The Impact of New Media Short Videos on Users' Deep Thinking Ability: A Study of "Increase and Decrease"

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Abstract

With the rapid development of mobile internet technology, short videos have become one of the primary means of information acquisition and entertainment in contemporary society. This study focuses on the impact of short video usage on users' deep thinking ability, exploring the correlation mechanism and influencing factors through a combination of questionnaire surveys and case analyses. Based on cognitive load theory, limited capacity model, and attention economics theory, this study constructs an analytical framework incorporating content characteristics, usage behavior, user characteristics, platform mechanisms, and external environment. The research reveals that short videos have a dual impact on users' deep thinking ability. The survey results indicate that excessive use of short videos can lead to attention dispersion, fragmented thinking, and decreased deep processing capacity. However, through reasonable use and high-quality content selection, short videos can also become an effective tool for stimulating thinking and expanding cognition. The degree of impact primarily depends on factors such as usage duration, content selection, and viewing purpose, while being moderated by user education background, age characteristics, and media literacy level. Based on the research findings, this study proposes targeted suggestions from individual, platform, educational, and social perspectives, including establishing reasonable usage habits, optimizing platform content ecology, strengthening media literacy education, and constructing a healthy development environment. The research results have significant theoretical value and practical implications for understanding and addressing the cognitive challenges of the short video era and promoting the cultivation of users' deep thinking ability.

Keywords

New media, short videos, deep thinking.

1. Introduction

(1) Research Background

In the context of digitalization, new media short video platforms, represented by Douyin and Kuaishou, have rapidly emerged, and short videos have quickly penetrated into people's lives, becoming an important channel for entertainment and information acquisition, and even the primary channel. This phenomenon has not only greatly changed the way information is disseminated but also deeply influenced and changed people's daily lives and social interactions. As of June 2024, the number of internet users in China has reached nearly 1.1 billion, with short video users accounting for 95.5% of the total internet users. This data also illustrates the widespread use and influence of short videos in modern society.

However, the rapid development of short videos has also raised concerns about its potential impact on users' deep thinking ability. On the one hand, short videos, with their low threshold and wide dissemination, have attracted a large amount of commercial capital, leading to an overemphasis on visual effects, with some creators catering to certain users' curiosity and pursuing superficial visual extravagance. This trend may cause users to gradually lose their deep thinking ability while enjoying spiritual relaxation, becoming trapped in a virtual sensory world.

On the other hand, the algorithmic recommendation mechanism and social fragmentation characteristics of short video platforms make it easier for users to fall into information cocoons, limiting their exposure to diverse perspectives and in-depth discussions, thereby becoming numb. Meanwhile, the fast-paced and intense visual impact of short videos, accompanied by strong rhythmic music, may distract users' attention, making it even more challenging to engage in deep thinking.

Furthermore, the big data algorithmic push of short videos has significantly reduced the difficulty of users receiving information, causing users to unconsciously reduce their autonomous information retrieval. These issues not only relate to individual cognitive development but also to the overall thinking quality of society and the healthy development of the media ecosystem.

(2) Research Purpose and Significance

This study aims to investigate the impact of short videos on users' deep thinking ability in the context of new media. We hope that through this research, we can gain a deeper understanding of the potential effects of short videos on users' deep thinking ability and provide strategies and suggestions for building a healthier and more diverse information environment.

The results of this study will help us better understand how to balance the rapid iteration of information with deep thinking in the digital age, and how to maintain and enhance social thinking vitality and innovation ability while enjoying the convenience brought by short videos. This has important theoretical significance and practical value for individual cognitive development, social thinking quality, promoting the healthy development of the media ecosystem, and enhancing public information identification ability.

(3) Definition of Related Concepts

Currently, there is no clear standard definition of "new media" at home and abroad. This study adopts the definition of new media by Zhang Dazhong, General Manager of Shanghai Oriental Cable Network: "A communication form that uses digital technology and network technology to provide information and entertainment services to users through the Internet, broadband local area networks, wireless communication networks, satellites, and other channels, as well as computers, mobile phones, digital TVs, and other terminals." [1]The concept of "short video" comes from global new media practices. Compared with traditional long videos, short videos have shorter playback times, usually measured in minutes and seconds, with 4-5 minutes being the most common. The broadcasting platforms are mainly network PC and mobile terminals, and the content covers a wide range of topics, including news, skills sharing, humor, fashion, advertising, public welfare, and education. Short videos have the characteristics of mobility, fragmentation, and socialization. This study mainly focuses on short videos published on new media platforms.

