Utilizing WeChat to Shape Youth Perspectives: A Content Analysis of University Communication Strategies During the COVID-19 Pandemic

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Abstract: During the COVID-19 pandemic, social media, particularly WeChat Official Accounts, served as important platforms for Chinese universities to share health information, offer insights, and encourage collective actions. This study, grounded in the Elaboration Likelihood Model (ELM), utilized content analysis and regression analysis to examine 996 tweets published on WeChat from major universities. It focused on ideological and political communication, aiming to understand the influence of various factors on university students' media engagement, which was quantified by metrics like "numbers of times read" (NTR) and "wow" of tweets posted on the WeChat Official Accounts. The findings revealed notable differences in media engagement correlating with the content themes of the tweets. Specific factors, such as content originality and vividness, were observed to significantly influence "wow", primarily through the ELM's central pathway. Conversely, the length and tone of tweets' titles appeared to impact NTR through the peripheral pathway. Additionally, the timing of tweet publication was found to have a significant effect on overall engagement. The findings showed that for enhanced engagement, universities could benefit from focusing on consistent content theme and emotional appeal. Consequently, emphasizing content originality, adopting innovative presentation methods, and fostering a community-centric approach to information dissemination could potentially create a more effective and resonant communication environment which could lead the thoughts of youth.

Keywords: COVID-19, University, WeChat Official Accounts, Elaboration Likelihood Model, Engagement, Thought Leadership

1. Introduction

The COVID-19 pandemic is a significant public health crisis in recent Chinese history, marked by its swift spread, widespread infection, and intricate prevention challenges [1]. Expeditious and decisive actions taken by various governments and organizations afforded not only China but also the global community valuable time to combat the virus. During this crisis, there was a collective effort to enhance citizens' health literacy and generate a shift in ideology. This time showcased inspiring stories across sectors, embodying values such as societal responsibility, national pride, reverence for life, and the strength of shared beliefs.

For the first time in history, the COVID-19 pandemic saw social media and digital technologies emerge as primary conduits for influencing health behaviors and sustaining societal ties [2]. Amid this significant public health crisis, platforms like WeChat became crucial for disseminating information, shaping public perceptions, and interpreting the unfolding situation [3-5]. The impact of such mediated communication is immense, as it guides behavioral responses and determines policy implementation effectiveness. As a result, this form of communication is vital in mitigating

uncertainties and bolstering communal spirit.

Often termed "digital natives", modern college students represent some of the most adaptive social groups. Yet, the COVID-19 pandemic has disrupted their academic and personal lives, potentially altering their cognitive and behavioral paths. The challenge extends beyond ensuring their protective behaviors--it is also about nurturing their core values. However, existing research often falls short due to limited theoretical exploration, reliance on monotonous research methods, and numerous superficial studies. As the pandemic shifts the daily activities and communication patterns of the youth, there is an urgent need to investigate the effective thought leadership strategies employed by digital media.

2. Literature Review

2.1. Social Media Practices About Thought Leadership

With the advent of technology, thought leadership largely shift from face-to-face interaction to a virtual framework. Instead of tangible and direct encounters, today's interactions have transformed into "screen-to-screen" dynamics within the digital realm. This transition has deeply impacted both the medium and the substance of thought leadership. While the virtual realms crafted by emerging media provide fresh opportunities for incorporating and conveying ideological and political education, a prevailing challenge remains: Scholars are now zeroing in on aligning content forms with leadership objectives.

Current thought leadership research, grounded in social media, primarily follows two paths. The first approach explores the evolving medium's potential and value from the audience's standpoint. Recognizing social media as pivotal platforms for youth engagement and expression, this trajectory looks at how these platforms harness the youth's perspectives, influence public sentiments, and in turn, reshape the "social ecology" of collegiate environments [6]. Their inherent participatory nature has catapulted them to a burgeoning research focus for thought leadership. The second approach emphasizes the roles of primary institutions, such as universities and the Communist Youth League, in their online and new media leadership initiatives. The crux of this investigation is the novel presentation of traditional ideological tenets through new media. It zeroes in on diverse strategies that entail showcasing exemplary figures, educating on pertinent issues, guiding public discourse, producing cultural content, and driving mobilization efforts [7-9].

Since the outbreak, research has emphasized China's resilient spirit and intertwined with ideological and political education during the COVID-19 pandemic. Universities, utilizing new media, have gone beyond simply relaying crucial pandemic updates. They have shed light on real-time pandemic prevention measures and the ongoing state of education during this crisis, enhancing the relevance and empathy of ideological and political education. Yet, navigating the complex online public opinion landscape--marked by challenges like infodemic and verbal aggression [10-12]--remains critical. While many studies which concentrate largely on colleges' online political methodology and discourse have delved into social media's role in ideological and political pursuits, a significant research gap persists: The subjective roles and active engagements of the youth in such scenarios remain largely unexplored.

2.2. Information Dissemination and Online Engagement

In China's evolution into a mediatized society, the concept of "mediatization" has become instrumental. This term elucidates the intricate interplay between communication, society, and culture, emphasizing the pervasive role of media in societal structures and the daily lives of individuals [13]. Amidst this backdrop, a central challenge in communication research persists: How to craft compelling messages that not only cut through the clutter but also resonate with targeted audiences? To address it, Lasswell's "5W" model for information dissemination stands as a foundational framework, spotlighting the paramount importance of communication efficacy.

