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Digital Transformation Communication Strategies and Public Engagement on Social Media: A Content Analysis of Chinese Higher Vocational Institutions' WeChat Official Accounts

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Abstract: Chinese higher vocational colleges now publish a steady stream of WeChat posts about digital transformation, yet little is known about how they frame the subject or which framings attract readers. We screened the 16,208 posts that the official accounts of 20 'Double High-Level' institutions published in 2023–2025 and coded the 276 that dealt with digital transformation. The coding framework draws on framing theory and dialogic communication theory and covers content themes, message styles and interactive features. Reads and likes were modelled with negative binomial regression. AI was by far the most common theme (42.4% of posts), and its share rose from about 30% in 2023 and 2024 to 60% in 2025. Posts on digital skills (2.9%) and smart education platforms (4.3%) were rare, three in four posts were written in a plain informational style, and only three took a cautionary line. Questions put to readers were the strongest positive predictor of both reads and likes, although only about 4% of posts used them. We argue that WeChat's broadcast design and the *xuanchuan* (publicity) tradition of Chinese public institutions together keep this communication largely one-way, and we consider what colleges might gain from a more dialogic approach.

Keywords: digital transformation, higher vocational education, WeChat, content analysis, public engagement, framing, social media, China

1. Introduction

Generative artificial intelligence (GenAI) tools such as ChatGPT and DeepSeek have unsettled many established practices in education around the world (Shahzad et al., 2025). Higher vocational education is under particular pressure to adapt, since its purpose is to train skilled workers for industry and industry itself is going digital. In China, policy has added to that pressure. Between 2023 and 2025 the central authorities issued the *Interim Measures for the Administration of Generative Artificial Intelligence Services* (Cyberspace Administration of China et al., 2023), the *Outline for Building an Education Strong Country 2024–2035* (Central Committee of the Communist Party of China and State Council, 2025) and the nine-ministry *Opinions on Accelerating the Digitalization of Education* (Ministry of Education et al., 2025). Together these documents have given vocational education an unusually strong push towards digital transformation. The scale is considerable as well. As of 2024, China's 1,611 higher vocational colleges enrolled more than 16 million students, and no other country has a vocational education system of this size (Ministry of Education, 2024).

Social media has become the main channel through which colleges reach prospective students, parents, employers and policymakers (Capriotti and Zeler, 2023). In China this usually means WeChat. Almost every higher vocational institution runs an official account and uses it to post campus news, announce achievements and keep in touch with stakeholders (Zhang, 2019). WeChat has about 1.2 billion monthly active users and works, in effect, as China's digital public sphere. How colleges write about digital transformation there is a question of interest both to researchers and to those who manage institutional communication.

Research on digital transformation in vocational education has expanded quickly (Sun and Pratt, 2024; Yang and Balazon, 2026). Most of it relies on surveys or bibliometric methods and asks whether individual teachers and students take up new technologies, while what institutions themselves communicate has received far less attention. Capriotti and Zeler (2023) did analyse how higher education institutions use social media, but their data predate GenAI and do not cover vocational colleges. Studies of health crisis communication have shown that framing and dialogic strategies can raise public

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engagement on social media (Ngai et al., 2020a, 2023), yet we found no study that looks closely at how vocational institutions frame digital transformation for their stakeholders. Yang et al. (2024), one of very few studies of Chinese vocational institutions' social media presence, analysed visual identity in images only. The written side of these institutions' digital transformation discourse has so far gone unexamined.

This study therefore examines which communication strategies Chinese higher vocational institutions use when they write about digital transformation on WeChat, and how those strategies are related to public engagement. We develop a framework that brings together content framing, message style and interactive features, and use it to describe how colleges discursively construct digital transformation for their stakeholders. The results should also be of practical use to college leaders and communication staff. Engagement on social media now bears directly on student recruitment and on institutional reputation, and competition for both is growing.

The next section reviews framing theory and dialogic communication theory as they apply to educational institutions. We then explain how the WeChat data were collected and coded, present and discuss the results, and close with implications, limitations and directions for further research.

2. Literature Review

Framing digital transformation in educational institutional discourse

Framing theory starts from a simple observation. The same information can be presented in different ways, and what a communicator selects, emphasizes or leaves out influences how audiences perceive and interpret it (Entman, 1993). In Entman's (1993: 52) words, to frame is to 'select some aspects of a perceived reality and make them more salient in a communicating text'. In media and organizational communication, frames act as cognitive shortcuts that direct what audiences attend to and how they understand it (Scheufele and Tewksbury, 2007). Applied to institutional communication on social media, the theory has proved productive, above all in research on health crises, where the framing choices of government and news media accounts were found to influence public engagement (Ngai et al., 2020a, 2022, 2023).

The theory suits our topic well. Fairclough (1992) argued that institutional discourse is performative rather than merely descriptive, in the sense that it helps to construct the social reality it claims to report. A vocational college that presents digital transformation chiefly in terms of AI technology brings innovation and competitiveness into the foreground. Other matters, such as disruption to teaching, ethical questions or the displacement of workers, recede into the background. Students, parents, employers and policymakers then judge the college's digital readiness and strategic direction on the basis of what has been made visible to them.

Studies of higher education have already identified some recurring frames in talk about technology. Singh and Ngai (2024) looked at how top-ranked universities in the United States and the United Kingdom first responded to GenAI and found three prominent themes: GenAI as a generator of text and content, its use in teaching and learning, and its wider implications and opportunities. Concern, worry and fear were common in these statements and often sat alongside more positive assessments of what GenAI could do. The universities in question, however, were elite Western research institutions. Chinese vocational colleges answer to different policy pressures, cultural norms and institutional logics, and how they frame digital transformation is still an open question.

The Chinese context raises further questions. Public-facing communication in China has tended to stress achievements and conformity with policy and to say little about risk or uncertainty (Luther and Zhou, 2005). The same leaning towards positive framing was documented in mainstream coverage of COVID-19, where *People's Daily* presented the country's coping strategies in an overwhelmingly positive light and emphasized solidarity and patriotism (Ngai et al., 2022). One aim of our study is to find out whether vocational colleges frame digital transformation in a similarly positive way.

