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The Influence of Short Video News on College Students' Emotional Interaction—— A Comparative Experiment Based on Gender Differences

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Abstract: *The purpose of this study is to explore the interaction of college students' emotional states when they receive short video news pieces with different emotions. At the same time, it analyzes whether there will be differences in modality changes and obviousness of the topic between different genders. This study used a controlled experiment with a stratified sampling method to select 118 students from Hunan University of Science and Technology. The results show that when college students are exposed to news topics with positive or negative attributes, their original emotional state will affect their subsequent emotional response. This pattern of interaction reflects the psychological theory of excitation transfer. In addition, the positive framing of short video news has a significant impact on positive audience sentiment and increased trust in the media. Female representatives had more significant emotional interactions. However, the prominence of news topics is not directly related to the emotional changes of college students.*

Keywords: *Short Video News; Emotional Turn; College Student; Communication Effect*

1. Introduction

In recent years, new media technologies have enriched people's emotional experiences [1]. Especially with the advent of the vertical screen era, the news emotional narrative phenomenon is more and more prominent. Some researchers have started to pay attention to the influence of news emotional turn on the audience [2]. With the development of cognitive psychology, communication studies have shifted from media effects to audience cognitive effects, including audience's thinking, motivation, emotion, and behavior. Among them, some scholars like to use schema theory to analyze the individual differences in audience interpretation information. Fiske and Taylor (1991) discovered that the basic model is the cognitive structure in the human brain, which can help the audience construct the truth intuitively [3]. Under the influence of schema, the basic model structure and organization will make the audience have different information processing methods. These complex factors are related to people's emotional patterns. Therefore, research on the role of emotion in information processing can help us better understand the cognitive psychology of the audience, so as to make up for the deficiency of schema theory.

This study defines emotion as the most common concept, which generally refers to a state of feeling, mood, emotion, etc. [4]. Sensation mainly refers to a milder subjective reflection, such as attractiveness, like or dislike mental state; In psychology, sensation refers to the objective reflection of the human brain directly acting on organs and is the basis of complex cognitive activities such as perception, memory, and thinking. Mood refers to an emotional state that can widely affect cognition and behavior, and the emotional state will be affected by the external environment. Emotion refers to people engaged in some activities, such as happiness, anger, sadness, and other complex psychological states. It can understand the audience's intuitive feelings through vivid pictures. The purpose of this study is not to compare emotional nouns, so the definition of emotion refers to the mixture of feeling, mood, and emotion.

Emotion and schema information processing are indeed inseparable. Crockett (1988) pointed out that a person's emotional orientation will not only affect the activation of topic categories but also interfere with the effective use of more complex topics [5]. Iyengar et al (1987) found that emotional tendencies can affect individuals' cognition of important news topics [6]. However, a series of empirical studies on symbolic politics show that human response to political events is more or less affected by emotional cognition. Bakker and Schumache (1986) concluded that the essence of emotional decision-making is

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the key embodiment of political success [7]. Especially in the presidential election campaign [8], the participation of voters in the presidential candidate voting was related to person-associated news, which has been affected by the quality of news style (Gerstlé J & Nai A, 2019).

It is undeniable that emotion plays a very important role in our daily thinking and behavior. In recent years, many research objects related to emotion have become very diverse. Isen, A.M (1984) notes that most emotion theories focus on the influence of emotional intensity or dimension on cognitive process[9]. Regarding the preconditions of emotional response and the interaction between different emotional states, psychology and communication are still relatively lacking in this field. Because the mass media can lead to a variety of emotional reactions and interactions between the audience, the study of the audience's emotional growth and changes in the acceptance of information will help the academic community to understand the audience's different behavior cognition.

The results of many studies show that different genders have different emotional responses to the same emotional stimuli [10]. At the same time, different news topics will also stimulate the audience's attitude assessment, which will affect their subsequent cognitive activities (watt, Mazza and Snyder, 1993). However, most of the literature discussing the differences in emotional reactions between men and women comes from the field of cognitive psychology, and mainly focuses on interpersonal relationships. The current research papers on emotional response are inseparable from the discussion of gender differences. Therefore, this study takes the new short video as the research object, analyzes the emotional changes of college students when accepting this media information, and discusses whether there is a correlation between gender differences and the visibility of news topics.