Maureen Chiquet, former CEO of Chanel, defined deep thinking in her book "Beyond the Label: Women, Leadership, and Success on Our Own Terms" as "continuously approaching the essence of the problem." [2] Daniel Kahneman described deep thinking as the ability to critically analyze information, involving the integration, evaluation, and reasoning of information, which helps us avoid being misled by surface phenomena and make wiser decisions. [3] Therefore, this

study defines "deep thinking ability" as the ability to "critically analyze and reason information, continuously seeking its fundamental nature."

2. Literature Review

(1) The Development of New Media Short Videos

Short video applications first emerged in the United States. Viddy, founded in 2010, officially released its mobile short video social application product on April 11, 2011. Viddy positioned itself as a "fun and simple way to create and share videos," helping users to instantly shoot, quickly produce, and conveniently share videos. At the same time, it connected with social media platforms such as Facebook, Twitter, and YouTube in real-time, allowing users to exchange videos in addition to text, images, and voice messages.

With the widespread use of the internet and smartphones, as well as the continuous development of social media, comprehensive social short video platforms such as Miaopai and Kuaishou, and tool-based short video platforms such as Meipai and Xiaokaxiu, gradually entered the domestic public's field of vision. The explosion of Douyin short videos in 2018 led to a rapid growth in the number of short video users, and short videos gradually became the primary means of entertainment and information acquisition for the masses.

However, various problems gradually surfaced. Firstly, the quality of content varied greatly, with some creators producing low-quality, false, or sensational content to pursue traffic. Secondly, the algorithmic recommendation mechanism led to users easily falling into information cocoons, receiving increasingly homogeneous information. Thirdly, the commercial operation of short video platforms made them focus more on commercial value than social value, with content trending towards entertainment and superficiality[4]. Fourthly, excessive use of short videos may lead to users' attention dispersion, making it difficult to engage in continuous and in-depth thinking.

In recent years, short video platforms have begun to pay attention to these problems and have taken a series of measures, such as strengthening content review, optimizing algorithmic recommendation mechanisms, launching knowledge-based content, and limiting the use of minors. At the same time, the government has also introduced relevant policies and regulations to regulate the development of the short video industry. For example, in 2021, the State Administration of Radio, Film, and Television issued the "Notice on Strengthening the Standardized Management of Online Audio-Visual Program Platforms," requiring the strengthening of content management and promoting the healthy development of the industry.

From a technical development perspective, short videos are moving towards a more intelligent and personalized direction. The application of AI technology has made content creation, recommendation, and interaction more precise and efficient. The widespread use of 5G technology has provided better infrastructure support for high-definition video transmission and AR/VR content. From a business model perspective, short video platforms are exploring diversified monetization channels, such as live streaming, advertising, and knowledge-based payment. The maturity of these business models has helped platforms establish a sustainable and healthy ecosystem, but it also brings the risk of over-commercialization[5]. From a user behavior perspective, the use of short videos is becoming increasingly rich, expanding from simple entertainment to learning, shopping, and socializing. Users are also becoming more rational in their use of short videos, paying attention to content quality and time management.

In the future, the development of the short video industry will face more challenges and opportunities. On the one hand, it needs to solve problems such as content quality, algorithmic transparency, and user privacy protection. On the other hand, it also needs to seize the development opportunities brought about by technological innovation and explore more valuable content forms and business models. How to maintain the health of the platform

ecosystem and balance commercial value and social value will be an important issue facing short video platforms.

