge-based short video plays a positive role in bridging the "Knowledge Gap" [6]. And TikTok is considered as an innovative learning tool for sport sciences courses [7]. However, there is a lack of specific analysis on the transmission components of knowledge short videos.

### 1.2 TikTok

TikTok is a short-form video application launched by ByteDance in September 2016. Initially positioned as a short-video platform mainly for young generation, TikTok allowed users to upload short videos up to one minute. Later the time limit of shooting was gradually relaxed. By now videos in 15 minutes can be shot on TikTok. In 2018, TikTok diversified its functions and began to satisfy preferences of more people with its "music+video+social" strategy. In recent years, the number of TikTok users has risen rapidly, with over 600 million daily active users in China and over 1.4 billion users of its overseas edition, TikTok has a huge influence in the short video field [8].

Among all kinds of short videos on TikTok, knowledge-based short videos are growing at a high pace. In 2021, a TikTok official report said that knowledge content on TikTok was developing rapidly, with year-on-year growth of 74%, making it one of the most popular categories. In addition, the views of knowledge-based videos accounted for 20% of the total video views in 2021 [9].

TikTok made considerable attempts to promote the transmission of knowledge. In terms of user interface, although there are not content zones for different short videos in the application, only a interface asking users for their viewing preferences, uploaders can add relevant tags to their videos, such as “knowledge”. On the web version of TikTok, there is a separate zone for knowledge videos. In terms of official activities, in 2019, TikTok, Bureau of Science Communication Chinese Academy of Sciences and China Science Daily launched the “Douzhi Project 1.0”, calling on knowledge content creators from various fields and disciplines to spread knowledge on TikTok. And in 2021, the “Mengzhi Project” was launched to encourage the creation of knowledge-based short videos for teenagers.

In addition, TikTok invited a number of Chinese universities, including Tsinghua University and Peking University to create their official accounts and hold open courses on TikTok in 2022. Driven by TikTok, the short-video platforms in China are in the process of the transformation from entertainment platforms to learning platforms.

### 1.3 Objective

Considering the quantity of users and the encouragement to knowledge content, this paper chooses short videos on TikTok as examples to analyse the senders, messages, mediums, receivers and feedback of knowledge short videos on China Internet. By understanding how people use short-form videos to acquire knowledge and analyzing the features of knowledge short videos in the mass communication process, the study may help optimise the services of short video platforms.

## 2. Analysis

### 2.1 Lasswell's 5W Communication Model

In 1948 communication theorist Harold Dwight Lasswell first propounded five components in the communication process: who, says what, in which channel, to whom and with what effect. Lasswell arranged these five components in a certain order and developed the “5W” model. This model is simplistic and does not take into account the complexity of the environment and the possibility of noise. However, the five components mentioned above are still useful for the analysis of knowledge-based short videos on TikTok.

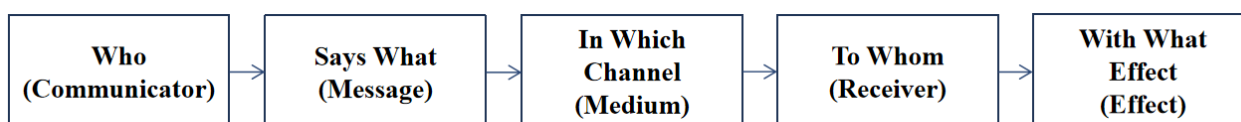


Fig. 1 Lasswell's 5W model

### 2.2 Who/Communicator

A communicator is a person who actively acts on others by sending messages. The main feature in short video platforms is the UGC (User-Generated Content) model. Compared to PGC (Professional-Generated Content) model, short video platforms emphasize decentralisation and encourage ordinary users to create content, so users can share and communicate with each other in a more equal way. Therefore, short video platforms offer the possibility of identity transformation between educators and learners. Users can be both “students” and “teachers” on a UGC platform.

The communicators are the users who publish knowledge-based short videos. Users can be divided into certified and non-certified users. On TikTok, certified users are considered to be more authoritative as they are required to upload credentials to the platform and have certain influence in

a content area. A study has shown that whether the communicators are certified or not has no significant effect on the transmission effect of knowledge short videos [4]. It shows that short-form video platforms do enable users to participate in the production of knowledge and the identity of a communicator does not become a hindrance. But also the professional level of communicators is variable. It can lead to a loss of the credibility of knowledge content on short-video platforms like TikTok.

In fact, short knowledge videos are also undergoing the recentralization. Recentralization is a systematic process to integrate resources, deliver value, build trust and get profit in the context of the Internet community economy [10]. For example, TikTok cooperated with Chinese Academy of Sciences (CAS) in 2020. About 65 CAS institutes created their official accounts on TikTok and established a science popularization matrix. These accounts are interlinked and interactive, allowing CAS to gain more influence as a whole on TikTok and achieve the recentralisation. Nowadays the communicators of knowledge-content videos are in a constant state of change between decentralisation and recentralisation.

