

# A Multimodal Analysis of Standardized Knowledge Dissemination in Frontier Ethnic Institutions

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**Abstract:** *This study conducts a random sampling survey of 453 students from Yunnan Minzu University to explore the application of multimodal discourse analysis in the standardized dissemination of knowledge at frontier ethnic institutions. The findings reveal a significant preference among students for short videos that combine dynamic visuals with practical knowledge, underscoring the importance of visual effects and information utility. Additionally, students desire diverse content from standardized knowledge dissemination videos, including popular science, daily news, and career development. They prefer acquiring knowledge through various information sources. Most students also consider standardized knowledge to be closely related to their educational and daily lives. These insights are crucial for understanding and improving the dissemination of standardized knowledge in frontier ethnic institutions. The study highlights that dissemination strategies should integrate multimodal elements to enhance information appeal and meet diverse learning needs, offering useful references for future optimization of knowledge dissemination.*

**Keywords:** *multimodal discourse analysis; standardized knowledge; dissemination*

## 1. Introduction

With the advent of the digital era, traditional methods of knowledge dissemination are undergoing profound transformations. In frontier ethnic institutions, the dissemination of standardized knowledge is particularly crucial as it not only fosters students' professional skills but also serves as a bridge connecting local cultures to national development. However, the effectiveness of standardized knowledge dissemination is influenced by various factors, especially in the multicultural context of frontier ethnic institutions. Therefore, exploring effective strategies for disseminating standardized knowledge in such contexts is vital for improving educational quality and promoting the widespread application of knowledge. This study aims to analyze the methods and effectiveness of standardized knowledge dissemination within frontier ethnic institutions and to explore strategies for enhancing dissemination efficiency and quality, thereby providing theoretical support and practical guidance for improving educational practices and fostering regional development.

The theoretical foundation of multimodal discourse analysis lies in Systemic Functional Linguistics and Cognitive Linguistics, often viewed through the lenses of social semiotics and conceptual metaphor<sup>[1]</sup>. The founder of Systemic Functional Linguistics, Halliday, posited that language encompasses three metafunctions: the ideational function, which uses language to express various experiences; the interpersonal function, which uses language to engage in social interactions; and the textual function, which organizes language coherently and connects it with the context<sup>[2]</sup>. Additionally, Halliday and others developed context theory, asserting that context constrains the semantic potential of expression, rendering meanings more specific and clear. According to Systemic Functional Linguistics, language is a social sign with meaning potential<sup>[3]</sup>, and findings from language studies are applicable to other sign systems<sup>[4][5]</sup>. This is a crucial rationale for applying language-based evaluative theories to multimodal discourse analysis. In the realm of standardized knowledge dissemination, multimodal discourse analysis theory is particularly relevant. As multimedia technology advances, the dissemination of standardized knowledge is no longer confined to traditional text and oral language but encompasses images, sounds, and actions. These diverse modalities interact to construct the meaning of communication. In the multicultural environment of frontier ethnic institutions, utilizing multimodal discourse analysis can enhance our understanding of how to improve the effectiveness and appeal of standardized knowledge dissemination by integrating visual and auditory elements and adjusting dissemination strategies according to different cultural backgrounds, thereby making information transmission more accurate and effective.

## 2. Research Design

This study employs a questionnaire survey to investigate the status of standardized knowledge dissemination among students at Yunnan Minzu University, aiming to deeply explore their perceptions and attitudes toward standardized knowledge dissemination. A total of 453 valid questionnaires were collected. The questionnaire design focuses on comprehensiveness and specificity, ensuring accurate capture of students' understanding of and feedback on standardized knowledge. The content covers students' basic knowledge of standardized knowledge, their preferences for dissemination methods, and their recognition of its application. In terms of the survey population, the study primarily targets the student body of Yunnan Minzu University, a key provincial ethnic institution in the frontier region of Yunnan, which plays a crucial role in the socioeconomic development and ethnic unity and stability of Yunnan. The survey participants include students from various disciplines and academic levels. Specifically, among those surveyed, science students account for 15.9%, engineering 5.7%, medical 1.3%, arts 8.8%, agricultural sciences 0%, humanities 59.4%, and other disciplines 8.8%. Regarding academic level distribution, freshmen constitute the highest proportion at 66.4%, followed by sophomores 0.4%, juniors 12.4%, seniors 1.1%, and graduate students 19.6%. This sample composition comprehensively reflects the attitudes and perceptions of Yunnan Minzu University students from different disciplines and academic levels toward the dissemination of standardized knowledge.