Engagement metrics on social media, as indicated by likes, retweets, comments, and other social cues, serve as a barometer for users' emotional, cognitive, and behavioral responses to content [14]. These metrics not only reflect the mental frameworks which drive such behaviors, but also accentuate social media's power to amplify one's social reach and spread information [15, 16]. This ripple effect inevitably influences both online and offline behaviors [17]. Given social media's unique structure, extensive research has explored how elements such as topic, media type, presentation style, and emotional tone influence communication outcomes [18-20]. For instance, a study by Ngai et al. found that during the COVID-19 pandemic, aspects like content, interactivity, and the nature of messages from People's Daily microblogs had a marked impact on public online engagement. Tweets with external links attracted more retweets and comments, whereas narrative-style content saw a surge in retweets [21].

At its essence, thought leadership is fundamentally about communication and forming connections. Thus, understanding how textual content influences the youth is critical for assessing its effectiveness. Currently, there is a marked gap in research on the communication practices and results of ideological and political initiatives. Most studies either focus on broader components like channels, contexts, and content of ideological work or limit information dissemination to just a facet of the overall ideological procedure. Furthermore, there is a noticeable scarcity of quantitative approaches in contemporary research. The internet's complex network of interlinked nodes reveals the intricate interactions between various institutions and today's college students. As a consequence, leveraging and interpreting this extensive data can notably bolster the impact of ideological and political efforts.

2.3. The Elaboration Likelihood Model

The central tenet of information dissemination is persuasion.

In the field of social cognition, persuasion is seen as an effective way to change people's attitudes [22]. As an important theory of persuasion, the Elaboration Likelihood Model (ELM) describes the changes in decision-making, attitudes, or behaviors of recipients as a result of information processing mechanisms, and it is esteemed as one of the foremost models which explain the intrinsic mechanisms driving attitude changes and individual behavioral intentions [23].

The ELM posits two primary pathways for persuasive communication: the central and the peripheral routes, which differ in their depth of cognitive processing [24]. The central route involves deep cognitive engagement, where the strength and quality of arguments are paramount. It requires individuals to evaluate the information critically, leading to robust and lasting attitudes. The peripheral route is characterized by shallow processing, influenced by superficial cues like emotional appeals, message aesthetics, and source credibility. It leans on heuristic reasoning, a quick and instinctive thought process, necessitating limited cognitive effort [25]. When assessing information is deemed taxing or complex, individuals tend to rely on this route for quick judgments [26].

The choice between these routes depends largely on an individual's motivation and capability. Typically, increasing motivation and capability drive the individual towards the central route [27]. However, it is pivotal to recognize that, in practice, both routes often coexist and jointly impact attitude formation or change [28].

The ELM has been employed extensively to assess information dissemination across various domains. For instance, Chen and Peng examined content from official accounts of 25 provincial health commissions during the COVID-19 pandemic, founding that anti-pandemic videos (central route) and social media topic hashtags (peripheral route) significantly enhanced engagement metrics like retweets, thumbs-up, and comments [29]. Similarly, Zhang et al. assessed charity appeals on medical crowdfunding platforms and highlighted that text length (central route) and factors like fundraising dynamics and social endorsements (peripheral routes) had a positive correlation with users' donation volumes [30]. In a related vein, a study by Tang and Chen on official microblog tweets from colleges deduced that while students predominantly processed information via peripheral cues like school reputation and post timings, the central route, defined by the core content, played a diminished role in shaping communication outcomes [31]. These findings have underscored the nuanced applications of the ELM in diverse communication contexts.

Within the sphere of information dissemination, the ELM model serves as a pivotal tool for examining determinants of users' attitudes and behaviors, with a particular emphasis on the quality of information and the credibility of its source [32]. As scholarly perspectives evolve, the ELM has seen a broadening of its operational indices, thereby enhancing its real-world relevance [33]. Contemporary literature reveals a clear bifurcation: Articles on WeChat leverage the peripheral route by offering users initial impressions based on content aesthetics, which in turn largely influences the "numbers of times read" (NTR). In contrast, the central route immerses users into the article's depth, allowing them to engage with its rich content and form individualized judgments, and then predominantly affecting the "wow". Thus, for this study, while the central route is anchored in content theme, the peripheral route is closely tied to presentation and style.

3. Hypotheses and Research Questions

Drawing from the communication dynamics inherent to WeChat Official Accounts, this research constructed a theoretical model to scrutinize the pivotal factors affecting the communication efficacy of thought leadership content. In this model, the central route encompasses dimensions such as the substance of the content, its dissemination approach, vividness, and originality. Conversely, the peripheral route is characterized by the title's presentation style, with the timing and date of publication as key variables. Recognizing that an article's title concisely embodies its primary content and is intrinsically tied to its theme, this research further categorized the content theme as the domain of the peripheral route.

3.1. Content Theme

Multiple research efforts have highlighted the differential impact of content themes on public engagement across social media. Anchored in the Use and Gratifications Approach, media consumers actively engage with content based on the extent to which it satisfies their unique preferences [34]. For instance, Chen found that on TikTok, the content detailing government actions and public health advice fostered increasing retweets, while crisis-oriented news was less favored [35]. Similarly, Chen et al. emphasized the variance in public engagement based on different content, noting that "current affairs" elevated engagement metrics, and "military imagery" appealed likewise [36]. An analysis of 5,976 WeChat tweets by Zhang et al. revealed higher engagement for topics like infectious diseases and vaccines, while subjects like health education saw minimal interaction [37]. Further, Zhang observed that during the pandemic, WeChat accounts of elite university libraries saw pronounced interest in logistical themes, but paid lesser attention to resource recommendations and literacy education [38]. Based on the above discussion, the following hypotheses were proposed:

H1a: There is a significant difference in the NTR for different WeChat tweets' content.