### 2.3 Says What/Message

In the study the message refers to the knowledge content of short-form videos, or knowledge itself. Knowledge-based short videos on TikTok cover many categories, including life skills, popular science, humanities and arts, education, sports, etc. One of the features of the content is that it is close to daily life. From the TikTok official report in 2021, among the top 3 knowledge content categories, the life skills category ranked first. In terms of the number of short videos, the life skills category increased by 219%, ranking first [9]. Compared to the professional knowledge, knowledge related to daily life receives more attention on TikTok. For example, “Why are coke bottles round and milk cartons square?” posted by the account “Helaoshi”, raised a question from a common phenomenon in life and received 1.403 million likes.

Another feature of the content is the popularity of trivia or unusual facts. Short-video platforms like TikTok help to bring knowledge that is not included in textbooks into the limelight, and a variety of unusual knowledge and new perspectives are welcomed. In this kind of informal learning process, learners do not learn the knowledge purposefully, but rather absorb them without realising it. Knowledge short videos can help people to expand the horizons and discover new interests.

Although short videos have substantial content, they have many problems too. A survey conducted by the Social Survey Centre of China Youth Daily in 2021 among 2015 respondents showed that 63.9% of respondents believed that short videos about knowledge had the problem of homogenous content and 50.3% believed that pseudoscience was flooding on the platforms [11]. Some users who upload knowledge short videos only follow suit. For example, after the promulgation of the 2022 Nobel Prize, a large number of videos about the introduction of Nobel Prize winners appeared on TikTok, with alike content. In addition, some misconceptions and rumours were packaged and spread as knowledge. In January 2020, a user uploaded a short video on TikTok saying that “pomelo oil and green tea can cure COVID-19” and misled the viewers. Pseudoscientific short videos can spread misinformation and even create unnecessary panic among viewers.

### 2.4 In Which Channel/Medium

The medium is also known as the channel. In this study the medium is short videos and the platforms. From text to short-form videos, development of the Internet has enabled knowledge dissemination to undergo a shift from elitism to popularization. On the one hand, the production relations of knowledge has changed. Everyone can participate in the production and dissemination of knowledge. On the other hand, the Internet has made the access to knowledge more convenient and expanded the space for informal learning [12]. As a new medium on the Internet that combines pictures, text, video and audio, short-form video meets the user's timely and fragmented needs and is a supplement to formal learning methods such as books and lectures. Knowledge-based short videos take an entertaining, simple and intuitive approach to spreading knowledge. Specifically, the

commentary of actual people, colloquial expressions and animations are common techniques. These skills can make the teaching more interesting and easier to understand.

In addition to the diversity of communication forms, another feature of short videos as a medium is their brevity. In the era of information explosion, people's ability to concentrate is decreasing. Besides, "the rate of watched full video" measures the proportion of people who watched the video completely and now it is an important indicator of video quality. And shorter videos mean that viewers are more likely to finish watching them. A study on lecture videos showed that the content of videos in 3 minutes is inadequate [13]. Therefore there is a dilemma between the videos' short duration and the full explanation of content. The fragmentation of knowledge is a reason why people question the effectiveness of short videos for learning.

The uploaders on TikTok try to solve this problem in two ways. The first way is to lengthen the videos. In June 2020, TikTok adjusted the limit of video length to 15 minutes, which encouraged the emergence of longer videos on TikTok. The second way is to segment videos into shorter ones. A knowledge-content video on one topic is usually divided into three short videos of about 2 minutes, each telling a main point. This kind of segmentation can be considered as a compromise between statistics and knowledge dissemination. Short video can have a higher full-watched rate in this way, but at the same time it is not conducive to dig into the knowledge.

Moreover, TikTok uses recommendation algorithms. One type of the recommendation bases on content interests and another type bases on social-media network [14]. On the one hand, these algorithms increase user stickiness and cater to user preferences. While on the other hand, the Information Cocoon Effect makes it difficult for users to break out of their existing perceptions and opinions. Users who are not interested in learning may never watch knowledge-based short videos and the recommendation algorithms reinforce this tendency.

## 2.5 To Whom/Receiver

The receiver is the recipient of the message and the receiver influences the communicator through feedback. Based on the UGC model of short video platforms, users can be both communicators and receivers. The number of receivers of short video platforms is huge. There are over 900 million short video users in China and over 800 million monthly active users on TikTok. As of June 2022, TikTok users aged 24-30 accounted for the largest proportion for about 28.8% and 19.7% of the users were under 24 years old, indicating that there were more youth groups among TikTok users. The report on young generation on TikTok released by Ocean Insights shows that 44.3% of young people aged 18-23 want to learn new knowledge on TikTok [15]. Short videos are becoming one of the knowledge sources for teenagers and an important way to promote their overall development.