## 3. Survey Results and Discussion

This study analyzes the findings from five perspectives: "Students' Preferences for the Features of Standardized Short Videos," "Specific Content Students Wish to Obtain from Standardized Knowledge Promotion Videos," "Students' Preferences for Following Standardized Knowledge-Related WeChat Video Channels," "Channels for Acquiring Standardized Knowledge," and "The Relevance of Standardized Knowledge to Students' Personal Learning and Life."

### 3.1 Students' Preferences for the Features of Standardized Short Videos

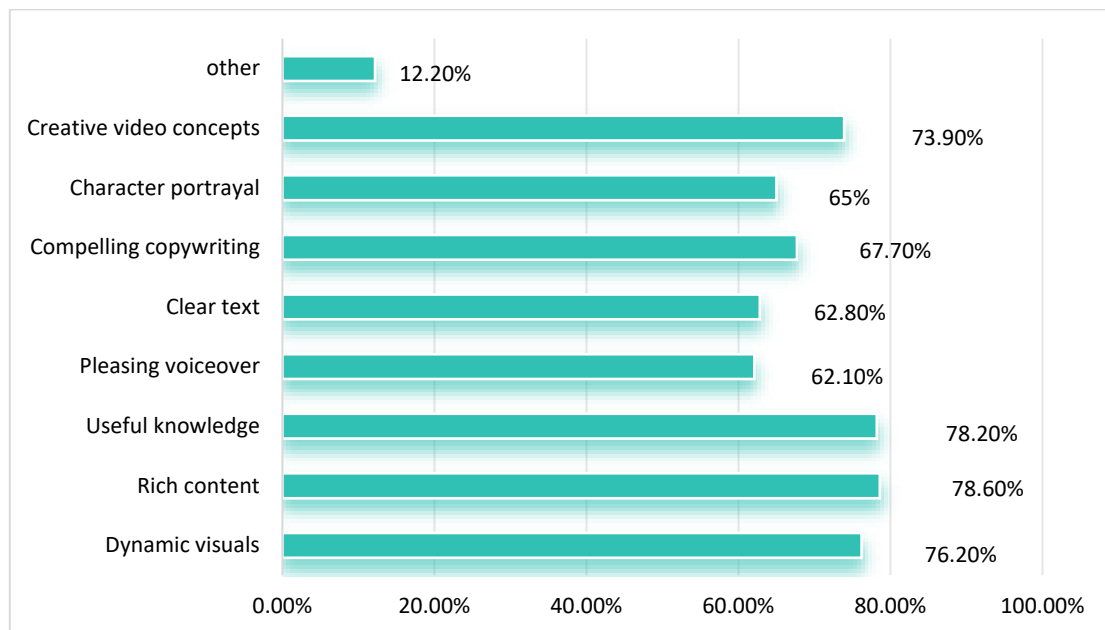


Figure 1: Students' Preferences for the Features of Standardized Short Videos

Figure 1 data indicates that the majority of students prefer features such as "Rich content" (78.6%) and "Useful knowledge" (78.2%). This finding suggests that students are inclined to seek short videos that provide in-depth and practical information, emphasizing the importance of information quality and utility for learning and engagement stimulation. Additionally, "Dynamic visuals" (76.2%) and "Creative video concepts" (73.9%) are also favored by a substantial number of students, reflecting a high regard for visual stimulation and innovative expressions. These preferences indicate that visual appeal and creative content play crucial roles in maintaining student attention and enhancing learning interest.

In contrast, "Pleasing voiceover" (62.1%) and "Clear text" (62.8%), while important, rank lower in student preferences. This may imply that although these elements are significant for understanding content, they are not the primary factors that attract students to watch. In designing standardized knowledge short videos, creators should focus on the substance and quality of content while incorporating dynamic visual effects and creative expression to enhance the video's appeal and educational impact. According to multimodal discourse analysis theory, the synergistic effect of these elements helps to create a richer and more effective learning experience, reinforcing information transmission and cognitive absorption in students. Therefore, in designing strategies for the dissemination of standardized knowledge, it is crucial to consider these multimodal elements comprehensively to improve the effectiveness of dissemination and student engagement in learning.