The platform matters too. On Weibo or Twitter, open timelines and comment threads build public discussion into the design. A WeChat official account works on a subscription model instead. The institution pushes selected content to its followers, and the result looks more like a digital newsletter than a conversation (Harwit, 2017). This design meets an institutional culture in which Chinese public-sector bodies, colleges included, have generally treated official channels as instruments of *xuanchuan* (宣传, publicity/propaganda) rather than of dialogue (Brady, 2008). On an official account the platform and the institution's norms pull the same way, towards top-down, monologic communication. Our data allow us to examine how far this holds in practice.

Dialogic communication and public engagement on social media

Kent and Taylor's (1998, 2002) dialogic communication theory is the usual starting point for research on how organizations build relationships with publics through social media. They define dialogue as 'any negotiated exchange of ideas and opinions' (Kent and Taylor, 1998: 325), an exchange that depends on mutual understanding. For dialogue

to happen, an organization has to offer information that stakeholders find valuable and also give them ways to respond. Kent and Taylor (1998) proposed five strategies for building dialogic relationships, namely providing useful information, maintaining a dialogic loop, generating return visits, ensuring ease of interface and conserving visitors.

Engagement on social media is usually measured through behaviour, that is, through reads, likes, shares and comments (Men and Tsai, 2012, 2013; Ngai et al., 2020a). These indicators stand for different degrees of involvement. A read may be no more than passive consumption, whereas a like is an act of endorsement and a share passes the information on to others. Kim et al. (2014) separated low-level engagement, which consists of consuming content, from high-level engagement, which involves producing or sharing it, and argued that communication strategies can move audiences systematically from low-level towards high-level engagement.

Both the content of a message and its style affect engagement. In COVID-19 communication on Weibo, Ngai et al. (2020a) found that disease prevention posts written as narratives were shared significantly more often than non-narrative posts. A later study by the same team showed that trust-building strategies, among them source credibility, information transparency and actions to reduce uncertainty, were significant predictors of engagement (Ngai et al., 2023). Corporate communication shows a comparable pattern. When Ngai and Jin (2016) examined Chinese stakeholders' responses on Sina Weibo to the 2013 Asiana Airlines crash, they found that an early combination of accommodative and defensive strategies helped to keep the crisis from escalating. Chinese and German companies that used culturally congruent styles on Weibo also received more favourable public responses (Ngai et al., 2020b). This line of research has not yet been extended to educational institutions, whose relations with stakeholders differ considerably from those of a health authority or a company.

WeChat makes some forms of dialogic communication possible and rules out others. Weibo is designed for open interaction across networks, whereas WeChat official accounts sit inside a comparatively closed system in which a post reaches people only if subscribers choose to open the notification pushed to them. Engagement figures on WeChat (reads, likes and 'wow' reactions) tell us mainly how an audience received curated content. They say little about conversation. Which strategies can get around this structural limit and produce real engagement is a question with clear practical stakes.

WeChat as an institutional communication platform in Chinese vocational education

WeChat's place in Chinese institutional communication needs some explanation. Launched in 2011 as a messaging app, it has grown into a digital ecosystem that people use for social networking, reading media content, making mobile payments and accessing government services (Harwit, 2017). Official accounts were introduced in 2012 and let organizations publish articles that are pushed into subscribers' message feeds. By 2024 practically every Chinese higher vocational institution had at least one official account, and many ran several for different schools or administrative functions.

Several features of the official account system set it apart from Western social media platforms, and they bear directly on how institutions communicate. Distribution is based on permission. A user has to follow (关注) a college's account before any of its posts arrive, so the audience selects itself and is already inclined to take an interest in the institution. Comments are moderated by the account administrator, who decides which of them appear publicly under a post, and this strengthens the top-down character of the exchange. The public sees only the number of reads and a combined 'like/wow' (点赞/在看) count, while share counts and full comment data are usually visible to administrators alone. In this way the institution controls both what is published and how the audience's response appears to others, an arrangement that fits comfortably with the *xuanchuan* tradition described above.

Empirical work on Chinese vocational colleges' use of WeChat remains thin. Zhang (2019) examined the accounts of 35 demonstrative higher vocational colleges and described their content as 'relatively dull and serious', concerned mainly with ideological guidance, mainstream ideology and the promotion of the 'Craftsman Spirit' (工匠精神). That study was carried out before the recent wave of digital transformation and GenAI, and it did not relate communication strategies to public engagement. The present study addresses both points.

Development of an integrated framework and research questions

From this literature we built a framework with three dimensions for analysing digital transformation communication and its relationship with public engagement.

Dimension 1: Content themes. Six content themes were derived from earlier studies of digital transformation in education (Singh and Ngai, 2024; Yang and Balazon, 2026) and of institutional communication (Ngai et al., 2020a). CT1, AI and intelligent technology, includes GenAI tools, robotics and machine learning applications. CT2 refers to smart education platforms and online teaching, for example digital learning environments and virtual simulation. CT3, digital infrastructure, covers smart campus construction, cloud computing and IoT systems, and CT4 concerns the development of

digital skills and literacy among teachers and students. CT5, industry-education digital integration, is about school-enterprise cooperation in digital fields. CT6, digital policy and governance, deals with policy interpretation and institutional strategy.

Dimension 2: Message styles. We adapted the style analysis of Ngai et al. (2020a, 2022) and coded four message styles. Promotional/advocating posts (MS1) are enthusiastic and dwell on achievements. Informational/explanatory posts (MS2) report facts in a neutral tone. Cautionary/reflective posts (MS3) show awareness of risk or evaluate developments critically, and interactive/participatory posts (MS4) ask questions, issue invitations or otherwise try to involve readers.

Dimension 3: Interactive features. Following Ngai et al. (2020a, 2023), we recorded features that can help to create a dialogic loop. These were external links (IF1), multimedia elements such as images and videos (IF2), hashtags or topic markers (IF3), and questions or polls asking readers for feedback (IF4).