2. Conceptualization of Emotional Interaction

2.1. Excitation transfer theory

Excitement transmission theory, also known as stimulus reinforcement theory, refers to the emotion generated by event A that stimulates the emotion of event B, including positive or negative emotion transmission. The excitation transfer theory was first proposed by Zillmann (1983). This theory is used to explain why the emotional response of the audience to the event will affect the subsequent emotional response [11]. For example, due to emotional arousal events, individuals will continue to maintain psychological arousal. If another event occurs at this time, the individual will be wrongly attributed to the second event, and his emotional response will surge again.

As shown in Figure 1, the process of excitation migration can be divided into three stages [12]. In the first stage, after an emotional arousal event occurs, the activation of sympathetic nerve begins to increase; In the second stage, if the second event occurs adjacent before the original activation completely disappears, but the real reason is unclear, the residual cognition generated by the first event increases the new cognition of the second event; In the third stage, the level of emotional arousal will reach the highest level in history, and over time, the residual and effect of stimulation will slowly disappear.

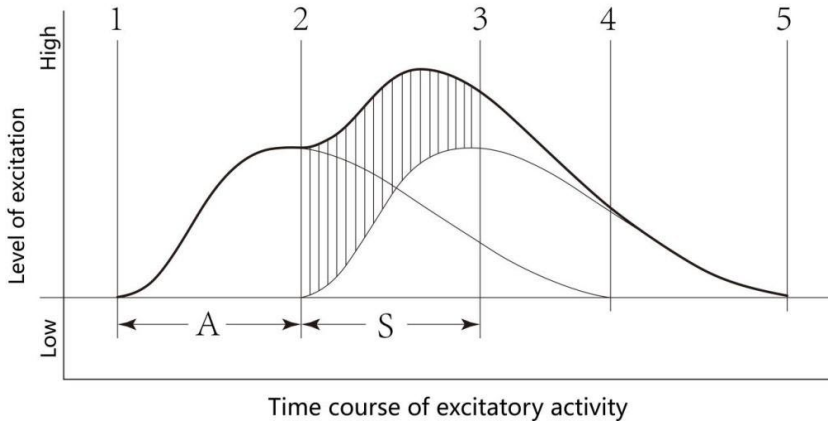

Figure 1: Summation effect of stimulus residues between adjacent regions

Many scholars' surveys have also confirmed the excitation transfer theory. For example, La Torrey (1973) confirmed that people watching violent movies tend to have hostile ideological tendencies, which is due to the stimulation of the brain on violent memory, leading to an increase in real sudden acts of violence [13]. By controlling the experimental method, Zilman (2008) asked the subjects to watch the

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news of the tribal massacre first, and then let them watch the news of the spread of avian influenza. The results show that previous reports of tribal massacres have raised concerns about the risk of influenza. It is easy to generate extreme speculation about the "end of the world" and eventually attribute all the stimulation to the second event [14].

2.2. Opponent process theory

Another important theory in this study is the theory of the opposite process. The theory of the opposite process was first proposed by Solomon (1974), which attempts to explain a phenomenon of hedonistic contrast. That is to say, people's initial emotional response to events usually triggers the state of the opposite dimension, making our emotions return to neutral [15]. In other words, when an individual is exposed to specific information, the initial emotional response will lead to the peak of emotional stimulation. When the stimulation stops, the emotional response will move in the opposite direction and eliminate the influence of the initial emotional response. It should be pointed out that this theoretical hypothesis is based on the control function of many emotions in the human brain. For example, whether the initial pattern is positive or negative, the immune system will resist any phenomenon of emotional neutrality or emotional balance.

The theory of the opponent process has three characteristics: (1) Affective contrast; (2) Affective habituation; (3) Withdrawal syndrome. Some researchers have confirmed the opposite effect of emotion. For example, Piliavin et al (1982) conducted an emotional survey of 146 blood donors and found that some had a tendency to donate blood. Although they were anxious and uncomfortable before donation, they were satisfied after donation [16]. As shown in Figure 2, the human emotional response can be explained by the following two steps (Mauro, 1992): First, A-process refers to the initial emotional state; compared with process A, process B aims to reduce the emotional impact of process A. Second, process B is the result of process A activation. The emotional intensity of process B is later than the peak and decline of process A [17].