(2) Research on Deep Thinking Ability

Deep thinking is a high-level cognitive activity that involves multiple thinking levels, including analysis, synthesis, and evaluation. It requires individuals to be able to think systematically about problems, explore the essence of things, establish logical connections, and form independent opinions. Deep thinking is specifically manifested in the following aspects: critical thinking, which can question and verify the authenticity of information and rationally analyze and evaluate viewpoints; systematic thinking, which is good at thinking about problems from a holistic perspective and understanding the relationships and mutual influences between things; creative thinking, which can break through conventional thinking modes and propose novel and unique insights and solutions; and reflective thinking, which can review and reflect on one's own thinking process and continuously adjust and optimize thinking modes.

The development of deep thinking ability is influenced by a variety of factors. The quality of the educational environment directly affects whether it is conducive to cultivating independent thinking and innovative spirit; the information environment determines the quality and depth of information acquisition; the amount of time invested affects whether deep thinking can be conducted; the degree of focus affects whether sustained attention can be maintained; and knowledge reserves are the foundation of deep thinking[6]. These factors interact with each other and jointly influence the development of individual deep thinking ability.

(3) Current Research Status on the Relationship between Short Videos and Users' Deep Thinking Ability

The current academic research on the relationship between short videos and users' deep thinking ability focuses on several important aspects. In the study of information acquisition characteristics, scholars have found that short videos exhibit obvious fragmentation characteristics, with content mainly ranging from 15 to 60 seconds, and highly compressed information. At the same time, short videos have a strong entertainment orientation, with content mainly focusing on relaxation and fun, and relatively less in-depth content. Additionally, the fast-paced nature of short videos leads to rapid scene switching, high information density, but difficulty in retaining information.

In the study of cognitive impact, research has found that long-term use of short videos leads to a significant decrease in users' attention span, weakened deep processing ability, and fragmented thinking. Furthermore, users form a dependence on instant information acquisition. Reading behavior research shows that deep reading time decreases, quick browsing habits are formed, text comprehension depth decreases, and knowledge system construction is hindered.

Research on changes in thinking modes shows that users' thinking patterns are undergoing significant changes: linear thinking is shifting to jump-style thinking, systematic thinking is shifting to fragmented thinking, deep thinking is shifting to shallow thinking, and independent thinking is shifting to conformist thinking. To address these issues, researchers have proposed multi-faceted strategies: at the individual level, media literacy needs to be cultivated, and usage time needs to be controlled reasonably; at the platform level, content quality should be optimized, and in-depth content supply should be increased; at the educational level, thinking training should be strengthened, and critical thinking should be cultivated; at the social level, a good information ecological environment needs to be constructed[7].

Research shows that excessive use of short videos has multiple effects on users' deep thinking ability. Cognitively, the main manifestations are attention dispersion, difficulty in focusing for a long time, fragmented thinking, and lack of systematicity, with knowledge being quickly forgotten and difficult to retain. Behaviorally, users gradually form quick-switching browsing habits, lack patience for in-depth content, and tend to pursue instant gratification. In terms of

ability, critical thinking ability decreases, logical reasoning ability weakens, and creative thinking is restricted.

However, this impact is not unavoidable. Research also points out that reasonable use of short videos, combined with other learning methods, can have a positive effect on knowledge supplementation and thinking inspiration. The key is to balance usage and establish a healthy information acquisition and learning model. This requires users' self-regulation, as well as the joint efforts of platforms, educational institutions, and society as a whole.

3. Research Framework

(1) Theoretical Foundation

This study is mainly based on the cognitive load theory, limited capacity model, and attention economics theory. The cognitive load theory states that human working memory capacity is limited, and excessive information input can lead to cognitive overload, affecting the effective processing and deep processing of information. In the short video environment, the rapid switching of information flow can easily cause excessive consumption of cognitive resources, affecting the formation of deep thinking. The limited capacity model emphasizes the limited nature of human attention resources, and when the information to be processed exceeds the individual's attention capacity, attention dispersion and decreased information processing efficiency will occur. The fragmented and high-frequency switching characteristics of short videos can easily lead to excessive dispersion of user attention resources, making it difficult to form continuous and in-depth thinking. The attention economics theory explains the allocation mechanism of attention as a scarce resource from an economic perspective[8]. In the era of information overload, attention has become one of the scarcest resources. Short video platforms compete for user attention through algorithmic recommendations and content design, and this excessive competition for attention may lead to users' difficulty in allocating limited attention resources to deep thinking activities.