The study addresses three research questions:

RQ1: How do Chinese higher vocational institutions use content themes, message styles and interactive features when communicating about digital transformation on WeChat?

RQ2: How are the three dimensions of communication strategy related to public engagement (reads and likes) on WeChat?

RQ3: Is there a temporal trend in the use of digital transformation communication strategies across the three-year period (2023–2025)?

3. Method

Data source and sample

The sample consists of the WeChat official accounts of 20 higher vocational institutions in the national 'Double High-Level' (双高计划) programme, whose A and B tiers make up the top level of Chinese vocational colleges. The institutions are located in 13 provinces and municipalities. Some are in the Yangtze River Delta (e.g. Wuxi Institute of Technology, Changzhou College of Information Technology and Jinhua Polytechnic University) and some in the Pearl River Delta (e.g. Shenzhen Polytechnic University, Shenzhen Institute of Information Technology and Guangdong Industry Polytechnic University). Others are in central China (e.g. Wuhan Polytechnic and Yellow River Conservancy Technical Institute) or in the west (e.g. Chengdu Aeronautic Polytechnic University and Chongqing College of Electronic Engineering). This spread gives the sample geographical diversity and a broad picture of vocational education across China.

With the data extraction tool WCPlusPro we collected every post that the 20 accounts published between 1 January 2023 and 31 December 2025. ChatGPT had been launched in November 2022, so the window runs from the colleges' first responses to it through to the much more active policy environment of 2025. The corpus contains 16,208 posts. Table 1 shows how these posts, and the digital transformation posts among them, are distributed across the institutions.

[Table 1: Distribution of Posts Across Sampled Institutions]

Institution	Province	Total posts	DT-related posts
Tianjin Vocational Institute	Tianjin	3,192	60
Zhejiang Institute of Mechanical & Electrical Engineering	Zhejiang	965	32
Changzhou College of Information Technology	Jiangsu	800	23
Wuhan Polytechnic	Hubei	304	19
Shandong Institute of Commerce and Technology	Shandong	706	17
Chongqing College of Electronic Engineering	Chongqing	806	17
Wuxi Institute of Technology	Jiangsu	755	15
Beijing Vocational University of Science and Technology	Beijing	606	14
Wuhu Institute of Technology	Anhui	359	14
Changsha Social Work College	Hunan	1,091	13
Nanjing College of Information Technology	Jiangsu	795	8
Shunde Polytechnic	Guangdong	698	8
Shenzhen Institute of Information Technology	Guangdong	552	7
Suzhou Institute of Industrial Technology	Jiangsu	782	6
Shenzhen Polytechnic University	Guangdong	730	5
Jinhua Polytechnic University	Zhejiang	883	5
Guangdong Industry Polytechnic University	Guangdong	293	4
Yellow River Conservancy Technical Institute	Henan	836	4
Chengdu Aeronautic Polytechnic University	Sichuan	741	3
Shaanxi Polytechnic Institute	Shaanxi	314	2
Total		**16,208**	**276**

The number of digital transformation posts varies widely between institutions, from 2 to 60, and the spread is a finding in itself. Tianjin Vocational Institute posted the most. Its strong programme profile in information technology and intelligent manufacturing, together with its status as a national

digital skills training base, may account for this. Colleges with very few such posts, for instance Shaanxi Polytechnic Institute (n = 2) and Chengdu Aeronautic Polytechnic University (n = 3), may give priority to other subjects such as aerospace or traditional manufacturing, or may simply devote fewer resources to publicity about digital transformation. Communication practice is far from uniform, even within the top tier of Chinese vocational education.

To identify posts relevant to digital transformation, we applied a multi-layered keyword filtering strategy comprising over 40 keywords organized into four tiers: core terms (e.g. 数字化, 智慧教育, 信息化), technology terms (e.g. 人工智能, AI, 大数据, 云计算, DeepSeek), education-specific terms (e.g. 在线教学, 智慧教学, 虚拟仿真) and policy terms (e.g. 教育数字化, 智能制造, 数字经济). Posts were then subjected to rigorous manual screening to exclude false positives, including posts using keywords decoratively (e.g. '新生大数据' referring to enrolment statistics rather than big data technology), posts referencing technologies in non-educational contexts and purely re-posted policy documents without institutional commentary. This process resulted in a final sample of **276 posts** from 20 institutions for content analysis.

Content analysis and coding scheme

We analysed the 276 posts by means of content analysis, a method widely used in research on media and technical communication (Boettger and Palmer, 2010). In this method, occurrences of words, phrases, signs and sentences are recorded and analysed in their context so as to arrive at a detailed understanding of the material (Boettger and Palmer, 2010). Content analysis is well suited to coding against a predefined framework in media communication research (Ngai et al., 2020a), and it allowed us to establish how the variables in our framework relate to one another.

To answer RQ1, each post was assigned one dominant content theme (CT1–CT6) and one dominant message style (MS1–MS4). Coding was done at the sentence level and followed the dominant-category approach of earlier studies (Ngai et al., 2020a), so that where the sentences of a post touched on more than one theme, the theme appearing in the largest number of sentences was taken as dominant. For interactive features we counted how often each feature (IF1–IF4) occurred in a post. Engagement was measured by the numbers of reads and likes a post had received, as is usual in research on WeChat.

Coding reliability

The author coded all 276 posts according to the coding scheme. After an interval of ten days, a random 15.2% of the posts (n = 42) were coded a second time to assess intra-coder reliability. Agreement between the two rounds averaged 92.1% across the coding dimensions: 92.9% for content themes (Cohen's Kappa = 0.91), 90.5% for message styles (Cohen's Kappa = 0.87) and 92.9% for interactive features. A mean Kappa of 0.89 for the content and style dimensions indicates almost perfect agreement (Landis and Koch, 1977). Test-retest checks of this kind are an established way of assessing coding consistency when the analysis is carried out by a single coder (Lombard et al., 2002).