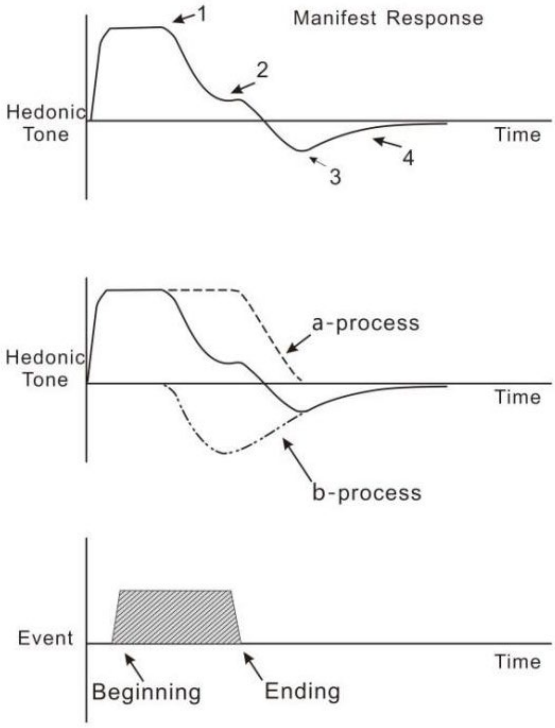

Figure 2: Opponent-process mechanisms of emotions

Although the two theories explain the process of emotional interaction, they have different hypotheses about the change of modality. According to the opposition process theory, the original emotional response of the audience will trigger the opposite dimension modality. Therefore, if there are two kinds of emotional reactions in the same direction, the intensity of the second emotional reaction will be weakened. On the contrary, the excitement transmission theory believes that when the audience interprets the same information as the original emotional dimension, its cumulative effect will enhance the emotional response.

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2.3. The relationship between emotion and gender

Generally speaking, although the results of these studies are inconsistent, there are also some similarities. Brusky and Raymond (1990) pointed out that female emotional intensity and expression are more prominent than male [18]. Actually, female are more sensitive and have more facial expressions than male (Mackie,1980) [19]. Gilbert (1969) revealed that female are also more willing to admit and discuss their emotional state than male [20]. Therefore, female are more likely than male to feel negative feelings of self-accusation, such as shame, guilt, sadness, fear, and anxiety; Aguiler and Barrios (2016) argued that men were more likely to produce negative emotions such as anger and contempt in the external environment than women [21].

Hatified and Rapson (1994) found that people with strong positive emotions tend to have strong negative emotions, but the emotional intensity of men and women decreases with age, especially men [22]. Shields (1991) pointed out that emotional sociology and cognitive development theory emphasized the importance of social context to emotional development, indicating that gender differences in emotional change are related to the social environment. This also illustrates that emotional expression may be acquired in sexual behavior [23]. Secondly, different measurement methods will lead to different results. When the emotional measurement is direct, open, and transparent, women are more emotional than men, while indirect measurement does not find gender differences. Therefore, LaFranz and Banaji (1992) suggested that direct measurement was easier to measure gender differences in emotion [24]. In addition, when emotional subjects belong to general subjects, there are significant gender differences in the test results. However, if a specific adjective is used to measure emotional response, there is no significant gender difference.

In short, males and females are different in emotional feelings and expression levels [25]. In terms of positive emotions, females are more likely to be affected by emotions than males. In terms of negative emotions, females are more likely to feel self-accusation, [26] such as shame, guilt, sadness, etc. (Weber & Herr, 2019). However, the reaction to directly measuring emotions is particularly obvious. It is not difficult to find that previous studies mostly focused on measuring the effect of a single emotional experience. There is no relevant research that shows gender differences will lead to the interaction of different emotional experiences. Therefore, this study will explore the interaction between gender differences in college students.

3. Research Questions and Hypotheses

3.1. Research questions

To fill this literature gap, this study aims to understand the influence of mobile short videos on the formation of college students' values, so as to expand the theoretical framework of the impact of new media. At the same time, exploring and clarifying the propagation law of mobile short video platforms is conducive to the cultivation of college students' values. Specifically, the following research issues will be addressed: the first question is whether the emotional response of college students will change due to the different order of information presentation. Second, when college students read short-term news with different emotional tendencies, their emotional interaction is the opposite process of the process of excitement transmission.