H1b: There is a significant difference in the "wow" for different WeChat tweets' content.

3.2. Narrative

Narrative, characterized by intricate plots, personal tales, and anecdotes, holds a unique power in capturing audience attention compared to non-narrative form that prioritizes logic and factual information [21]. The immersive nature of stories,

as audiences lose themselves in unfolding plots, summons psychological engagement, and fosters empathy and emotional resonance [39]. The power of narrative in persuasion has been extensively explored in research on information communication. Comprehensive meta-analyses revealed that narrative messages can sculpt individuals' beliefs, attitudes, intentions, and actions. Compared with non-narrative information, narrative demonstrates a higher capacity to diminish message resistance, amplifying the persuasive potential [40]. A content analysis of visual communication effectiveness by Romney and Johnson indicated that narrative visuals encouraged greater engagement in terms of thumbs-up, retweets, and comments [41]. Also, Yang and Sun unearthed that the content exuding humanity, practicality, and interest fostered heightened engagement [42]. In the backdrop of global crises such as the COVID-19 pandemic, it becomes imperative for institutions like universities to employ platforms like WeChat to share frontline stories. Such narrative, compared to pure factual expositions, resonates deeper, eliciting collective emotions and values in the youth. Based on the above discussion, the hypothesis was proposed:

H2: There is a significant difference in the "wow" for different narrative expressions in content.

3.3. Content Vividness

Content vividness delineates the extent to which multimedia elements such as images, audio, and videos are employed to amplify sensory (e.g., visual, auditory) perceptions [43]. Intrinsically vivid messages have a unique allure to captivate and retain users' attention, and then stimulate imagination. Empirical evidence suggested these messages possess a singular persuasive charm [44]. Research by Jain et al. indicated that multimedia-rich content promoted sharing behaviors, with a fusion of text and video content registering the highest retweets [45]. Ji et al. further substantiated that vivid content fostered superior engagement and was a positive predictor of likes and shares [46]. By virtue of the above research, this study posits that, during health crises like the COVID-19 pandemic, college-based WeChat accounts which dispatch content with a rich textual composition can offer college students an enhanced sensory experience. Such content can galvanize students' psychological engagement more effectively, thus elevating communication outcomes. Based on this, the hypothesis was proposed:

H3: There is a significant difference in the "wow" for different content vividness.

3.4. Content Originality

In today's digital era, the uniqueness and freshness of content are pivotal. Original content not only captures the audience's attention but also fosters an environment for idea exchange. Numerous studies affirmed the importance of content originality in boosting communication effectiveness. For instance, Jiang and Beaudoin, in their study on an

anti-smoking campaign on social media, revealed a strong correlation between original content and key metrics such as NTR, likes, and retweets, especially when the content incorporated elements like subjective norms, perceived risk, and self-efficacy [47]. Similarly, Liu and Dong's research demonstrated a positive link between the originality of content on WeChat official accounts and communication effectiveness, as measured by increasing NTR and thumbs-up [48]. Wu and Qu's exploration of local news media content on WeChat found that original content significantly enhanced reader's engagement [49]. Given the deluge of redundant information in our times, producing original content demands significant dedication in terms of creativity and effort, distinguishing it from mere rehashed material. Consequently, the "original" tag in an article acts as a marker of its credibility, quality, and overall esteem, offering a heuristic cue for users [50]. Based on this, the following hypothesis was proposed:

H4: Content originality has a positive effect on the "wow".

3.5. Title Length

Titles are the first point of contact between the content and its potential readers, playing a crucial role in guiding their engagement decisions. Extremely brief titles might offer inadequate insight, leading to reader's confusion or disinterest, while overly long titles could be perceived as verbose, potentially turning readers off. For instance, a study by Li et al. observed a negative relationship between title length and engagement metrics such as plays and thumbs-up, for "Li Ziqi" videos on YouTube [51]. In a similar vein, Wu's research pointed out that an increase in title length corresponded to decreased NTR for content on WeChat Official Accounts [52]. Particularly during the pandemic, with the sheer volume of similar content primarily focusing on health guidelines or organizational measures, long titles could induce visual and cognitive fatigue. On the other hand, concise yet descriptive titles can swiftly orient readers to the essence of the content [53]. Based on this, the hypothesis was developed:

H5: The length of tweets' headlines negatively affects the NTR.

3.6. Title Tone

The tone of a title serves as a powerful reflection of the publisher's intentions, values, and perspectives. Depending on their linguistic structures, tones can be classified into four primary categories: interrogative sentence, exclamatory sentence, imperative sentence, and declarative sentence [54]. A comprehensive analysis by Jia of headlines on WeChat Official Accounts highlighted a trend: Titles framed as exclamatory sentences or posed as question sentences not only dominated the landscape but also significantly commanded higher NTR and thumbs-up, compared to titles with other tones [55]. Similarly, research by Tang and Yang identified clear disparities in engagement metrics among different tonal structures of titles. Specifically, while question-based titles were the most ubiquitous, titles articulated as exclamatory sentences attracted the highest NTR [56]. Based on the above

discussion, the following hypothesis was proposed:

H6: There is a significant difference in the NTR for headlines with different tone types.