Comparing to formal learning, the informal learning behaviour performed by the viewers of short videos is more random and less purposeful. Also, the interaction between learners and educators, learners and learners, as well as learners and learning materials is more important to this kind of informal learning because viewers' likes, forwards and shares will all become rating systems for the "courses" through the recommendation algorithms of platforms, with higher rated videos gaining more traffic and more viewers. The comments section can be a space for discussion and feedback between uploaders and learners, and between the learners. From this perspective, the viewers of knowledge-based short videos have more power to judge than the learners in a traditional classroom.

## 2.6 With What Effect/Effect

Generally speaking, the effect of communication refers to the emotional, cognitive and behavioural responses of the receiver caused by communication activities. First, the effect of communication is concerned with the range and impact of communication. From this point of view, short videos have already had a extensive scope. As of November 2021, the number of views of knowledge-based short videos has exceeded 6.6 trillion on TikTok. In 2021 knowledge short videos gained over 146.2 billion likes, over 10 billion comments and over 8.3 billion shares, making TikTok the largest knowledge popularisation platform in China [16].

Second, the communication effect is also about the reaction of the receiver. Knowledge-based short videos provide users with a learning method which is lower in time, space and economic cost. It is conducive to creating better learning atmosphere on the Internet and encouraging users' learning behaviour. While the short and superficial content and the randomness of users' viewing make watching knowledge-content short videos an inefficient way of learning. What users get from short videos are disordered “knowledge fragments”, which are very different from knowledge learned systematically. Learners need to filter and reorganize the fragments into new knowledge systems.

### **3. Suggestion**

#### **3.1 Content: Increase the Credibility of Content and Set up a Feedback Mechanism for Questioning**

In the future, short-video platforms need to strengthen the regulation of knowledge short videos. The authenticity of knowledge content is an important issue and it is relevant to both the communicator and the content itself. For uploaders, obtaining official certification is one way to ensure the reliability of the video sources. While the credibility of content relies on the supervision of the platforms. The human-computer collaborative review and filtering mechanism is the feature of TikTok's distribution algorithmic model. When a short video is uploaded, the platform automatically monitors the content. And if there are violations, the video will be transferred to a manual inspection session for a second review.

However, the platform's manual review and algorithms cannot be familiar with every academic field, so it is necessary to allow the video's viewers to raise questions. TikTok can set up a feedback option at the bottom of the video, allowing short-video viewers to question the video content. And after receiving the feedback, platform should contact a trusted third party to make a judgment and make the relevant process public. A feedback mechanism can help to reduce the spread of pseudoscience and misconception and strengthen the viewers' impression of knowledge.

#### **3.2 Motivation: Stimulate Interest in Learning and Increase Viewer-oriented Incentives**

Motivating users is the key to helping knowledge videos spread. Creators of short videos need encouragement from the platform to produce more high-quality work. This is something that TikTok has already started to do. In 2021 TikTok has launched the “Douzhi Project 2.0”, which is planned to serve knowledge content creators in all aspects. For viewers, watching short videos with knowledge content also needs to be incentivised. At the moment, there is no incentive system for viewers, except for the “teenager mode” where the algorithm recommends more educational and knowledge-based content.

To stimulate users' interest in learning, platforms can encourage the viewing of knowledge short videos by running online knowledge competitions or by redeeming points for prizes. A note-taking function should also be set up to facilitate users to record the things they learned.

#### **3.3 Interaction: The Construction of a Learning Community**

Some scholars who study micro-course design suggest that interaction in micro-courses includes communication, sharing and a learning community. The learning community is primarily a group of learners and facilitators (including teachers, experts, tutors and parents) who share experiences, emotions and ideas with each other and ultimately improve the learning [17]. The interaction theory can be applied to the discussion of knowledge-based short videos. The sharing behavior is reflected in the sharing of videos by users, while the communication is focused on bullet screens and comments sections, and the learning community is a group of creators, platforms and viewers. Short-video platforms should enhance social interaction functions and the construction of learning communities. For example, add quiz functions when the video is playing or set up knowledge communities for discussion and further communication.

## 4. Conclusion

With the spread of mobile devices and the development of the Internet, short videos are rapidly becoming popular worldwide. And short videos with knowledge content have become a way of fragmented learning. Short videos lower the threshold for knowledge dissemination and acquisition and attract viewers to learn in a fun and light-hearted way. But compared with formal learning, the knowledge disseminated through short videos is not reliable enough. Moreover, the viewers are likely to stay at the stage of learning knowledge fragments, unable to form a systematic and useful knowledge system. Information Cocoon and algorithms also affect the transmission effect of knowledge-based short videos like a double-edged sword. This study provide suggestions for video platforms in three aspects: content, motivation and interaction. Platforms should pay attention to users' needs, increase questioning feedback and viewing incentives, and pay attention to the construction of learning communities.