3.2. Hypotheses

From the above previous findings and reasoning [27], the following hypotheses have been formulated:

H1a: The audience's reaction in the same direction will produce a superposition effect, which will increase the emotional response intensity of the latter's short video news. This shows that the excitation transfer theory has been verified.

H1b: The audience's reaction in the same direction will produce a neutral effect, which will weaken the emotional response intensity of the latter's short video news. This shows that the opponent process theory has been verified.

H2: Compared with males, females will perceive a greater impact of news emotional tendencies on themselves.

H3: The higher the meaning of a news topic, the stronger the audience's emotional response.

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H4: Under the control of prominence state, females are more likely to be affected by emotional interactions of short-video news topics than males.

H5: Under the control of emotional interaction, females are more likely to be affected by prominence state short video news topics than males.

H6: Under the control of gender differences, the more prominent the topic of short video news, the stronger the emotional interaction of the audience.

H7: Three factors interact with the audience's emotion, gender, and the meaning of the news issues.

4. Methods

4.1. Research design

In the beginning, short video news will be classified according to themes, such as conflict, sadness, positive, and emotional tendencies. This study selects short video news information that can cause positive or negative mood fluctuations in the audience as a combination to test the subsequent emotional evaluation. Firstly, college students are divided into different modality groups by modality control, allowing them to watch a group of short-sighted news that may cause emotional fluctuations. Then, letting college students watch different topics of short video news. Finally, we can infer emotional interaction from their total modal score.

This research adopts an experimental method. The independent variables include modality (positive: negative), gender (male: female), and news topics (high prominence: low prominence). The purpose is to explore the relationship among the three variables. The distribution of research objects was shown in Table 1: Positive modality/male (high prominence topic N=14; low prominence topic N=13); Negative modality/male (high prominence topic N=14; low prominence topic N=15). Positive modality/female (high prominence topic N=17; low prominence topic N=15). Negative modality/female (high-profile topic n=16; low visibility theme N=14).

Table 1: Experimental design distribution group

	Positive modality		Negative modality	
	Group A		Group B	
Prominence	Height	Low	Height	Low
Male	n=14	n=13	n=14	n=15
Female	n=17	n=15	n=16	n=14

4.2. Sample

This study was conducted in the Liyan Building of Hunan University of Science and Technology in October 2021. Using the stratified sampling method, 118 undergraduate and graduate students from Hunan University of science and technology were selected, including 56 males and 62 females. In order to reduce the influence of environment, time, and other factors on the experimental process, researchers concentrated college students in the same environment for experiments.118 college students were randomly divided into two groups. Before participating in the formal experiment, they were told that the data of the experiment were only used for academic research and would not involve personal privacy issues.

4.3. Independent variable

4.3.1. Modality

At present, most scholars have done more research on emotion measurement, the measurement methods mainly include subjective measurement and objective measurement. Subjective measurement is mainly self-report method, which measures learners' subjective emotional experience through scales. People emotional reactions can be measured by Mood Adjective Check List (MACL) or Positive and Negative Affect Schedule (PANAS). The scale is widely used in psychology to measure people's emotions [28], so this study will continue to use this scale for measurement. After the independent sample prediction test, the experimental emotion scale consists of 10 adjectives representing positive and negative emotions. In order to avoid the order effect, these positive adjectives or negative adjectives were

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mixed and arranged. The response scores of participants to positive and negative emotional tendencies were collected through different emotional indicators.

After reading the short video news, the subjects circled a five-point scale and chose the appropriate code for their current mode. From absolutely not feeling to absolutely feeling (1 ~ 5 degrees). The 10 adjectives of positive emotions on the scale include amused, at ease, calm, cheerful, content, delighted, happy, pleased, relaxed, and satisfied; The 10 adjectives of negative emotions include angry, ashamed, bored, depressed, embarrassed, fearful, gloomy, miserable, sad, and worried. In the formal experiment, in order to better distinguish the difference between positive and negative emotion index scores, the above five-point scale was expanded to an 8-point scale, from 1= [no feeling] to 8 = [strong feeling]. In order to compare with the above scale, after completing the test modality scale, college students will immediately ask the subjects' overall feelings after reading the news: how do you feel after watching different short video news?