3.7. Title Vividness

Vividness of a title can be dissected into its content and form. The content aspect focuses on the compelling nature of the title that fuels a reader's intention to delve deeply. Comparatively, the form aspect emphasizes variations like personification or tone alterations, aiming to resonate more closely with readers and capture their attention. For example, Ji and Cai, in their scrutiny of factors influencing WeChat Official Accounts' communication impact, discerned that semantic intricacies of a headline could wield a significant effect on engagement metrics like NTR and retweets [57]. They found that elements, which introduced suspense, anthropomorphism, and other lively figures of speech, could amplify a user's inclination to engage with the content, thereby bolstering the communication effectiveness. Chen's analysis also corroborated these findings, suggesting that headlines infused with a narrative arc or suspense had a marked positive effect on NTR [58]. Amid the pandemic, colleges and universities relied on WeChat platforms to release a large amount of information, which bore similarities in terms of content, form, etc. This deluge could easily lead to cognitive and visual fatigue among college students, potentially diminishing engagement. Thus, vibrant and captivating headlines are more likely to instigate users' engagement and then improve NTR. Based on the above discussion, the following hypotheses were proposed:

H7a: Titles with content vividness positively influence the NTR.

H7b: Titles with form vividness positively influence the NTR.

3.8. Elements of Thought Leadership

Amidst the pandemic, universities have been prolific in disseminating diverse content via their WeChat Official Accounts. This content spectrum covers themes from ensuring academic continuity amidst classroom closures to spotlighting commendable pandemic response initiatives and community volunteerism, and disseminating scientific protocols for pandemic mitigation, whose narrative is a profound pedagogical lesson for college students. Themes highlighting the heroic endeavors of healthcare workers, advocating scientific rationality over misinformation, and fostering resilience in the face of adversity offer students deep-seated moral and educational insights. Given this context, it becomes paramount for higher education institutions to intertwine their pandemic prevention strategies with educational imperatives, and recognize the inextricable link between moral character development and tertiary education [59]. Therefore, the following research question was proposed:

Q1: What salient elements of thought leadership manifest in the content shared on college WeChat Official Accounts during the pandemic?

4. Method

4.1. Data Collection

On December 31, 2019, the Wuhan Municipal Health Commission publicly announced the initial cases of what would become the global COVID-19 pandemic. The stringent lockdown measures in Wuhan were not lifted until April 8, 2020. Given the trajectory of the pandemic and the comprehensive scope of this research, the data collection period was set from January 1 to April 30, 2020.

This study focused on 40 tertiary institutions from the premier list that emphasizes the integration of WeChat official accounts with ideological and political attributes. These selected accounts stood at the forefront of merging new media with ideological and political initiatives. This list was meticulously curated by influential entities such as the Publicity Department of the Central Committee of the CPC, the Office of the Central Cyberspace Affairs Commission, the Ministry of Education of the CPC, and the Communist Youth League of China. Their joint objective centered on capitalizing on new media platforms to bolster ideological and political endeavors within higher education institutions, positioning these college WeChat accounts as powerful instruments for ideological and political education [60].

This research aims to unpack the intricate operational and communication strategies of these WeChat official accounts, especially during periods of public health crises. The intent is to glean insights into how tertiary institutions adeptly wield limited resources to dispense innovative ideological and political education amidst unprecedented challenges. The ultimate goal is to furnish both theoretical perspectives and pragmatic strategies to elevate the new media efforts in ideological and political domains.

To amass pertinent content, a blended approach comprising both automated and manual techniques was employed. Search terms like novel coronavirus, pandemic, coronavirus, anti-pandemic, war against the pandemic, pandemic prevention, and related terms were used. Python was the tool of choice for web scraping to pull initial data, which was then manually vetted for relevancy. The accumulated data spanned various metrics, including the WeChat Official Account's name, article headline, link, publication timestamp, NTR, "wow" and more. Employing systematic sampling helped refine a representative dataset. After data-cleaning, a total of 996 valid entries were obtained.

4.2. Coding Scheme

The following steps were taken to develop the codebook. First, an exhaustive literature review related to ELM and social media's communicative impact was undertaken to inform the primary coding structure and analysis foundation. Second, random sections of the dataset were closely analyzed in light of the literature, allowing iterative refinement of coding categories tailored to the dataset's specificities.

Content theme. We categorized the primary topic of the samples, with 11 categories numbered 1-11: pandemic

situation, frontline report, outbreak response, anti-pandemic research, impact of the pandemic and action, pandemic science, emotional support, volunteerism, ideal and belief, life of the infected, and others.

Narrative. It is about the differences between content which uses a storytelling approach (coded as 1) or a logical, data-driven approach (coded as 0).

Content vividness. It indicates the use of multimedia elements in the content, numbered 0-4 based on the combination of media types.

Content originality. It determines if content is marked as "original", with presence coded as 1 while absence as 0.

Title length. It segregates the number of words in a title into five ranges, each coded 1-5.

Title tone. It classifies the tone of a title into five categories, each numbered 1-5: declarative, exclamatory, interrogative and rhetorical, imperative, negative and contrastive.

