

A Comparative Study of Content Originality and Plagiarism in Teaching Game Short Video: Based on Users' Usage in Douyin and Kuaishou

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Abstract: In the contemporary era, with the growing popularity of short videos encompassing educational gaming content, individuals have exhibited an increasing inclination toward consuming creative and original video content. However, a concomitant rise in the prevalence of video plagiarism has hindered the effective resolution of this issue. The present study aims to investigate whether substantial disparities exist in user engagement patterns between original videos and copied videos. Employing a diverse selection of materials sourced from the two major short video platforms, Douyin and Kuaishou, this study meticulously analyzed various metrics including likes, comments, collection, and transmission volumes. Additionally, the study examined the influence of other pertinent factors. The research findings unequivocally indicate the presence of significant disparities between original videos and copied videos. This comprehensive analysis delves into the dissimilarities observed in the utilization patterns of basic users to offer valuable insights to researchers and practitioners involved in the study of originality and plagiarism within this domain.

Keywords: plagiarism, teaching game, short video Douyin, Kuaishou

1. Introduction

The rapid growth of the Internet and new media has led to the expansion of game companies catering to people's entertainment needs. Games such as Tencent's "King of Glory" and Netease's "Egg Party" have gained significant popularity. These games have also given rise to numerous short game videos, particularly instructional ones. The primary advantage of instructional game videos is their ability to capture the attention of game users through valuable content, making them suitable for advertising on short video platforms. However, the extensive creative scope of these videos and the level of skill required for their production have resulted in widespread plagiarism.

The creation of instructional game short videos requires proficiency in gaming and editing skills. However, this has led to a prevalent issue of copying among authors, resulting in fragmented viewership and the division of traffic. Consequently, a single skill may be featured across multiple short video accounts for a period of time [1]. Plagiarism is particularly common in popular videos, and the excessive repetition of similar video content gradually diminishes user interest. The escalating prevalence of plagiarism on the DouYin platform has resulted in a decline in user satisfaction. The abundance of videos with similar content has diluted the original meaning and value of DouYin,

thereby reducing the sensory experience for users. Regrettably, DouYin has become a platform utilized by some individuals as a means to attract attention and generate quick profits [2].

Furthermore, the short game video industry faces significant challenges related to infringement. This includes unauthorized use of games for short video production and the copying of game content. Complicating matters, the authors of short videos are dispersed across different regions, resulting in limited cost effectiveness for protecting their rights. Consequently, safeguarding the rights and interests of the right holders becomes increasingly challenging in practice [3].

The preceding analysis focused on plagiarism in game short videos in recent years. However, the previous article did not clarify the specific effects of game short videos. It merely highlighted the disparity between original and copied videos. Hence, it remains unclear whether the number of likes and favorites received by short instructional game videos is directly linked to the original content. Furthermore, it is uncertain whether there is a significant difference in the engagement metrics between original and copied videos. Additionally, the study explores whether other factors influence the flow of video content. To address these questions, a content analysis methodology was employed. Content analysis is an objective, systematic, and quantitative approach that effectively reveals the characteristics and shortcomings of video content.

The primary objective of this study is to examine whether there are substantial differences in user engagement when it comes to the originality and plagiarism of short video content. Specifically, the research focuses on DouYin and Kuaishou short videos that pertain to teaching games. The study aims to generate valuable data and insights pertaining to the innovation and plagiarism aspects of teaching game short videos on these platforms. The outcomes of this investigation can assist platform managers in effectively preserving the copyright and fostering an innovative environment on the respective platforms. Furthermore, the findings hold significant relevance for scholars conducting research in the field of game education, serving as a valuable point of reference for their future endeavors.

2. Literature Review

2.1. Status of Network Short Video Transmission

In recent years, with the development of Internet technology, the transmission mode of network short video has attracted more and more attention. Network short video is a new type of mobile video displayed through the Internet and smartphones. It has won the warm pursuit of the public with its advantages of short time, instant communication, rich content, and social interaction. However, there are similar and different views and analyses in different literature on the spread of network short videos.

Some scholars believe that the short online video is a new mode of communication and a cultural phenomenon [4], which is widely used among young users with its advantages such as popularization of participants, length of broadcast content and strong social interaction. In addition, short videos can also provide beneficial help for the dissemination of practical news and promoting positive social energy, to obtain good social benefits. However, other scholars believe that the output of a short online video is not necessarily part of its relevant industrial chain that can bring the economic benefits [5]. In contrast, the part that brings the economic benefits is often derivative from the spread of creativity. Therefore, relevant organizations should adopt different forms of creative videos to attract users' attention and put advertisements in the videos to gain profits. In addition, some scholars have noticed that the popularity of short online videos has also brought some problems [6]. Due to the low participation threshold of short video platforms, there are a large number of low-quality and low-innovation short videos. These short videos often have bad information, vulgar content, etc., which is easy to cause bad social influence, thus causing social dissatisfaction and doubts.