4.3.2. News agenda

This experiment mainly selects news topics with strong conflict and high agenda prominence. This article defines the meaning of topic as "have you heard of short video news related to such topics?". Combine the two questions in the questionnaire to calculate the score. The higher the score, the higher the importance of the topic. The high or low prominence topics used in formal experiments are composed of several pre-tested themes.

4.4. Dependent variable

The main dependent variable of this study is modality assessment. Concretely speaking, after reading news with high or low agenda prominence, the subjects should immediately evaluate their emotional state. In order to compare with the modality before reading short video news, the scale used to measure this variable is the same as the above emotional control scale. The scale consists of 10 adjectives representing positive emotions and 10 adjectives representing negative emotions. In the scale, subtract the total score of positive emotions from the total score of negative emotions, and finally, try to build a positive emotion score. The higher the score of the tester, the more positive their modal evaluation after reading the news. Similarly, this study will also ask the subjects' overall feelings one by one to ensure the reliability of the measurement of dependent variables.

4.5. Analysis plans

4.5.1. Modal control of news presentation

The news of the positive or negative modality group selected in this study came from the Tiktok platform. The selected positive modality news mainly focuses on interesting and inspiring stories, while the negative modality news emphasizes the description of human tragedy. The selected positive modal news mainly focuses on interesting and inspiring stories, while the negative modal news emphasizes the description of human tragedy. After pre-test measurement, these two emotional tendencies are reasonable.

A total of 22 independent subjects participated in this pre-test. According to the pre-test results, a total of three forward modal control news items are selected as follows: The first news is that *17 year collection video! Gu Ailing's graduation performance as a child is so cute* (Positive emotion index M=3.56; Negative emotion index M=0.77; t[14]=6.42, p<.01); The second news is that *15 college students of Changjiang University bravely rescued 2 drowning children*(positive emotion index M=3.33; negative emotion index M=1.82; t[13]=4.30, P<.01); The third news is that *Let's listen to the aspirations of the central enterprises' AIDS and epidemic prevention builders in Hong Kong!*(positive emotion index m=3.89; negative emotion index M=1.06; t[15]=3.79, P<.01); In addition, this study also selects two types of negative modality news: One is that *a high school sophomore in Henan was seriously injured in a collective fight* (positive emotion index M=0.52; negative emotion index M=3.99; t[14]=-6.49, P<.001); The other is that *graduate student jumped from a building and committed suicide after failing the civil service examination* (positive emotion index M=0.03; negative emotion index M=4.88; t[15]=-5.21, P<.01).

4.5.2. Control the news with high and low prominence

This study adopts the method of comparative experiment and selects the short-sighted news with positive and negative modalities from Tiktok 2021 - 2022. The length of the news is about 1 minute. Pretest: The news of low prominence issue is that all students of Hunan University of science and

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technology need to punch in the educational administration system every day. If college students fail to punch in three times, the comprehensive evaluation score of the scholarship will be deducted. The low prominence new that Hunan University of science and technology will strictly implement the "campus access management regulations", and students need to explain the reasons to the school leaders when leaving the school.

The pre-test results showed that the subjects did not express strong support or opposition to these two issues, indicating that the research results did not reach a significant level. (on the 10 point scale from -5 = "strongly opposed" to + 5 = "strongly agreed", the daily health clock issue M= -2.23; the campus entry-exit ban issue M = -2.39; t[16]=.38). In addition, the pre-test results also show that the new of campus access control management issues is significantly higher than that of Daily health records, indicating that college students pay more attention to campus access control management than Daily health records. (On the three-point scale of 0-2, campus access control management issues M =.72; Daily health records topic M =.39; t = −7.69, p< 001)

4.6. Experimental procedures

This study adopted a small group of no more than 25 people as the measurement model, and the experiment was officially launched in October 2021. Before the beginning of the experiment, the moderator will notify the subjects, which is an academic research survey on college students watching short video news reports. First of all, each college student will get a questionnaire containing three parts. Secondly, after the moderator introduced the content of the questionnaire, the participants would let college students watch short video news with different emotional tendencies. Third, the subjects will quickly circle the adjectives suitable for describing their current situation on the questionnaire and fill in the first and second parts of the problem. The third part of the questionnaire is about the demographic variables of personal interests, experiences, and views.