Title vividness. This assesses the engagement potential of the title, hinging on its language richness in expression. Factors considered include: narrative devices such as storylines or suspense; rhetorical devices such as personification or metaphors; language elements like personal pronouns, adverbs of degree, or tone indicators. Based on this, titles employing any of the above were coded as 1, while those without as 0.

Elements of thought leadership. This category delves into the ideological undertones of the content. Specific markers were: advocacy of science-based approaches and discouragement of rumor propagation; celebrating altruistic spirit like aiding the injured or considering broader social implications, and so on. Each distinct element was identified and coded accordingly.

Control variables. Variables consider external factors like information release time (coded 1-4 based on four time slots) and weekday release (coded 1 for weekdays and 0 for weekends).

4.3. Reliability

All coding was done by two faculty members. Prior to formal coding, coders carefully communicated the definitions and samples of each predictor and randomly selected some samples for trial coding. In response to inconsistent understanding of coding, the operation manual was continuously communicated and updated. After three rounds of communication, 10% of the total samples (N=100) were randomly selected for trial coding. In the end, the average kappa coefficient of all categories was above 0.9, which indicated good consistency.

4.4. Data Analysis

In this paper, the negative binomial regression model was used to analyze the data. The negative binomial regression model is a more generalized distribution form applicable to counting data, usually used to explain counting data with large dispersion and variability [61]. Although used in several fields, this model is more effective for adapting to the various types of data generated in communication studies [21, 62]. Consequently, given the large variation in the number of followers, thumbs-up, and "wow" across accounts, this paper used negative binomial regression to examine the relationship between different content dimensions and youth engagement.

5. Results

5.1. Sample Characteristics

Concerning the dissemination metrics of the tweets, the highest NTR hit the mark of over 100,000, averaging at 15,129, and the peak of "wow" tallied at 2,027, averaging at 137. Evaluating the content nuances, the majority of tweets leaned towards a non-narrative structure (n=800, 80.3%) and were primarily non-original (n=872, 87.6%). During the pandemic, the content production of colleges and universities was mainly collective and inductive, offering an objective portrayal of the pandemic dynamics and the institutional response, where there was a noticeable tilt away from engaging forms such as storytelling or sharing personal experiences. However, the richness of the presentation form was prioritized, with the "text + picture" combo dominating (n=693, 69.6%), trailed by the amalgamation of "text + picture + video" (n=229, 23%). From the aspect of content themes, the impact of the pandemic and action was the foremost highlights (n=339, 34%), succeeded by the tweets emphasizing emotional support (n=148, 14.9%) and volunteerism (n=124, 12.4%). Conversely, the number was notably lesser in tweets like pandemic situation (n=23, 2.3%) and the life of the infected (n=7, 0.7%), with the latter largely emerging from institutions situated in Hubei Province. In the realm of thought leadership, a predominant portion of the content underscored collective challenges, unity, collaboration, and humanistic care (n=691, 69.4%).

Surveying headline characteristics, titles spanning 15-19 words were predominant (n=293, 29.4%), with the tone heavily favoring exclamatory expressions (n=588, 59.0%). Evaluating tweets' timings, a bulk of them were dispatched during weekdays (n=719, 72.2%), with the interval between 12:00-17:59 marking the zenith (n=371, 37.2%).

Table 1. Sample characteristics.

Item	Type	N	%	Item	Type	N	%
title length	≥ 25	191	19.20	originality	yes	124	12.40
	20-24	236	23.70		no	872	87.60
	15-19	293	29.40	narrative	yes	196	19.70
	10-14	198	19.90		no	800	80.30
	≤ 9	78	7.80	content vividness	text + picture + video	229	23.00
title tone	negative or contrasting	2	0.20		text + video	11	1.10
	imperative	51	5.10		text + picture	693	69.60

Item	Type	N	%	Item	Type	N	%
	interrogative or rhetorical	42	4.20		text	63	6.30
	exclamatory or emphatic	588	59.00		life of the infected	7	0.70
	declarative	313	31.40		(sth. or sb.) else	10	1.00
content vividness	yes	386	38.80		ideal and belief	69	6.90
of the title	no	610	61.20		volunteerism	124	12.40
form vividness of	yes	390	39.20		emotional support	148	14.90
the title	no	606	60.80	content	pandemic science	46	4.60
	18:00-23:59	279	28.00	theme	impact of the pandemic and action	339	34.00
	12:00-17:59	371	37.20		anti-pandemic research	36	3.60
timing	8:00-11:59	321	32.20		outbreak response	72	7.20
	0:00-7:59	25	2.50		frontline report	122	12.20
weekday	yes	719	72.20		pandemic situation	23	2.30
	no	277	27.80				

5.2. Hypothesis-Testing

The omnibus test rendered a p<.001, inferring the model's statistical significance. Table 2 presented the relationship between characteristics of tweets and engagement. H1 surmised the influence on engagement driven by different content themes. The results showed that anti-pandemic research (β=.50, p<.05) and the impact of the pandemic and action (β=.33, p<.05) had a positive impact on NTR compared to pandemic situation. Especially, the former category exhibited paramount significance. Meanwhile, content categories spanning frontline report (β=.69, p<.001), anti-pandemic research (β=.83, p<.001), and emotional support (β=.38, p<.01) demonstrated notable positive effects on "wow". As a consequence, H1 was supported.