To sum up, as a new mode of communication and cultural phenomenon, short network video has a wide application prospect among young users. However, relevant institutions should note that the output of a short video is not necessarily part of the relevant industrial chain that can bring the economic benefits, but the part that can bring the greatest economic benefits is often the derivative products after the spread of creative sources. In addition, the supervision of short online videos should be strengthened to avoid the negative impact of low quality and vulgar content on society.

2.2. Status of Original Short Videos Communication

Network short video has become an emerging cultural phenomenon and communication mode in the current society, among which DouYin, Kuaishou, and other platforms have become the mainstream short video platforms. With the rise of original short videos, more and more brokerage firms began to enter the field. According to the data of [7], the traffic of vertical content accounts for more than 60% of the total video, indicating that specific groups are more likely to be gathered and attracted, which is of great significance to the accurate advertising of advertisers. Therefore, it is very necessary to make differentiated creations. This kind of original short video is easier to be recommended by the platform algorithm and easier to get more demand.

Similarly, Sun Wei put forward a similar view, that is, targeted creation can better attract the audience [8], and then obtain more traffic and advertising revenue. However, He Yunxi et al [5]. believe that the output of a short video is not necessarily a part of the relevant industrial chain that can bring the economic benefits, and the biggest economic benefits are often the derivatives after the spread of creative sources. This is slightly different from the focus of the previous two articles, but it also shows that there are many ways of economic benefits in the short video industry.

Therefore, combined with the information from the three articles, the following comprehensive analysis can be obtained: In the current network short video industry, the traffic of vertical content accounts for a large proportion, so targeted creation can better attract the audience, and obtain more traffic and advertising revenue. In addition, although there are a variety of economic benefits in the short video industry, the commercial realization and brand marketing of the original short videos have achieved remarkable results, so the original short videos will have a more extensive application and better development in this industry.

2.3. Plagiarism in Short Videos

With the rise of DouYin, Kuaishou, and other original short video platforms, there are more and more brokerage companies in the field of original short videos. However, short video platforms are faced with problems such as information overload and duplication, which leads to audience aesthetic fatigue, and causes the phenomenon of short video plagiarism. This paper comprehensively analyzes several documents and believes that in order to avoid the homogenization of short videos, short video creators should create targeted content and focus on vertical content to better gather specific groups and conduct precise advertising. In addition, for the phenomenon of short video plagiarism, it is necessary to strengthen legal supervision and copyright awareness to avoid plagiarism and improper citation of short video content.

According to some literature, vertical content accounts for more than 60% of the total video traffic [7]. Therefore, creators should abandon the cut-bar mode and carry out targeted creation. This kind of original short video is more likely to be recommended by the algorithm of the short video platform, and the on-demand volume will be greatly improved [8].

However, short video platforms are facing problems such as information overload and duplication [6]. Due to the low threshold, high public participation [9], the original short videos and no specific rules, short video copyright legal boundaries are relatively fuzzy, and people's copyright

consciousness is weak [10], so a lot of plagiarism phenomenon [5]. Popular videos will always cause wave after wave of imitation, and some videos from lines, modeling to scene copy the original popular video, this blind copycat phenomenon seriously deepened the DouYin game's short video content homogeneity, leading to a short video quality decline, the audience fatigue, lack of freshness, leading to user loss [2].

To sum up, the development of short video platforms needs to avoid homogenization, creators should create targeted content, pay attention to vertical content, strengthen legal supervision and copyright awareness, and avoid plagiarism and misconduct in short video content.

2.4. Status of Teaching Short Video Communication

Teaching game short videos are characterized by informative content, but their update frequency tends to be slow. Once original skills are broadcasted as short videos, they quickly attract numerous reproductions by other creators, leading to a division of traffic. Consequently, multiple short video accounts may feature the same skill for a certain period [1]. Currently, the legal system lacks provisions for the identification of "effective notice" within the "deletion and notice" mechanism, which is one of the means of protecting short videos. While the Regulations on the Protection of the Right of Information Network Transmission outlines the constituent elements of effective notice, it lacks clear regulations on specific notification procedures and whether insufficient notification still requires effective protection [10]. Therefore, future development should focus on promoting the healthy growth of the entire short video industry by enhancing the supervision system for original short videos, optimizing the ecosystem through social media integration, supporting high quality content, and exploring profit directions and business models aided by strategies such as big data analysis [7].