5. Data analysis

5.1. Emotional control test

In order to test whether the news of modality control effectively triggers the subjects' positive or negative emotions, this study first makes a principal component analysis of 20 positive and negative adjectives on the questionnaire (MACL) to select adjectives with common factors on this scale. In addition, the positive emotion index, negative emotion index, and positive emotion score were further constructed.

This study found that all 20 adjectives in the Emotional Adjective Test (MACL) had a high factor load, and positive or negative emotional tendencies were more obvious. The load of the 10 adjectives representing positive emotions on the first factor are as follows: calm(.76), cheerful(.93), happy(.91), amused(.87), delighted(.86), joyful(.84), pleased(.84), content(.83), relaxed(.68), satisfied(.77). In addition, item analysis showed that all positive emotional adjectives (a = 0.97) and negative emotional adjectives had high reliability (a = 0.92). Therefore, all 10 positive emotional adjectives score plus the positive emotional index as the basis for the average. Similarly, the negative emotion index is composed of the average total score of all negative adjectives.

This study compared the positive and negative emotion indicators of two different modality groups. It can be seen from Table 2 that the score of the positive emotion index was significantly higher than that of the negative emotion group (positive modality M=5.51; negative modality M=1.73; t[59]=23.60, p<.001); Correspondingly, the negative emotion index score of negative modality group was significantly higher than that of positive modality group (negative modality M=5.31; positive modality M= 1.61; t [59]=-21.40, p<.001).

The purpose of this study is to measure the response of college students after reading two different modality control groups. The measurement method is the total score obtained by subtracting the positive emotion score from the negative emotion score. Research has shown that compared with the negative emotion group, the positive emotion group showed more positive emotions (positive modality M=32.65; negative modality M= -31.09; t [59]=27.45, p<.001). Similarly, positive modality subjects have more positive psychological cues than negative modality subjects (positive modality M=6.51; negative modality M= 3.48; t [59]=17.30, p<.001). Table 2 illustrates that the modal control news experiment in this study successfully triggered the modal fluctuation response of college students.

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Table 2: Experimental data of modality control test

	Positive modality group	Negative modality group	t	P
Total	(n=59)	(n=59)		
Positive sentiment index	5.51	1.73	23.60	.001
Negative sentiment index	1.61	5.31	-21.40	.001
Emotional score@	32.65	-31.09	27.45	.001
Overall feeling@@	6.51	3.48	17.30	.001

Note: The average score on the scale ranged from **1** = [Not feeling at all] to **8** = [Feeling very strong]
@: The average score represents the total emotion score of positive emotion score minus negative emotion score
@@: The mean score on the eight-point scale ranges from **1**= [Very bad] to **8** = [Very good]

5.2. Prominence of agenda

For example, the pre-test results show that the Prominence of the agenda of campus access control is higher than topics of daily health clocking (on the three-point scale of 0~2, News on daily self check health clock M=.49; the News on campus access control management M=1.53; t[31] =8.5, P<.001). We can see from the data, the news topics that college students care about the News on campus access control management are significantly higher than News on daily self checks health clock. This also shows that this study was successful in controlling the meaning of short video news topics.

5.3. Analysis of the dependent variable

The dependent variable of this study is the modality evaluation score of college students after watching high-meaning and low-meaning news topics. The main analysis method is the analysis of variance (ANOVA), which discusses the main influence of three independent variables (modality, gender, and news issues) on the causal variables of modality evaluation, as well as the interaction of three independent variables on modality evaluation. This study tested the variance of positive emotion scores of three independent variables, and then analyzed the role of the same independent variable in the overall emotional evaluation of subjects.

Table 3: The results of the positive emotion score

Source of variation	df	Mean	F	P
Main effects	3	2041.35	2.74	.050
Modality	1	2079	2.54	.10
Gender	1	3923.1	4.72	.023
Issues	1	336.14	.39	.523
2-way interaction	3	81.3	.085	.848
Modality - Gender	1	110.09	.128	.721
Modality - Issues	1	129.73	.165	.59
Gender - Issues	1	4.78	.007	.891
3-way interaction	1	10.98	.121	.816
Interpretation variation	7	915.57	1.129	.414
Residual variation	198	779.25		