H2 held a positive correlation between narrative and "wow". However, our findings indicated no discernible relationship between content's narrative rendition and the number of "wow" (β=-.23, p=.09), so H2 was not supported.

H3 postulated a positive relationship between content vividness and "wow". The results denoted lower amount of "wow" for both "text + picture" (β=-.42, p<.001) and "text + video" (β=-.48, p<.05) compared to the comprehensive form of "text + picture + video", so H3 was supported.

H4, which suggested a positive correlation between content originality and "wow", confirmed that original tweets were indeed positively correlated with heightened amount of "wow" (β=.90, p<.001). In such a case, H4 was supported.

H5 argued that variances exist in "wow" based on title length. Findings indicated that compared to titles with 25 or more words, others owned higher "wow", with the range of 10-14 words being the most efficacious (β=.47, p<.001). Therefore, H5 was supported.

H6 posited engagement variations based on different tones of titles. Results showcased a decline in NTR when exclamatory tones were utilized in comparison to a declarative style (β=-.16, p<.05), and H6 was supported.

H7 proposed that increasing vividness in headlines would escalate NTR. Nevertheless, no apparent relationship was showed between title vividness and NTR (β=.01, p=.88; β=-.05, p=.56), thus H7 was not supported.

Table 2 also showed the effects of the control variables on NTR and "wow". In terms of posting timing, there was no statistical significance in NTR of 8:00-11:59 (β=.47, p=.15) compared to 0:00-7:59 (β=.61, p<.05). Comparatively, positive correlations existed between NTR and the periods of 12:00-17:59 (β=.61, p<.05) and 18:00-23:59 (β=.58, p<.05), with tweets posted in the evening having stronger correlation with NTR. However, there was no correlation between different posting timings and the number of likes. Besides, in terms of the effect of whether a tweet is posted on weekdays on online engagement, tweets posted on holidays had higher NTR (β=-.37, p<.001) and "wow" (β=-.30, p<.01).

Table 2. Impact of tweet characteristics on users' engagement.

Dimension	NTR				Wow			
	β	SE	P	Exp (β)	β	SE	P	Exp (β)
content theme								
pandemic situation (reference)	/	/	/	/	/	/	/	/
frontline report	.26	.17	.13	1.30	.69***	.21	p<.001	2.27
outbreak response	.15	.20	.44	1.17	.20	.26	.44	1.22
anti-pandemic research	.50*	.22	p<.05	1.65	.83***	.23	p<.001	2.44
impact of the pandemic and action	.33*	.14	p<.05	1.39	.07	.17	.67	1.07
pandemic science	.06	.25	.82	1.06	.18	.27	.51	1.20
emotional support	.01	.17	.96	1.01	.38**	.20	p<.01	1.47
volunteerism	.04	.16	.78	1.05	.21	.18	.25	1.24
ideal and belief	-.08	.18	.66	.92	-.25	.25	.31	.78
life of the infected	-.15	.22	.50	.86	.58	.36	.11	1.78
(sth. or sb.) else	.01	.31	.98	1.01	-.02	.35	.95	.98
narrative	-	-	-	-	-.23	.14	.09	.79
vividness of the content								
text + picture + video (reference)	/	/	/	/	/	/	/	/

Dimension	NTR				Wow			
	β	SE	P	Exp (β)	β	SE	P	Exp (β)
text + picture	-	-	-	-	-.42***	.09	p<.001	.66
text + video	-	-	-	-	-.48*	.19	p<.05	.62
text	-	-	-	-	.17	.12	.44	1.19
content originality	-	-	-	-	.90***	.04	p<.001	2.45
length of the title								
≥25 (reference)	/	/	/	/	/	/	/	/
1-9	.40*	.13	p<.05	1.38	-	-	-	-
10-14	.47***	.11	p<.001	1.55	-	-	-	-
15-19	.22*	.10	p<.05	1.24	-	-	-	-
20-24	.27**	.11	.07	1.24	-	-	-	-
title tone								
declarative (reference)	/	/	/	/	/	/	/	/
exclamatory or emphatic	-.16*	.08	p<.05	.85	-	-	-	-
interrogative or rhetorical	-.09	.21	.67	.91	-	-	-	-
imperative	-.18	.17	.28	.84	-	-	-	-
negative or contrasting	-.42	.39	.28	.66	-	-	-	-
title vividness								
semantic vividness	.01	.08	.88	1.01	-	-	-	-
form vividness	-.04	.08	.56	.96	-	-	-	-
timing								
0:00-7:59 (reference)	/	/	/	/	/	/	/	/
8:00-11:59	.37	.25	.15	1.45	.25	.31	.42	1.29
12:00-17:59	.61*	.26	p<.05	1.68	.20	.31	.50	1.23
18:00-23:59	.58**	.26	p<.05	1.79	.39	.31	.21	1.47
weekday	-.37***	.07	p<.001	.69	-.30**	.09	p<.01	.74

Notes: * p<.05, ** p<.01, *** p<.001; Only the main categories with significance in the model effect test were presented.

The COVID-19 pandemic examines the operation of the public health system and reflects China's unique political system and institutional advantages, the specific actions of the Party and government, the people's ideological attitudes, and the functioning of the state, and so on. These elements are extremely valuable in enlightening young people's thinking, triggering national identity, and guiding thoughts and actions.