Statistical analyses

For RQ1 we computed means and standard deviations for all sub-dimensions and used the Kruskal-Wallis test and one-way ANOVA to compare how content themes, message styles and interactive features were used. Where the assumption of homogeneity of variances did not hold, Welch's ANOVA results were reported instead.

For RQ2, we first employed Poisson regression, a count regression model (Herbison et al., 2015), to examine the relationship between communication strategy sub-dimensions (independent variables) and public engagement counts (dependent variables). However, real-world social media data sets are commonly known to violate the assumption in the Poisson regression with respect to overdispersion of outcome variables (Sroka and Nagaraja, 2018). As expected, such a violation was detected in our data set (Pearson $\chi^2/df = 2063.42$), and thus, we followed the common practice of replacing Poisson regression with the negative binomial regression model (NB2) to improve the goodness of fit, particularly Akaike's Information Criterion and Bayesian Information Criterion (Herbison et al., 2015). NB2 is effective in fitting various types of data seen in communication research (Gurland, 1959), and 'the negative binomial model is a more general model compared with the Poisson regression model that relaxes the strong assumption that the underlying rate of the outcome is the same for each included participant' (Herbison et al., 2015: 7). The reference categories were CT1 (AI and intelligent technology) for content themes and MS2 (informational) for message styles. For RQ3, chi-square tests and ANOVA were employed to examine temporal trends across the three years.

4.Findings and Discussion

RQ1: Digital transformation communication strategies on WeChat

Content themes. The use of the six content themes differed significantly across the 276 posts (Kruskal-Wallis H = 16.647, p = .005). AI and intelligent technology (CT1) was by far the most frequent theme, with 117 posts or 42.4% of the total (mean reads = 2298, SD = 2212). Industry-education digital integration (CT5) came second (24.3%, n = 67, mean reads = 1857, SD = 2483), followed by digital infrastructure (CT3, 17.4%, n = 48, mean reads =

2007, SD = 2087) and digital policy and governance (CT6, 8.7%, *n* = 24, mean reads = 1315, SD = 1880). Smart education platforms (CT2, 4.3%, *n* = 12) and digital skills and literacy (CT4, 2.9%, *n* = 8) received very little coverage.

The weight given to AI mirrors national discourse, in which government policy has made artificial intelligence a strategic priority for education at every level (Central Committee of the Communist Party of China and State Council, 2025; Ministry of Education et al., 2025). Many AI posts struck a note of technological triumph. Typical titles were 'Blockbuster! Yellow River Conservancy Technical Institute deploys DeepSeek locally!' (重磅！黄河水利本地化部署 DeepSeek!) and 'The first DeepSeek+Hi Agent development course in higher vocational education launches' (高职首个 DeepSeek+Hi Agent 开发实战开课). Framed like this, digital transformation turns into a race, and each new deployment gives a college the chance to show stakeholders that it is modern and ahead of its competitors.

Digital skills and literacy, by contrast, barely featured (2.9%, *n* = 8). National policy documents repeatedly call for the cultivation of 数字素养 (digital literacy) among students and teachers, but the colleges do not seem to have carried this priority into their public communication. The few posts on the theme came mostly from one institution, Tianjin Vocational Institute, with titles such as 'Special training seminar on enhancing teachers' digital literacy' (提升教师数字化素养专题培训班). Why policy discourse and institutional communication diverge here deserves further study. If colleges do not show the public what they are doing to build digital skills, stakeholders may well ask whether anything is being done.

Message styles. Three in four posts (75.0%, *n* = 207) were written in the informational/explanatory style (MS2), and a further 19.9% (*n* = 55) were promotional/advocating (MS1). Interactive/participatory posts (MS4, 4.0%, *n* = 11) and cautionary/reflective posts (MS3, 1.1%, *n* = 3) were rare. Reads differed significantly by style (Kruskal-Wallis H = 7.791, *p* = .020), and the interactive posts had the highest mean, at 3259 reads.

Examples from the corpus show what each style looks like in practice. **Promotional posts** used boosterish, achievement-oriented language: 'Approved! Building an Industry 4.0-leading industry-education integration centre' (这项工程获批！打造引领工业 4.0 的产教融合中心) and 'The first "open-source HarmonyOS class" in vocational education launches, opening a new paradigm for digital talent cultivation' (首个职教"开源鸿蒙班"开班，开启数字化特色人才培养新范式). **Informational posts** adopted a neutral, factual register: 'Wuhan Polytechnic signs comprehensive cooperation agreement with Huawei Technologies' (武汉职业技术大学与华为技术有限公司签署全面合作协议). **Cautionary posts**, of which there were only three across 20 institutions and three years, addressed risk and regulatory concerns, as seen in the title 'Leading the compilation of the *Industrial Mobile Robot Safety Specification*, now officially published' (牵头编制《工业移动机器人安全规范》正式出版). **Interactive posts** employed direct questions or calls to participation: 'What does the AI see when it looks at Jinhua Polytechnic University?' (人工智能眼中的金职，居然是这样的？) and 'Free AI learning! Registration for the 2025 Shenzhen AI High-Skill Talent Training Programme now open' (AI 零元免费学！2025 年深圳市人工智能高技能人才培养计划开始报名).

Cautionary discourse was almost entirely missing. Across 20 institutions and three years we found only three posts in this style (MS3). GenAI discourse at Western universities looks very different, with concerns about academic integrity, bias and ethics in a prominent place (Singh and Ngai, 2024). The colleges we studied framed digital transformation in almost wholly positive terms, in keeping with an institutional culture where public communication foregrounds achievements and alignment with policy. Ngai et al. (2022) made a similar observation about *People's Daily*, whose COVID-19 coverage kept a consistently positive tone that served to 'build a sense of solidarity and maintain harmony'.

Interactive features. Nearly every post carried multimedia elements (IF2, mean = 1.04 per post), as one would expect on a platform as visual as WeChat. The features that invite dialogue were another matter. External links (IF1, mean = 0.007), hashtags (IF3, mean = 0.018) and questions asking readers for feedback (IF4, mean = 0.040) hardly appeared at all.