2.5. Based on the above Literature Review, This Study Raises the Following Hypothesis and Research Question

Hypothesis 1: Users of short videos of original teaching games will have (a) liked quantity, (b) comment volume, (c) transmit volume, and (d) Collection volume in DouYin and Kuaishou significantly higher than users of short videos of plagiarized teaching games.

Research Question 1: Is there a significant difference between the video duration of original teaching games and plagiarism teaching games?

3. Methods

3.1. Population and Sample

3.1.1. Sampling Platforms

DouYin and Kuaishou were selected as the sampling platforms for two main reasons. Firstly, as leading enterprises in China's short video industry, DouYin and Kuaishou collectively have over 600 million active users as of January 2021, accounting for 40% of China's total and 8% globally. Consequently, data obtained from these platforms carry greater authority. Secondly, the target audience for teaching game short videos tends to be younger, with users aged 19-24 constituting 40% of DouYin's user base and users aged 25-35 accounting for 43% of Kuaishou's user base. Therefore, data collected from these platforms represent a more representative and common audience.

3.1.2. Sample Types and Platform Distribution

The sample consisted of two types: original and copied. The frequency of original samples was 50, accounting for 50% of the total sample. Both the effective percentage and cumulative percentage were also 50%. Similarly, the frequency of plagiarism samples was 50, representing 50% of the total sample, with the effective and cumulative percentages at 100%.

The platform table illustrates the platform types used by the sample. Among the valid samples, 54% were from DouYin and 46% were from Kuaishou. The effective and cumulative percentages correspond to these values.

3.1.3. Statistical Data

The statistical data table provides relevant information about the sample. The column “time” has a mean value of 145.98, “like” has a mean value of 98,901.95, “comment” has a mean value of 11,243.25, “transmit” has a mean value of 11,389.39, and “collect” has a mean value of 9,253.83. The “Std. Deviation” column represents the degree of dispersion for each variable, with standard deviations of 105.679 for “time”, 200,565.117 for “like”, 27,154.701 for “comment”, 23,262.446 for “transmit”, and 22,989.685 for “collect”. Furthermore, the sample consisted of 100 valid cases without any missing values.

Table 1: Type.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Original	50	50.0	50.0	50.0
	Plagiarism	50	50.0	50.0	100.0
	Total	100	100.0	100.0	

Table 2: Platform.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	DouYin	54	54.0	54.0	54.0
	KuaiShou	46	46.0	46.0	100.0
	Total	100	100.0	100.0	

Table 3: Statistics.

		Time	Like	Comment	Transmit	Collect
N	Valid	100	100	100	100	100
	Missing	0	0	0	0	0
Mean		145.98	98901.95	11243.25	11389.39	9253.83
Std. Deviation		105.679	200565.117	27154.701	23262.446	22989.685

3.2. Procedure

This study focused on short videos depicting teaching games and employed a sample collected from the popular short video platforms, DouYin and Kuaishou. The objective of this survey was to compare the proportion of original and plagiarized content within the selected short videos, while also analyzing the prevalence of plagiarism. To accomplish this objective, the study selectively sampled short videos featuring teaching games from both DouYin and Kuaishou platforms. The sample was

designed to encompass a variety of game types, teaching methodologies, video styles, and other relevant variables.

The process of selecting original videos prioritized their uniqueness and innovation. Typically created by individuals or small teams on the platform, these videos exhibited a high degree of creativity and originality. Additionally, an analysis of metrics such as likes, comments, and collections was conducted to ascertain the influence and popularity of these original videos within the platform.

The process of selecting copied videos involved a careful assessment of both the source and content similarity. Copied videos are typically obtained from alternative platforms or users, often involving the unauthorized replication of ideas and content. Through meticulous analysis and comparison of video content, the nature of plagiarism was ascertained, along with the identification of the original source of the theft. A total of 50 videos were selected based on these criteria. Among the plagiarized videos, some exhibited minor modifications while closely resembling the original videos, while others were found to be complete replicas, lacking uniqueness and originality.