Table 3 presented the percentage of elements about thought leadership in 996 tweets. Specially, 70% of the tweets embodied themes such as overcoming difficulties together, unity and cooperation (n=691, 69.4%). For all that, there was insufficient content on guiding physical and mental health and scientific concepts such as refraining from rumors, accounting for less than 30% of the tweets.

***Table 3.** Statistical analysis of elements about thought leadership.*

Item	Type	N	%
important deployments of the National Party and government; latest Progress in the Fight Against the pandemic	yes	454	45.60
	no	542	54.40
saving lives and helping the injured; taking the overall situation into consideration; being dedicated to one's work	yes	423	42.50
	no	573	57.50
believe in science; don't believe in rumors, and don't spread rumors	yes	115	11.50
	no	881	88.50
strengthening physical exercise; guiding mental health; good spirits	yes	296	29.70
	no	700	70.30
overcoming difficulties together; working in harmony; solidarity; humanistic care	yes	691	69.40
	no	305	30.60

6. Discussion

This paper, based on the analysis of 996 pertinent tweets disseminated by colleges and universities on the inaugural list of national colleges' ideological and political official accounts for core construction during the COVID-19 pandemic, provided insights into how the content and form attributes of college WeChat Official Accounts influence youth media engagement through content analysis and negative binomial regression, with the ELM as the theoretical guidance. The results illuminated the influence of both central and peripheral routes of the ELM on media engagement, highlighting significant effects of content theme, presentation form, title length and tone on the youth's interaction with social media. In addition, the control variables like posting timing and weekday presence also affected social media engagement.

The central routes of the ELM incorporate content theme, narrative, content vividness, and originality. Our findings echoed prior research that different content significantly influenced social media engagement [20, 35, 63]. In the current study, content related to the pandemic's impact and associated actions dominated announcements followed by volunteerism and frontline reports. Interestingly, although anti-pandemic research constituted a smaller content share, it owned the highest NTR. Additionally, frontline report,

anti-pandemic research, and emotional support garnered the highest "wow". These trends indicate that, during the pandemic, college students' primary concerns pivoted around institutional service measures and advancements in scientific research to combat the pandemic's repercussions on education and daily life.

"Wow", to a certain degree, reflects the audience's endorsement of the content. As the results showed, frontline stories about pandemic prevention, volunteerism, anti-pandemic research, and emotional support like gratitude or future aspirations recorded higher "wow". This underlines the importance of emphasizing the pandemic's impact on the academic community, institutional response strategies, frontline support, and emotional reinforcements during major health crises. Such content, being temporally and spatially relevant, can foster empathy and motivate youth engagement. In face of the pandemic, scientific research and preventive measures ought to be accentuated because they not only highlight an institution's proactive role but also fortify the youth's senses of self-efficacy and collective efficacy. For another thing, these solutions can also amplify students' collective pride, thus catalyzing higher NTR and "wow".

Emotions hold significant sway over individual behaviors, often overriding rationality and objective information [64, 65]. Communication, far from being a mere act of transmitting data, is deeply intertwined with social discourse and values sharing, thus fostering a sense of community [66]. Amidst the pandemic, the widespread dissemination of emotionally charged content, which ranges from frontline support with volunteerism to expressions of gratitude and empathy, can cultivate a collective sentiment. This emotion, infused with the notion of shared experiences and the spirit of "we are all in this together", finally will be transformed into tangible online behaviors like "wow".

Test of these observations under the established theoretical framework provided intriguing insights. The findings echoed the Use and Gratifications Approach, suggesting that during a public health crisis, individuals are not actors as merely passive receptors. Instead, they actively seek information which addresses their multifaceted demands such as emotional or cognitive needs [67]. On the other hand, the results also dovetailed with the community news theory, indicating that users are more engaged when they find the content relevant to their experiences. The essence of localized and emotional information cannot be understated because it acts as a magnet which draws users' engagement. During the pandemic, colleges' public platforms emerged as a communal hub, bridging the institution with its students and faculty. On this condition, it can offer a reliable source of information, a medium to voice concerns, and a catalyst for active community engagement. This strategic alignment of "proximate" information with young users' daily lives underscores the theme of "collective existence", thereby amplifying users' engagement.

Contrary to previous studies [41], our analysis found that narrative did not significantly influence "wow". One possible explanation is that the authoritative sources dominantly adopted a non-narrative mode during the pandemic. Compared with the narrative-based tweets which account for less than 20%, the official tweets of colleges and universities, largely adhering to a formal and structured style like notices, may not have resonated deeply with the youth due to the impersonal nature. Besides, the official tweets of colleges and universities pay more attention to the ideological value, and carries more "grand ideas" in the aspects of personal experiences such as supporting anti-pandemic. In such a case, too much narrative will dilute its appeal to the youth. Nevertheless, narrative intertwined with content themes, especially those recounting teachers' and students' experiences or emotional support stories, still commands a robust level of engagement.

Similar to the results of previous studies [46], this research also observed marked disparities in social media engagement driven by different presentation media including text, picture, and video. According to the "3V" communication paradigm, forms of verbal, vocal and visual media are combined in the form of video, which has the greatest impact on information receivers [68]. Within our research scope, "text + picture + video" culminated in the highest metrics of "wow", underscoring the pivotal role of diverse presentation forms. Consequently, integrating texts with visuals not only escalates users' engagement but also fosters a more immersive experience. The resultant effect of such multi-modal communication might even be synergistic, amplifying the overall impact beyond the sum of its parts. Furthermore, what enriches our insights is that the findings revealed a robust correlation between original tweets and their "wow". Remarkably, original tweets commanded "wow" was approximately 2.45 times higher than those non-original counterparts. Original content, meticulously curated and disseminated by the publishing entities, inherently pools in greater resources and attention. Apart from this, the youth who are active participants in the content's creation or dissemination often perceive it with heightened credence. Amidst the vast sea of homogenized content released by social media, tweets stamped with the "original" tag usually distinguish themselves. Such content not only accentuates brand identity but also offers a unique allure, serving as a beacon in the cluttered landscape and magnetically drawing viewers in.