Platform design explains part of this scarcity, but not all of it. WeChat's subscription-based broadcasting model does favour one-way communication. When only 4% of posts contain a question, though, the explanation also lies in the institutional logic of *xuanchuan* (宣传) that governs official communication in Chinese public-sector organizations (Brady, 2008). Most higher vocational institutions in China are publicly funded and sit within a bureaucratic hierarchy. Their official accounts do two jobs at once. They publicize the college to outside stakeholders, and they fulfil the propaganda and ideological work (宣传思想工作) that party committees require at every level of educational governance. Communication in this setting means dissemination from the top down; the institution speaks and the public receives. It is not surprising that colleges make so little use of the interactive tools WeChat does provide, such as comment sections, polls and questions, since open

dialogue could produce responses at odds with a carefully managed institutional narrative. What the data reveal is a doubly constrained environment, in which platform architecture and institutional culture together hold back dialogic exchange.

RQ2: Communication strategies as predictors of public engagement

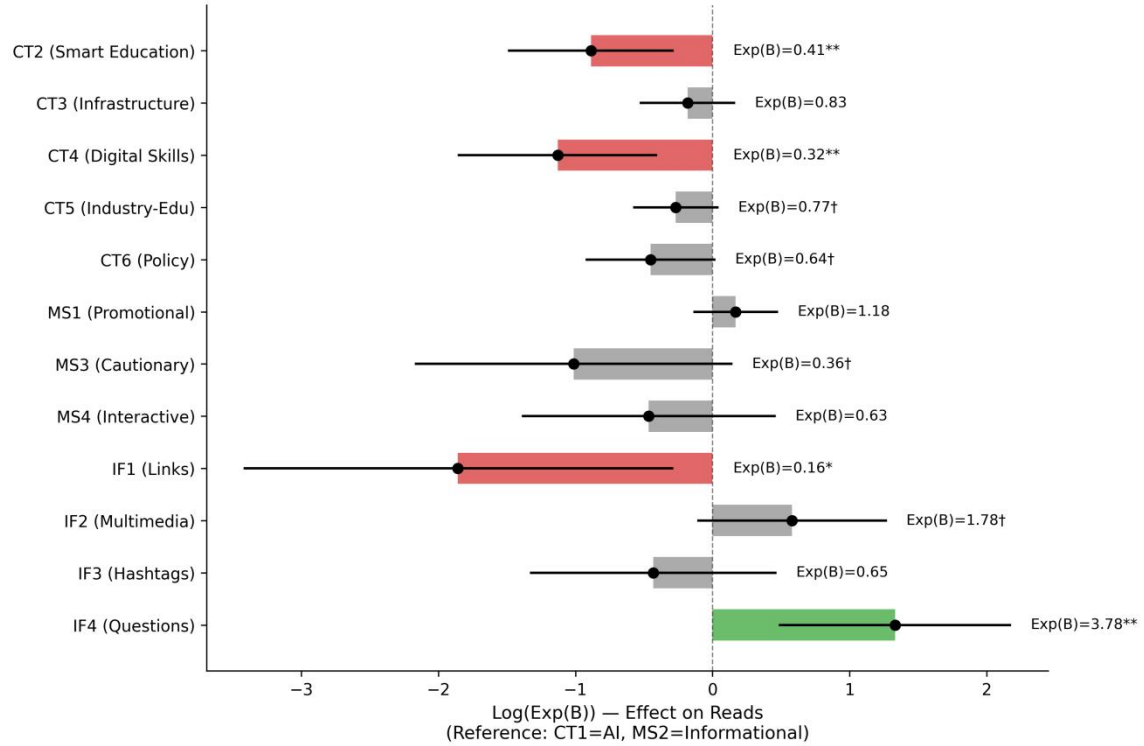
The Poisson model showed severe overdispersion (Pearson χ^2/df = 2063.42 >> 1), so NB2 was used instead. Table 2 reports the NB2 results for reads, and Figure 1 plots the effect sizes.

[Table 2: NB2 Results for Predicting Reads]

Variable	B	SE	*p*	Exp(B)	95% CI
Intercept	7.098	0.375	<.001***	1209.6	[580.6, 2520.1]
CT2 (Smart education)	−0.887	0.304	.004**	0.412	[0.227, 0.748]
CT3 (Infrastructure)	−0.183	0.173	.291	0.833	[0.593, 1.169]
CT4 (Digital skills)	−1.131	0.367	.002**	0.323	[0.157, 0.662]
CT5 (Industry-edu)	−0.268	0.155	.083†	0.765	[0.565, 1.036]
CT6 (Policy)	−0.451	0.237	.057†	0.637	[0.400, 1.013]
MS1 (Promotional)	0.169	0.154	.271	1.184	[0.876, 1.601]
MS3 (Cautionary)	−1.012	0.587	.085†	0.363	[0.115, 1.148]
MS4 (Interactive)	−0.465	0.468	.320	0.628	[0.251, 1.571]
IF1 (Links)	−1.860	0.799	.020*	0.156	[0.033, 0.745]
IF2 (Multimedia)	0.579	0.349	.097†	1.785	[0.901, 3.536]
IF3 (Hashtags)	−0.433	0.454	.340	0.648	[0.266, 1.580]
IF4 (Questions)	1.331	0.428	.002**	3.783	[1.635, 8.757]

*Note. Reference categories: CT1 (AI) for content themes; MS2 (informational) for message styles. †p < .10. *p < .05. **p < .01. ***p < .001.*

[Figure 1: NB2 Regression Effect Sizes for Predicting Reads]



AI-related content (CT1, the reference category) drew significantly more reads than posts on smart education (CT2, Exp(B) = 0.412, p = .004) or digital skills (CT4, Exp(B) = 0.323, p = .002). With the other variables held constant, a smart education post could expect only 41.2% of the reads of an AI post, and a digital skills post 32.3%. Questions put to readers (IF4) were the strongest positive predictor of readership. Each additional question multiplied the expected number of reads by 3.78 (p = .002). External links (IF1) worked the other way (Exp(B) = 0.156, p = .020), perhaps because sending readers to other sources takes engagement away from the platform.