To identify original and copied short videos, a sample of 80 diverse teaching game videos were initially selected from both DouYin and Fast platforms. Video label search was utilized to identify similar game videos, and through careful comparison, two videos exhibiting the highest similarity were identified. Considering factors such as video likes, collection rates, and seeking input from individuals with a regular viewership of such videos, a final selection of 50 accurately classified original short videos was made. In contrast, 50 fully copied videos with subtle modifications were chosen to serve as the copied short videos.

The data collection process involved obtaining relevant information from the sample videos, including their title, labels, video length, collection rates, likes, comments, retweets, and the degree of originality. This information formed the main content of the collected data and was subjected to subsequent processing and analysis.

The standardization and classification of the collected teaching game short videos were essential for this study. The criteria for standardization included factors such as game type, teaching method, and video style. Defining these classification criteria ensured that the collected samples were representative and enabled meaningful comparisons to be made.

3.2.1. Liked Quantity

Table 4: Group statistics.

	type	N	Mean	Std. Deviation	Std. Error Mean
like	original	50	167296.36	261804.651	37024.769
	plagiarism	50	30507.54	56440.078	7981.832

Analysis from the statistical information of likes: original short videos (mean =167296.36, standard deviation = 261804.651, standard error =37024.769) is much higher than copied short video (mean =30507.54, standard deviation = 56440.078, standard error =7981.832).

Table 5: Levene's test for equality of variances.

		F	Sig.
like	Equal variances assumed	20.724	<.001

An independent t-test was conducted to determine whether or not original (M=167296.36, SD=261804.651) or plagiarism (M=30507.54, SD=56440.078) have more LIKE. Levene's test for equality of variances was significant (F=20.724, p<0.001), so equality of variances can be not assumed, t (53.545) =3.612, p<0.001. There is a significant difference in LIKE between original and plagiarism. Since the sample shows that the number of original short videos is much higher than that of copied short video, and the independent test is significant, it is inferred that the number of original short videos is much higher than that of copied short video.

3.2.2. Comment Volume

Table 6: Group statistics.

	type	N	Mean	Std. Deviation	Std.Error Mean
comment	original	50	19250.10	36679.634	5187.284
	plagiarism	50	3236.40	3684.101	521.011

Analysis from the statistical information: the original short videos (mean =19250.10, standard deviation = 36679.634, standard error =5187.284) is much higher than that of the copied short video (mean =3236.40, standard deviation =3684.101, standard error =521.011).

Table 7: Levene's test for equality of variances.

		F	Sig.
comment	Equal variances assumed	13.249	<.001

An independent t-test was conducted to determine whether or not original (M=19250.10, SD=36679.634) or plagiarism (M=3236.40, SD=3684.101) have more COMMENT. Levene's test for equality of variances was significant (F=13.249, p<0.001), so equality of variances can be not assumed, t (49.989) =3.072, p<0.001. There is a significant difference in COMMENT between original and plagiarism. Since the sample shows that the number of comments on original short videos is much higher than that of copied short videos, and the independent test is significant, it is inferred that the number of comments on original short videos is much higher than that of copied short videos.

3.2.3. Transmit Volume

Table 8: Group statistics.

	type	N	Mean	Std. Deviation	Std.Error Mean
transmit	original	50	18872.64	30840.847	4361.554
	plagiarism	50	3906.14	5280.617	746.792

Analysis from forwarding statistical information: original short videos (mean =18872.64, standard deviation = 30840.847, standard error =4361.554) is much higher than that of copied short video (mean =3906.14, standard deviation =5280.617, standard error =746.792).

Table 9: Levene's test for equality of variances.

		F	Sig.
transmit	Equal variances assumed	27.044	<.001

An independent t-test was conducted to determine whether or not original (M=18872.64, SD=30840.847) or plagiarism (M=3906.14, SD=5280.617) have more TRANSMIT. Levene's test for equality of variances was significant (F=27.044, p<0.001), so equality of variances can be not assumed, $t(51.871) = 3.382$, p<0.001. There is a significant difference in TRANSMIT between original and plagiarism. Since the sample shows that the forwarding number of original short videos is much higher than that of plagiarized short videos, and the independent test is significant, it is inferred that the forwarding number of original short videos is much higher than that of plagiarized short videos.

3.2.4. Collection Volume

Table 10: Group statistics.

	type	N	Mean	Std. Deviation	Std. Error Mean
collection	original	50	15517.84	31161.057	4406.839
	plagiarism	50	2989.82	4092.530	578.771

Analysis from the statistical information of collection: original short videos (mean =15517.84, standard deviation = 31161.057, standard error =4406.839) is much higher than that of copied short video (mean =2989.82, standard deviation =4092.530, standard error =578.771).