Note: N = 59. p < .001. *p <.05, **p < .01, ***p < .001

It can be seen from the data that the average score of subjects' positive emotions is -8.65, ranging from extremely negative (-20) to extremely positive (+20). Research shows that college students' emotional reactions after reading the second part of the news are mostly negative. Otherwise, Table 3 of the variance results shows that the main impact of gender differences reaches a significant local level [f (1,36) =4.72, p<0.05]. This means that women's average score for positive emotions (m=-12.60) is lower than that of men (m=-5.96). The main influence of modality is close to the significant level [f (136) =2.54, p=.10], which means that after reading the second part of the theme news, the subjects in the positive modality group behave more negatively than those in the negative modality group (positive modality m=-13.22; negative modality m=-7.12). Although the average score of positive emotion (M= -11.30) of subjects who read low significance (News about Daily self-health card) is lower than that of subjects who read high significance (News about access restrictions on campus) M= -9.11).But its single variation analysis did not produce significant effect [f (1,36) =.427, p=.50]. In addition, the second-order interaction of two variables and the third-order interaction of three independent variables are not significant.

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As shown in Table 4, the study also analyzed the variance of the three independent variables in the overall emotional assessment. The average overall emotional score of the subjects was 4.21 (from 1= "very poor" to 8= "very good"), indicating that after reading the news topic in the second part, the emotional response was slightly negative. The results of ANOVA showed that the main effect of gender differences reached a significant level [f (1,37) =3.59, p=.051], which also showed the average score of women's overall emotion (M=4.14) was slightly lower than men (M=4.55).

In addition, the main effect of modality reached a significant effect [f (1,37) =10.47, P < 001], indicating that after reading the second part of the topic news, the subjects in the positive modality group felt more unhappy than the subjects in the negative modality group (positive modality m=4.11; negative modality m=4.26). The subjects with low reading significance (News about Daily self-health card, M=4.45) had a lower average score of positive emotions than those with high reading significance (News about access restrictions on campus, M=4.48). However, the main effect of ANOVA did not reach a significant level. In addition, in terms of modality, gender, and problem importance variables, the two-way interaction of any two variables of modality, gender, and topic importance, as well as the three-way interaction with these three independent variables, have not reached a significant level.

Table 4: The variance coefficient of total emotional score

Source of variation	df	Mean	F	P
Main effects	3	7.66	4.62	.004
Modality	1	20.19	10.47	.001
Gender	1	7.14	3.59	.051
Issues	1	.085	.053	.754
2-way interaction	3	1.10	.43	.620
Modality - Gender	1	1.34	.69	.287
Modality - Issues	1	1.25	.67	.401
Gender - Issues	1	.51	.46	.559
3-way interaction	1	.374	.25	.733
Interpretation variation	7	3.351	2.204	.021
Residual variation	198	1.767		

Note: N = 118. p < .001. *p < .05, **p < .01, ***p < .001

6. Conclusions and discussions

This study focuses on the cognitive level of the audience in interpreting short-video news, as well as the differences in emotional interaction, gender, and topic significance when college students receive news information, in order to make up for the shortcomings of traditional research based on the basic model of audience psychological response. This study found that the audience's original emotional response will affect the emotional response to the follow-up news, which varies with gender.

The first hypothesis of this study is to test whether the modal interaction is an excitation transfer process or an opponent process. According to the theory of excitation transmission, emotional responses of the same dimension will produce a summation effect, thereby enhancing the intensity of the second emotional response. Specifically, students are first assigned to negative modality groups. When they read the negative topic news again, due to the emotional summation effect, the emotional intensity of the follow-up test will be higher than that of the students first assigned to the positive modality group. On the contrary, the opposite process theory holds that people's emotional fluctuations will produce neutral effects of emotional contrast and emotional return. If there are two emotional responses with the same dimension, the intensity of the second emotional response will weaken [29]. According to this theory, when the participants assigned to the negative modality group were once again exposed to the news that brought about negative problems, due to the weakening of emotional intensity and the effect of emotional regression neutrality, the emotional assessment intensity of the latter test would be lower than that of the reporter assigned to the positive modality group.

According to the results of this study, we can know that the emotional interaction of college students' short video news proves the existence of the excitement transmission theory.