The pattern for likes was similar and more pronounced. Posts on smart education (CT2, Exp(B) = 0.181, p < .001), infrastructure (CT3, Exp(B) = 0.544, p < .001), digital skills (CT4, Exp(B) = 0.060, p < .001) and industry-education integration (CT5, Exp(B) = 0.599, p = .001) all received significantly

fewer likes than AI posts. The cautionary style (MS3) was the strongest negative predictor (Exp(B) = 0.063, $p < .001$), which suggests that readers are much less willing to endorse a post that dwells on risk. Questions (IF4) were again the strongest positive predictor (Exp(B) = 3.89, $p = .002$).

On both measures AI content held an advantage over the other digital transformation themes. We call this an **'AI engagement premium'**, meaning that audiences read and endorse AI-related posts disproportionately often compared with posts on other aspects of digital transformation. The effect of asking questions is consistent with dialogic communication theory (Kent and Taylor, 1998). Even on a platform built for one-way broadcasting, a small interactive gesture seems able to raise engagement substantially.

The negative effect of cautionary messages on likes becomes more telling when read alongside the *xuanchuan* logic discussed above. Content about risk runs against institutional norms, and audiences also respond to it with fewer likes. The two pressures reinforce each other in what we call an **'engagement trap'**. Institutions publish what audiences want to see, and over time stakeholders are offered an ever narrower range of perspectives. If a cautionary post can expect about 94% fewer likes than an otherwise comparable informational post, communication staff have little reason to present a balanced view, even when policy documents call for attention to AI ethics and responsible use.

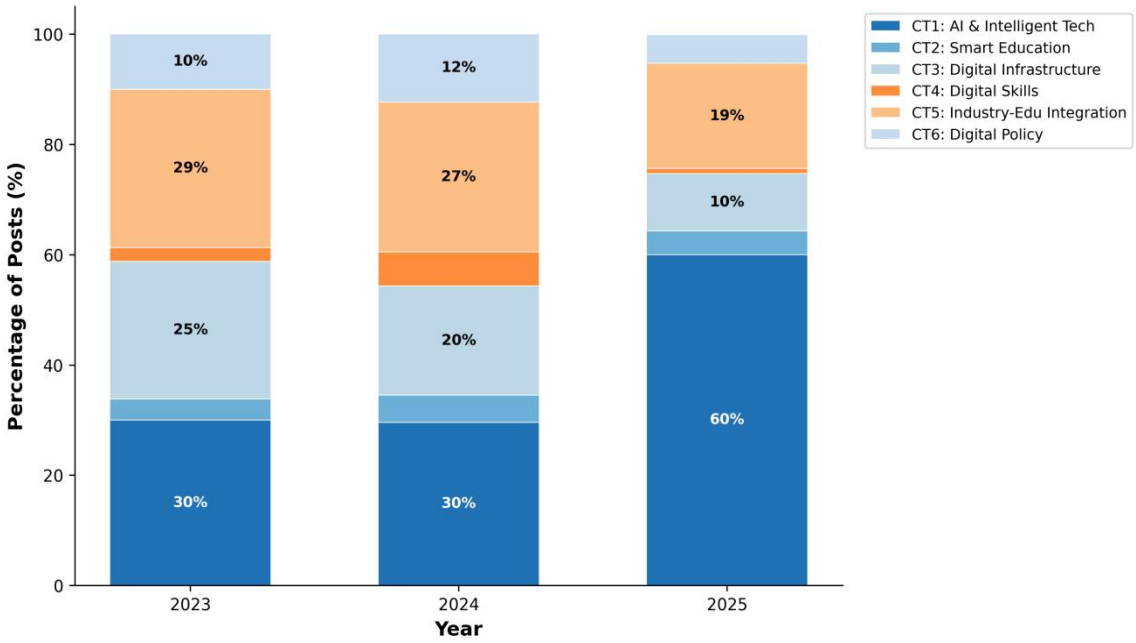
The trap also affects the quality of public discussion about digital transformation in vocational education more generally. When institutions steer clear of the challenges, risks and ethical questions raised by AI and digitalization, largely because such posts perform poorly, stakeholders are given an incomplete and possibly misleading picture. Students may come to expect more of AI than it can deliver. Parents may hear nothing about its implications for data privacy, and employers may receive no sign that a college takes responsible use of technology seriously. In effect the trap works as a kind of metric-driven self-censorship, and over time it may weaken the deliberative quality of what institutions say about technology. Communication scholars have voiced similar concerns about the way algorithmic metrics and the pursuit of engagement can distort organizational priorities (Caplan and boyd, 2018).

RQ3: Temporal trends (2023–2025)

The volume of digital transformation posts changed significantly over the period ($\chi^2 = 8.630$, $p = .013$). There were 80 such posts in 2023 and 81 in 2024, then 115 in 2025, an increase of 44%. Mean reads also differed by year ($F(2, 273) = 8.544$, $p < .001$), climbing from 1303 in 2023 to 1744 in 2024 and 2543 in 2025. Audience interest in the topic, it appears, was growing.

The clearest change over time concerned AI (CT1). As Figure 2 shows, AI accounted for roughly 30% of digital transformation posts in both 2023 and 2024 and then jumped to 60% in 2025. Several events fall within the same months. DeepSeek was released in January 2025, and April 2025 brought both the nine-ministry *Opinions on Accelerating the Digitalization of Education*, which called for faster development of large AI models for education (Ministry of Education et al., 2025), and Xi Jinping's call to 'promote AI education at all levels' (Xinhua News Agency, 2025). DeepSeek left the most visible mark. Colleges throughout the sample hurried to announce that they had adopted it, in posts such as 'AI empowers smart campus: Our university launches DeepSeek reasoning model!' (AI 赋能智慧校园新进展!天职重磅上线DeepSeek推理大模型!) and 'Jinhua Polytechnic University's custom DeepSeek + Wenxin large model has mastered 216 campus services!' (金职版 Deepseek+文心大模型，已学完 216 项校内服务!). Over the same period the share of digital infrastructure posts (CT3) fell from 25% in 2023 to 10.4% in 2025. The emphasis had moved from hardware to applications.