Table 11: Levene's test for equality of variances.

		F	Sig.
collect	Equal variances assumed	27.044	<.001

An independent t-test was conducted to determine whether or not original (M=15517.84, SD=31161.057) or plagiarism (M=2989.82, SD=4092.530) have more COLLECT. Levene's test for equality of variances was significant (F=13.964, p<0.001), so equality of variances can be not assumed, $t(50.690) = 2.819$, p<0.001. There is a significant difference in COLLECT between original and plagiarism. Since the sample shows that the number of original short videos is much higher than that of plagiarized short videos, and the independent test is significant, it is inferred that the number of collections of original short videos is much higher than that of plagiarized short videos.

3.2.5. Video Time

Table 12: Group statistics.

	type	N	Mean	Std. Deviation	Std. Error Mean
time	original	50	164.94	114.550	16.200
	plagiarism	50	127.02	93.319	13.197

Analysis from the statistical information of video duration: original short videos (mean =164.94, standard deviation = 114.550, standard error =16.200) is not much different from copied short video (mean =127.02, standard deviation =93.319, standard error =13.197).

Table 13: Levene’s test for equality of variances.

		F	Sig.
time	Equal variances assumed	3.188	.077

An independent t-test was conducted to determine whether or not original (M=15517.84, SD=31161.057) or plagiarism (M=2989.82, SD=4092.530) have more TIME. Levene’s test for equality of variances was significant (F=3.188, p=.077), so equality of variances can be assumed, t (98) =1.815, p=.073. There is NO significant difference in TIME between original and plagiarism. Although the sample shows that the time of original short videos is higher than that of copied short videos, the independent test is not significant, it cannot be inferred that the overall time number of original short videos is higher than that of copied short videos.

4. Conclusion and Discussion

4.1. Impact of Originality on User Engagement in Teaching Game Short Videos

The research findings demonstrate that the value of original teaching game short videos surpasses that of plagiarized counterparts in terms of user engagement metrics such as likes, comments, transmissions, and collections on the DouYin and Kuaishou platforms. Thus, the degree of originality significantly influences user engagement. Consequently, no matter how copied short videos are, they cannot surpass the usage of original videos. These findings hold considerable significance in terms of safeguarding the rights of original short videos and implementing measures against video plagiarism.

4.2. Time Factors and Originality of Teaching Game Short Videos

The data analysis reveals that there is no substantial difference in the duration of original videos compared to copied videos, and it does not affect user engagement. Therefore, other factors related to short videos do not significantly affect their originality and user engagement. Previous research by Yang Benwang on the communication status of original short videos [7], Yang Benwang on the current state and development of game short videos [1], and Tu Xiaofei on factors influencing infringement phenomena have laid the foundation for macro-level research. In this study [10], specific data analysis was conducted to discern the differences in user engagement between original and plagiarized game short videos in micro-level research.

4.3. Theoretical Significance

This study contributes to a deep understanding of user behavior and participation by highlighting the impact of originality on users’ usage of short videos for teaching games. This understanding serves as a basis for further research on user preferences and behavior regarding original content. Additionally, the study sheds light on the relationship between the degree of originality and time factors in short videos of teaching games, providing fresh insights into the sustainability and influence of original content created by video content creators across different periods.

4.4. Practical Value

The study's findings, which demonstrate the superiority of original teaching game short videos in terms of user engagement, have practical implications for content creators and platform operators. Encouraging and supporting the creation and dissemination of original content is crucial for enhancing user participation and usage of teaching game short videos. Furthermore, the study offers practical guidance for developing rights protection methods for original short videos and implementing measures to curb video plagiarism, thus contributing to the protection of original content.

4.5. Limitations

The study acknowledges several limitations:

Firstly, the sample collection was relatively narrow, with only a few typical teaching game videos selected as samples from representative platforms due to limited resources. Therefore, the experimental results may exhibit some bias.

Secondly, the dependent variables were limited to basic user engagement indicators such as likes, comments, retweets, and favorites. Other factors, including page views, playback views, and completion rates, also influence video performance. Consequently, the study primarily focuses on the impact of originality on basic user engagement metrics.

Lastly, the study did not extensively explore additional factors, only comparing the duration of original and copied videos. As a result, the comprehensiveness of the conclusions is limited.

In conclusion, this study holds substantial theoretical significance and practical value, providing insights into user behavior, and content creation, and offering practical guidance for the development and management of related industries. However, the study acknowledges its limitations and encourages future research to consider a broader range of factors influencing teaching game short videos.

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