One of the key components of ELM peripheral route is the way headlines are structured. This study affirmed the significance of title length, tone, and vividness in driving users' engagement. In the realm of headline length, a noteworthy observation was its inverse relationship with NTR. This trend corroborated findings from earlier research [52]. Digging deeper, we discerned that headlines spanning fewer words invariably garnered higher NTR compared to those exceeding 25 words. The sweet spot seemed to lie in the range of 10-14 words, which yielded the most pronounced impact on NTR. Amid the deluge of pandemic-related content on social media, brevity in headlines emerges as a potent tool for cutting through the noise. Succinct headlines, by zeroing in on the crux of the content, magnetically draw users in. For instance,

headlines such as "heroes list", "hugs", "thank you", and "90s" exemplify the above strategy. Ingeniously fusing words and symbols can exponentially enhance a headline's traction, thereby ensuring the focal message resonates with the target audience.

The tone of a headline can serve as a subtle cue for readers, guiding their inclination to engage with the content. This study delved into the nuanced effects of title tone on users' engagement, primarily contrasting declarative sentences against other tonal variants. Utilizing declarative tone as a benchmark, our findings suggested that headlines employing emphatic and exclamatory tones registered lower NTR. Interestingly, the disparities for other tonal categories were not statistically significant. This observation runs counter to Jia's research, which posited that exclamatory and interrogative headlines not only feature more predominantly but also captivate higher NTR and likes [55]. The possible reason for this is, on the one hand, declarative headlines predominantly encompass factual declarations such as updates on pandemic control, academic schedules, and other official communiques. The intrinsic gravity of such content propels it into higher NTR. On the other hand, exclamatory headlines, by design, accentuate specific elements to capture attention. However, amidst the torrential inflow of pandemic-related information, readers are often beleaguered by information saturation, which can precipitate feelings of anxiety and unease [69]. A persistent barrage of such content is liable to evoke defensive mechanisms. As a consequence, individuals might veer away from content laden with alarmist undertones, thereby sidestepping further emotional distress and refraining from adhering to protective guidelines [70].

When it comes to the vividness of titles, our findings offered a nuanced understanding. While some aspects were congruent with prior studies [58], there were unexpected results which indicated no discernible difference in readers' engagement based on the use of vivid elements like personal pronouns or intonational adverbs. Contrary to common practices, the incorporation of semantic vividness, which uses the elements that craft a storyline or instill suspense, did not significantly sway NTR either. One possible consequence is the cautious dissemination of information amid the pandemic. The severity and sensitivity of the situation possibly curtail experimentation with the design of titles. With content creators walking on a tightrope and balancing accuracy with readers' engagement, there is an apparent lack of differentiation between basic narrative and more intricate and suspense-driven headers.

Transitioning to the control variables, particularly focusing on the timing and frequency of publication, our conclusions resonated with prior findings where timing played a pivotal role in readers' engagement [31, 57]. Young college students exhibit discernible reading patterns, with spikes during afternoon respite and the hours leading to bedtime because of the relatively centralized morning courses. Particularly, the evening slot emerges as a prime window of opportunity for content dissemination. Additionally, holidays, granting students more autonomy and leisure, invariably lead to enhanced online engagement, thus recording higher NTR and thumbs-up.

7. Implications and Limitations

This research stands out as a pioneering effort which examines the engagement patterns of young college students with social media during the COVID-19 pandemic, using the ELM as its guiding theoretical framework. By meshing established models like media effects theory with the ideological and political education theory, our study casts a novel light on how to approach the communication of ideological and political education amid public health crises. This work offers a refined approach which diverges from typical media studies that delve into ideological work within university spaces during such outbreaks. It meticulously deconstructs content, considering both central and peripheral routes to evaluate how young students engage with these different informational structures. Such an approach not only bolsters our understanding but also localizes and validates existing theoretical perspectives.

Although this paper provides some new perspectives, it still has shortcomings. First, the research exclusively focused on the tweets released on WeChat official accounts, overlooking other popular social media platforms like Weibo and Douyin. While WeChat remained a pivotal medium during the pandemic [71], diversifying our research across other platforms might render a more holistic picture. As a consequence, future studies should embrace a more expansive digital landscape to gauge diverse users' engagement. Second, certain potentially influential parameters, like the body length of tweets and their positioning within the WeChat, were not considered. Future endeavors should strive for a more exhaustive assessment by incorporating both central and peripheral routes' factors to discern their collective and individual impact. Third, although content analysis grants insights into the nature and distribution of textual information, the ELM's functionality is also swayed by individual motivations, perceptions, and capabilities. In such a case, subsequent research could employ questionnaires and experiments to delve deeper into these personal choices, emphasizing cognitive and attitudinal dimensions.

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Conflicts of Interest

The authors declare no conflicts of interest.

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