[Figure 2: Distribution of Content Themes by Year, 2023–2025]



Read through framing theory (Entman, 1993), the shift shows institutional discourse being reshaped as technological events, policy directives and competition between institutions interact. The colleges respond quickly to external cues. This is consistent with the environment in which Chinese educational organizations operate, where alignment with policy is both a cultural norm and a strategic necessity. DeepSeek posts spread to nearly all 20 institutions in early 2025, as each tried to show stakeholders that it had adopted the latest technology, and a single technological event was enough to set off a collective change in discourse. We see in this a form of **institutional isomorphism** (DiMaggio and Powell, 1983), in which vocational colleges arrive at similar communication strategies because they face the same environmental pressures. The process deserves closer investigation in future research.

Implications, limitations and conclusion

Theoretical implications. The study applies framing theory and dialogic communication theory to a context not examined before, the digital transformation discourse of vocational institutions on social media. Its three-dimensional framework can be reused. With some adaptation, the combination of content themes, message styles and interactive features should also work in comparative studies of other educational sectors and other cultural contexts. The 'AI engagement premium' and the 'engagement trap' add to current discussion of how platform metrics and institutional logics shape the way organizations communicate. Because institutional discourse responds so readily to events, following it over time also offers a way of tracking technology adoption, responsiveness to policy and shifts in national priorities for vocational education.

Our account of a double constraint, in which the *xuanchuan* logic of Chinese institutional communication combines with the architecture of WeChat, also avoids simple platform determinism, since the platform alone does not explain what colleges post. This connects research on Chinese institutional communication with broader debates about how platform affordances relate to the communication norms of organizations (Harwit, 2017).

Practical implications. The most immediate lesson for college leaders and communication staff concerns questions and other interactive elements. These had a large effect on engagement, yet only 4% of the posts in our corpus used them, which leaves a great deal of room for improvement. AI content attracts readers more or less by itself. The near-absence of posts on digital literacy, and of any cautionary voice, is a missed opportunity to show that an institution has thought carefully about technology and to win deeper trust from stakeholders. A college that discusses digital transformation in a balanced way, acknowledging its problems as well as its opportunities, may stand out among the many institutions saying much the same thing. The temporal results point to a related lesson. Policy windows and technological events are good moments for timely communication, but following the crowd tends to make the content of every college look alike.

Limitations and future research. The 20 institutions studied here all belong to the Double High-Level programme and so represent the top tier of Chinese vocational education. Extending the sample to lower-tier colleges would show whether differences in resources affect how institutions communicate about digital transformation. Our

coding was based on the titles and summaries retrieved by the data collection tool, and full-text analysis would allow finer sentence-level coding. Engagement was measured through reads and likes only; on platforms that release comment and share data, researchers could look more deeply into audience response. The study is also confined to China, and comparisons with vocational institutions in Germany, the U.K. or Southeast Asia could show how national cultures and policy environments shape digital transformation discourse. Content analysis captures what institutions publish but not what they intend, so interviews with communication staff would help to explain the decisions behind the patterns observed here. The official account system also has features of its own, especially its subscription-based push model and the limited public visibility of comments, which may limit how far our engagement findings can be generalized to other social media platforms.

To sum up, Chinese higher vocational institutions present digital transformation on WeChat mainly through AI and mainly in an informational style, with little attempt at interaction and almost no cautionary reflection. Asking readers a question had a strong effect on engagement, and dialogic strategies appear to have more to offer than colleges currently take from them. With AI's share of digital transformation posts having doubled in a single year, institutions face a choice. They can keep riding the AI wave in pursuit of engagement, or they can widen their repertoire to take in the pedagogical, ethical and literacy questions that a more mature conversation about digital transformation requires.

5. Statements and Declarations

Ethical considerations

The study used only publicly available posts from institutional WeChat official accounts. It involved no human participants and collected no personal or identifying information, so ethical approval was not required.

Consent to participate

Not applicable.

Consent for publication

Not applicable.

Data availability

The data come from publicly accessible posts on WeChat official accounts. The coded dataset is available from the corresponding author on reasonable request.

6. Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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References

Boettger, R. K., & Palmer, L. (2010). Quantitative content analysis: Its use in technical communication. *IEEE Transactions on Professional Communication*, *53*(4), 346–357.

Brady, A. (2008). *Marketing dictatorship: Propaganda and thought work in contemporary China*. Rowman & Littlefield.

Caplan, R., & boyd, d. (2018). Isomorphism through algorithms: Institutional dependencies in the case of Facebook. *Big Data & Society*, *5*(1), 1–12. https://doi.org/10.1177/2053951718757258

Capriotti, P., & Zeler, I. (2023). Analysing effective social media communication in higher education institutions. *Humanities and Social Sciences Communications*, *10*, 1–13. https://doi.org/10.1057/s41599-023-01888-7

Central Committee of the Communist Party of China & State Council. (2025). *Outline for building an education strong country 2024–2035 (Jiaoyu Qiangguo Jianshe Jianshe Guihua Gangyao [2024–2035 Nian])*. State Council of China.

Cyberspace Administration of China, National Development and Reform Commission, Ministry of Education, Ministry of Industry and Information Technology, Ministry of Public Security, State Administration for Market Regulation, & National Radio and Television Administration. (2023). *Interim measures for the administration of generative artificial intelligence services (Shengchengshi Rengong Zhineng Fuwu Guanli Zanxing Banfa)* (Order No. 15). Cyberspace Administration of China.

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, *48*(2), 147–160.

Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, *43*(4), 51–58.

Fairclough, N. (1992). *Discourse and social change*. Polity Press.

Gurland, J. (1959). Some applications of the negative binomial and other contagious distributions. *American Journal of Public Health*, *49*(10), 1388–1399.

Harwit, E. (2017). WeChat: Social and political development of China's dominant messaging app. *Chinese Journal of Communication*, *10*(3), 312–327.