This study attempts to examine short videos as a form of informal learning, both in terms of communication studies and online education, in the hope that it will contribute to attempts to incorporate short videos into education. In addition, this study is based on the TikTok platform and the Internet situation in China. The use of knowledge short videos in other countries and on other platforms require further research.

## References

- [1] CNNIC. The 50th Statistical Report on China's Internet Development. August 31, 2022. Retrieved on November 15, 2022. Retrieved from: <http://www.cnnic.net.cn/NMediaFile/2022/0926/MAIN1664183425619U2MS433V3V.pdf>.
- [2] FastData. TikTok Ecological Development and Global Short Video Ecological Layout Report. October 10, 2022. Retrieved on November 15, 2022. Retrieved from: <https://www.doc88.com/p-74487813146137.html>.
- [3] CSM Media Research. Report of Short Video Users in 2021. October 28, 2021. Retrieved on November 15, 2022. Retrieved from: <http://www.100ec.cn/index/detail--6602520.html>.
- [4] LI Yongning, WU Ye, YANG Puyu, ZHANG Lun. Content is king: a study on the knowledge dissemination mechanism of social short video platforms. *News and Writing*, 2019, (06): 23-32.
- [5] LIU Siqi, ZENG Xiangmin. Study of the key components and dissemination logic of knowledge-based short videos - a qualitative comparative analysis based on knowledge short videos from Bilibili.com (QCA). *Journalism and Mass Communication*, 2022, (02): 30-39+48.
- [6] H. Chen, J. Jin, X. Liu, Y. Zhang. Analysis of the role of short knowledge videos in bridging the Knowledge Gap in school education in the 5G era: take bilibili as an example. In: 2021 2nd International Conference on Information Science and Education (ICISE-IE), Chongqing, 1119-1122, 2021.
- [7] Paloma Escamilla-Fajardo, Mario Alguacil, Samuel López-Carril. Incorporating TikTok in higher education: pedagogical perspectives from a corporal expression sport sciences course. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 2021, (28): 100302.
- [8] Mansoor Iqbal. TikTok Revenue and Usage Statistics (2022). November 11, 2022. Retrieved on December 15, 2022. Retrieved from: <https://www.businessofapps.com/data/tik-tok-statistics/>.
- [9] China Youth Daily. Douyin releases a report on knowledge content, views of related videos rise by 74 percent this year. October 14, 2021. Retrieved on December 15, 2022. Retrieved from: <https://baijiahao.baidu.com/s?id=1713591213709982964&wfr=spider&for=pc>.
- [10] YANG Wei, SUN Tianyi. A comparison of two communication logics and operation models of mobile short video: take "Kuaishou" and "TikTok" as examples. *Contemporary TV*, 2019, (07): 84-87.
- [11] China Youth Daily. Knowledge-based short videos: respondents believe the biggest problem is content homogenisation. March 18, 2021. Retrieved on December 15, 2022. Retrieved from: [http://news.youth.cn/sh/202103/t20210318\\_12780233.htm](http://news.youth.cn/sh/202103/t20210318_12780233.htm).

- [12] Tsinghua University, ByteDance. Research Report on Short Video and Knowledge Dissemination. January 8, 2019. Retrieved on December 15, 2022. Retrieved from: <https://www.docin.com/p-2165923175.html>.
- [13] Manasrah, Ahmad M. et al. Short videos, or long videos? A study on the ideal video length in online learning. In: 2021 International Conference on Information Technology (ICIT), Amman, 366-370, 2021.
- [14] ZHAO Chenwei, LIU Tao, DU Haihong. An algorithmic study on the video recommendation model of TikTok short video platform. View on Publishing, 2019, (18): 76-78.
- [15] Ocean Insights. The report on young generation on TikTok in 2022. January 8, 2019. Retrieved on July 7, 2022. Retrieved from: <https://trendinsight.oceanengine.com/arithmetic-report/detail/749>.
- [16] Guangming Daily. Science anchors bring advanced scientific knowledge within reach. January 11, 2022. Retrieved on December 15, 2022. Retrieved from: [https://kepu.gmw.cn/2022-01/11/content\\_35440215.htm](https://kepu.gmw.cn/2022-01/11/content_35440215.htm).
- [17] JIANG Wantong, WANG Cuiping, TANG Yewei, WU Jing. Study on the micro-lecture design dimension based on Knud Illeris full view learning theory. Modern Distance Education, 2017, (01): 51-56.