(2) Influencing Factor Dimensions

From the content characteristic dimension, the time limit, information compression degree, content depth, and presentation form of short videos will all impact users' thinking modes. The short duration leads to simplified content expression, and the highly compressed information transmission method may affect users' comprehensive understanding of issues, while the entertaining and emotional presentation form may weaken the demand for rational thinking.

From the usage behavior dimension, usage time, usage frequency, usage scenario, and usage purpose are important influencing factors. Excessive usage time will consume a large amount of cognitive resources, frequent usage will interrupt the continuity of deep thinking, fragmented usage scenarios will make it difficult to support systematic thinking, and usage purposes mainly focused on entertainment will weaken the motivation for deep thinking.

From the user characteristic dimension, age, educational background, cognitive ability, and media literacy level will all impact the effect of short video usage on deep thinking[9]. Different age groups have different cognitive development levels, educational background affects information reception and processing ability, individual cognitive ability determines the depth of information processing, and media literacy level affects users' selection and processing of short video content.

From the platform mechanism dimension, algorithmic recommendation mechanism, content review mechanism, user guidance mechanism, and commercial operation mode are all important factors. Algorithmic recommendations affect the breadth and depth of users' information exposure, content review decides content quality, user guidance mechanism affects the formation of usage habits, and commercial operation mode decides the content orientation and user experience design of the platform.

From the external environment dimension, social and cultural environment, education system, policy and regulations, and technological development level jointly constitute the influencing framework. Social and cultural environment affects value orientation, education system decides thinking cultivation method, policy and regulations regulate platform operation and content production, and technological development level decides the presentation and transmission method of short videos. These factors interact with each other and jointly affect the mechanism of short videos' impact on users' deep thinking ability.

4. Research Methods

(1) Questionnaire Survey Method

This study used a questionnaire survey method to collect user data. The questionnaire design included three parts: demographic characteristics, short video usage behavior, and deep thinking ability evaluation. Demographic characteristics included basic information such as age, sex, and education level; short video usage behavior mainly investigated daily usage time, usage frequency, and main content types watched; and deep thinking ability evaluation borrowed relevant dimensions from the California Critical Thinking Disposition Inventory (CCTDI) and designed evaluation questions that included analysis ability, critical thinking, and logical reasoning.

The questionnaire was distributed through a combination of online and offline methods, covering short video users of different ages, occupations, and educational backgrounds. A total of 1,200 questionnaires were distributed, and 1,056 valid questionnaires were recovered, with an effective recovery rate of 88%. The data was statistically analyzed using SPSS software to explore the correlation between short video usage behavior and deep thinking ability[10].

(2) Case Study Method

To gain a deeper understanding of the impact of short videos on users' deep thinking, this study selected three typical cases for analysis:

Case 1: Bilibili science popularization blogger "Li Yongle Teacher". As a typical in-depth knowledge science popularization account, its videos averaged 10-15 minutes in length and covered basic scientific knowledge such as physics and mathematics. By analyzing the comments and bullet screens of its 100 videos in 2023, it was found that long-term viewers exhibited strong exploratory desire and thinking depth in related fields. Data showed that the completion rate of its in-depth analysis videos reached 67%, far exceeding the platform's average level, and the discussion in the comment section presented a clear recursive thinking characteristic.

Case 2: Douyin knowledge creator "Luo Xiang Talks About Criminal Law". Its short video works cultivated users' legal thinking through case analysis. By analyzing 50 popular videos in the second half of 2023, it was found that although individual video lengths were only 3-5 minutes, they effectively guided users to think in multiple dimensions through case linking and problem-setting. The comment section frequently featured in-depth legal discussions, and users showed significant improvements in understanding legal concepts and analyzing cases.

Case 3: Xiaohongshu user "Tencent Medical Dictionary". This account focused on medical knowledge popularization and used a series of short videos to build a complete knowledge system. The study selected medical popularization content published from October to December 2023 and found that it cultivated users' systematic thinking through carefully designed content progression. Data showed that users who continuously watched its series of content exhibited stronger rational thinking abilities in understanding medical knowledge and making health decisions.