Herbison, P., Robertson, M. C., & McKenzie, J. E. (2015). Do alternative methods for analysing count data produce similar estimates? Implications for meta-analyses. *Systematic Reviews*, *4*(1), 163. https://doi.org/10.1186/s13643-015-0151-2

Kent, M. L., & Taylor, M. (1998). Building dialogic relationships through the World Wide Web. *Public Relations Review*, *24*(3), 321–334.

Kent, M. L., & Taylor, M. (2002). Toward a dialogic theory of public relations. *Public Relations Review*, *28*(1), 21–37.

Kim, E., Sung, Y., & Kang, H. (2014). Brand followers' retweeting behavior on Twitter. *Computers in Human Behavior*, *37*, 18–25.

Landis, J. R., & Koch, G. G. (1977). An application of hierarchical kappa-type statistics in the assessment of majority agreement among multiple observers. *Biometrics*, *33*(2), 363–374.

Lombard, M., Snyder-Duch, J., & Bracken, C. C. (2002). Content analysis in mass communication: Assessment and reporting of intercoder reliability. *Human Communication Research*, *28*(4), 587–604.

Luther, C. A., & Zhou, X. (2005). Within the boundaries of politics: News framing of SARS in China and the United States. *Journalism & Mass Communication Quarterly*, *82*(4), 857–872.

Men, L. R., & Tsai, W. S. (2012). How companies cultivate relationships with publics on social network sites. *Public Relations Review*, *38*(5), 723–730.

Men, L. R., & Tsai, W. S. (2013). Beyond liking or following: Understanding public engagement on social networking sites in China. *Public Relations Review*, *39*(1), 13–22.

Ministry of Education. (2024). *National statistical report on educational development 2023 (2023 Nian Quanguo Jiaoyu Shiye Fazhan Tongji Gongbao)*. Ministry of Education of China. (Published October 2024).

Ministry of Education, Office of the Central Cyberspace Affairs Commission, National Development and Reform Commission, Ministry of Finance, Ministry of Science and Technology, & Ministry of Industry and Information Technology. (2025). *Opinions on accelerating the digitalization of education (Guanyu Jiakuai Tuijin Jiaoyu Shuzihua de Yijian)* (Jiaoban [2025] No. 3). Ministry of Education of China.

Ngai, C. S. B., & Jin, Y. (2016). The effectiveness of crisis communication strategies on Sina Weibo in relation to Chinese publics' acceptance of these strategies. *Journal of Business and Technical Communication*, *30*(4), 451–494.

Ngai, C. S. B., Einwiller, S., & Singh, R. G. (2020b). An exploratory study on content and style as driving factors facilitating dialogic communication between corporations and publics on social media in China. *Public Relations Review*, *46*(1), 101813. https://doi.org/10.1016/j.pubrev.2019.101813

Ngai, C. S. B., Singh, R. G., & Lu, W. (2023). Exploring the relationship between trust-building strategies and public engagement on social media during the COVID-19 crisis. *Health Communication*, *38*(10), 2139–2158.

Ngai, C. S. B., Singh, R. G., Lu, W., & Koon, A. C. (2020a). Grappling with the COVID-19 health crisis: Content analysis of communication strategies and their effects on public engagement on social media. *Journal of Medical Internet Research*, *22*(8), e21360. https://doi.org/10.2196/21360

Ngai, C. S. B., Yao, L., & Singh, R. G. (2022). A comparative analysis of the U.S. and China's mainstream news media framing of coping strategies and emotions in the reporting of COVID-19 outbreak on social media. *Discourse & Communication*, *16*(5), 572–597.

Scheufele, D. A., & Tewksbury, D. (2007). Framing, agenda setting, and priming: The evolution of three media effects models. *Journal of Communication*, *57*(1), 9–20.

Shahzad, M. F., Xu, S., An, X., & Asif, M. (2025). Are generative AI technologies transforming education for the 21st century? Research trends, challenges, and benefits. *SAGE Open*, *15*(1), 1–18. https://doi.org/10.1177/21582440251327645

Singh, R. G., & Ngai, C. S. B. (2024). Top-ranked U.S. and U.K.'s universities' first responses to GenAI: Key themes, emotions, and pedagogical implications. *Discover Education*, *3*, 115. https://doi.org/10.1007/s44217-024-00115-0

Sroka, C. J., & Nagaraja, H. N. (2018). Odds ratios from logistic, geometric, Poisson, and negative binomial regression models. *BMC Medical Research Methodology*, *18*(1), 112. https://doi.org/10.1186/s12874-018-0576-5

Sun, C., & Pratt, C. B. (2024). Industry-education partnerships in AI curriculum development for vocational training. *Journal of Education and Work*, *37*(2), 156–172.

Xinhua News Agency. (2025, April 26). *Xi Jinping stresses self-reliance and application orientation to promote the healthy and orderly development of artificial intelligence (Xi Jinping zai Zhonggong Zhongyang Zhengzhiju di Ershi Ci Jiti Xuexi shi Qiangdiao: Jianchi Zili Ziqiang, Tuchu Yingyong Daoxiang, Tuidong Rengong Zhineng Jiankang Youxu Fazhan)*. https://www.news.cn/politics/leaders/20250426/

63f5cde8f4b54e22ba35aa7ec7884b3a/c.html (Accessed November 5, 2026).

Yang, C., Fleischer, M., Yang, K., & Huang, Q. (2024). Discourse analysis of Chinese vocational universities based on multimodal framework of social semiotics. *Vocation, Technology & Education*, *1*(3), 1–15.

Yang, M., & Balazon, S. (2026). The use of artificial intelligence in higher vocational colleges in Sichuan, China. *Frontiers in Education*, *11*, 1796803. https://doi.org/10.3389/feduc.2026.1796803

Zhang, H. (2019). Research on the influence, service and ideological guidance function of WeChat official accounts of higher vocational colleges. In *Proceedings of ICAICTE 2019* (pp. 1–10). Atlantis Press.

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