Why the emotional interaction of college students is discussed is the presentation of excitation transfer theory, which can be understood from two aspects. Firstly, the topic of short video news selected in this study is closely related to college students, it has a high degree of self-correlation with the audience. Therefore, the emotional tendency of short video news has greatly affected their evaluation of society

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and events, making the audience have strong emotional empathy. Secondly, the values of college students have not yet been formed. Their cognitive mechanism of things is often reversed and unstable, so they tend to be vulnerable to external interference. However, this further confirms the scholars' research on excitation transfer theory, including Patrick and Juliana's discovery that violent films may increase the reasons for social instability [30]; Mathes found that porn or aversion to stimulation can accelerate people's aggression [31].

In this study, the role of the opponent process theory is not obvious, which may be caused by three reasons. First of all, previous studies on the process of opponent theory have mostly focused on the study of aggressive behavior caused by strong human emotions (Zillmann & Iii, 2007), such as anger, fear, sadness, and other movie content [32]. However, the short video news clips selected in this study are objective and neutral, without strong personal emotional color. Obviously, the news content has different degrees of stimulation. Secondly, in attitude persuasion theory (Budziszewska, M., & Hansen, K,2020), the social judgment theory of contrast effect or adaptation level principles often requires training to play the negative effect of modality [33]. However, due to the different media literacy of the audience, most of the college students drawn from the experiment can not explain the phenomenon of the change in the audience's attitude. Thirdly, college students have no major emotional arousal in a specific situation, which can not be well maintained in the next situation, so it is difficult to produce mutually offsetting emotional reactions.

Hypothesis 2 was supported in this study. This study has shown female college students' emotional response and expression intensity are higher than male college students. No matter in interpreting short video news or exchanging information, women feel that the emotional tendency of news is more obvious than men. This result is roughly the same as previous studies on emotion and gender differences. In the evaluation of the positive emotion score, gender differences reached a significant level ($p<.05$); however, in the overall emotional evaluation, gender differences also tend to be obvious ($p<.051$).

Hypothesis 3 was not supported in this study. That is to say, the significance of news topics has not caused different emotional responses in college students. In the research literature on topic setting or topic construction theory, most of them believe that high and low significance topics will have different effects on the topic setting, but in this study, it is not found that topic significance will lead to different emotional reactions. This may be because the subject setting of the questionnaire is mainly attitude evaluation (Yaden & Eichstaedt, 2008), but attitude evaluation is related to the individual's own cognitive system [34]. The findings of this study support the scholar Zajonc's statement that emotion and the cognitive system are separated [35], That is to say, cognitive process and emotional process are carried out in different ways. Compared with cognitive processes, emotional processing was usually at a more basic level. For example, emotional reaction is more basic, inevitable, self-correlation, and difficult to express in spoken language.

Hypothesis four to hypothesis seven, namely modal gender, problem gender, second-order interaction of modal problems, and third-order interaction of modal gender problems, have not been confirmed in the experiment. This may be because the initial emotional reactions are different, and the subsequent emotional interaction also produces parallel changes, so the effect of emotional interaction is not obvious.

In terms of different emotion measurement methods, psychologists have previously studied overall emotion and personal emotion. The results show that the gender difference in overall emotion is more significant than that of an individual single emotion. This study also confirms the previous research results. From the results of emotional interaction, the effect of emotional interaction and the overall emotional measurement method ($p<0.001$) were significantly higher than those with positive emotional scores ($p=0.10$). However, the gender difference in positive emotion score ($p<0.05$) was higher than the overall emotion score ($p=0.051$).

7. Limitations and Recommendations

The sample selected in this study is college students from Hunan University of science and technology, which is not widely representative. Therefore, the results of this study cannot be simply extrapolated to most. Secondly, education level and personal culture lead to different reactions of college students, which can not be ignored. For example, students with media literacy education may have higher emotional reactions and expressiveness than those without professional media literacy training [36]. Generally speaking, follow-up researchers can choose a wider range of research objects and conduct investigations under natural situations to increase the validity of the study.

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The study found that the diversification of news presentations can also make college students have different emotional responses to topics. In addition, in the process of watching short video news, the audience actually received a series of different messages. Therefore, we cannot simply attribute the audience's cognitive behavior to the difference in schema structure. Due to the short research time, this study is only the preliminary experimental results. Future researchers can still observe for a longer time and test the relationship between audience emotional response and flow experience.

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