Through case analysis, it was found that high-quality knowledge-based short video content can promote users' deep thinking ability to a certain extent through reasonable content design and presentation methods. Key factors include the systematicity of content, the hierarchy of problem-setting, the coherence of knowledge transmission, and the effectiveness of interactive mechanisms. These findings provide a useful reference for short video platforms to optimize their content ecosystem and promote user cognitive development.

5. Conclusion

(1) Summary of Research Findings

Through a systematic study of the relationship between short video usage and deep thinking ability, this research has obtained the following main findings. Firstly, the impact of short video usage on users' deep thinking ability is two-sided. From a negative perspective, excessive use of short videos can lead to attention dispersion, fragmented thinking, and decreased deep processing ability; from a positive perspective, high-quality knowledge-based short video content can stimulate thinking, expand cognitive boundaries, and provide materials and perspectives for deep thinking. Secondly, the impact of short videos on deep thinking is highly related to usage patterns. The study found that users' usage time, content selection, and viewing purposes are decisive factors. Users who use short videos for more than 3 hours a day generally exhibit characteristics of short attention span and low willingness to think deeply; while users who selectively watch knowledge-based content and maintain moderate usage time can better balance information acquisition and deep thinking. Finally, different groups have significant differences in their cognitive processing abilities for short videos. Educational background, age characteristics, and media literacy level are important regulatory variables. Highly educated groups exhibit stronger information filtering abilities and critical thinking; adolescent groups are adaptable but more susceptible to the influence of fragmented information; users with high media literacy levels can better utilize short video platforms for knowledge construction and cognitive expansion.

(2) Countermeasure Suggestions

Based on the research findings, this study proposes the following targeted suggestions. At the individual level, it is recommended that users establish reasonable usage habits, including limiting daily usage time, selectively following high-quality content, and cultivating active thinking awareness. Users can set usage time reminders, establish content classification browsing mechanisms, and maintain a balance between short video usage and deep thinking. At the platform level, it is recommended to strengthen content quality control and algorithm optimization. On the one hand, platforms should optimize recommendation mechanisms to increase the exposure of knowledge-based and thinking-based content; on the other hand, they should encourage creators to produce in-depth content and establish incentive mechanisms that favor high-quality content production. At the same time, platforms can develop functional tools to help users manage their time and filter content. At the educational level, it is recommended to incorporate media literacy education into the regular education system to cultivate students' critical thinking abilities and information processing abilities. Schools can offer relevant courses to guide students in using short video platforms reasonably and cultivating active thinking habits. At the same time, teachers can use new media tools such as short videos to innovate teaching methods and stimulate students' thinking abilities. At the social level, it is recommended to construct a healthy short video ecosystem. Government departments can guide and regulate platforms through policies to promote their social responsibility; industry associations can establish content quality standards to promote industry self-regulation; social organizations can conduct media literacy education activities to improve the public's cognitive level.

(3) Research Limitations and Prospects

This study still has some limitations. Firstly, in terms of research methods, although a combination of questionnaire surveys and case analyses was used, there is a lack of long-term tracking research, making it difficult to fully grasp the long-term impact of short video usage on deep thinking ability. Secondly, in terms of sample selection, although different groups were covered, the regional distribution and occupational distribution are not yet balanced, which may affect the representativeness of the research results. Future research can deepen the following aspects. Firstly, conduct longitudinal research to explore the evolution of short video usage on deep thinking ability through long-term tracking observations. Secondly, expand the research dimension to include social and cultural factors, technological development trends, and other factors into the research framework. Thirdly, refine the research object to conduct in-depth research on specific age groups or occupational groups. Fourthly, innovate research methods to try to apply new research methods such as big data analysis and experimental research to improve the scientificity and accuracy of the research. Through continuous and in-depth research, we expect to better understand and grasp the development laws of deep thinking ability in the short video era and provide more targeted guidance and suggestions to promote users' cognitive ability development. This is not only related to individual cognitive development but also to the accumulation of intellectual capital and innovation ability of the entire society.

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