### 3.2 Specific Content Students Wish to Obtain from Standardized Knowledge Promotion Videos

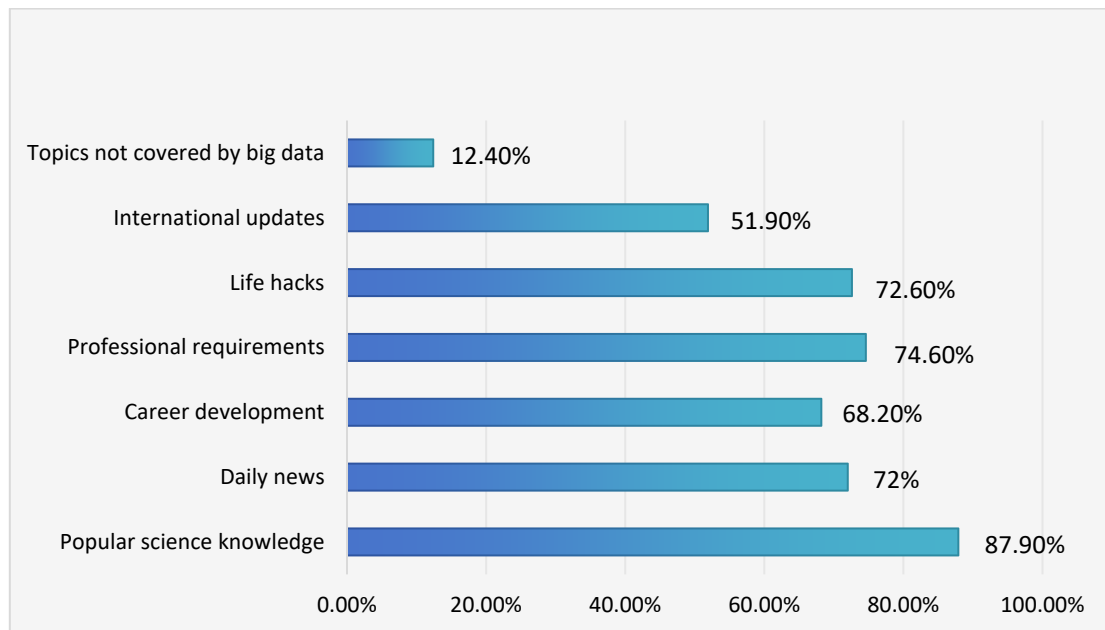


Figure 2: Specific Content Students Wish to Obtain from Standardized Knowledge Promotion Videos

Figure 2 data shows that the vast majority of students (87.9%) desire to obtain "Popular Science Knowledge" from such videos. This data underscores the strong demand among students for a deeper understanding of standardized knowledge, and reflects their preference for effective learning through videos. Additionally, "Professional Requirements" (74.6%) and "Life Hacks" (72.6%) also receive significant attention, indicating that students not only wish to deepen their professional understanding through videos but also seek to transform this knowledge into practical life applications. Notably, "Career Development" (68.2%) and "Daily News" (72%) also hold important places, demonstrating that students expect to acquire information from standardized knowledge videos that is practically helpful for their future career paths and everyday lives. In contrast, "International Updates" (51.9%) and "Content Not Pushed by Big Data" (12.4%) attract less interest, possibly implying that students prefer information more closely related to their daily lives and academic studies.

These data reveal that students' demands for standardized knowledge promotion videos extend beyond mere knowledge acquisition to include its application in professional learning, career development, and daily life. This finding has significant implications for the production of standardized knowledge promotion videos: creators should consider how to balance content between scientific popularization, professional knowledge, practical skills, and the latest updates to meet the diverse needs of students. According to multimodal discourse analysis theory, integrating rich visual and auditory elements can more effectively convey these contents, enhancing students' motivation to learn and the educational value of the videos. Therefore, in designing and producing such videos, it is essential to consider these student expectations comprehensively and utilize multimodal resources to create rich, diverse, and engaging learning experiences.

### 3.3 Students' Preferences for Following WeChat Video Channels Related to Standardized Knowledge

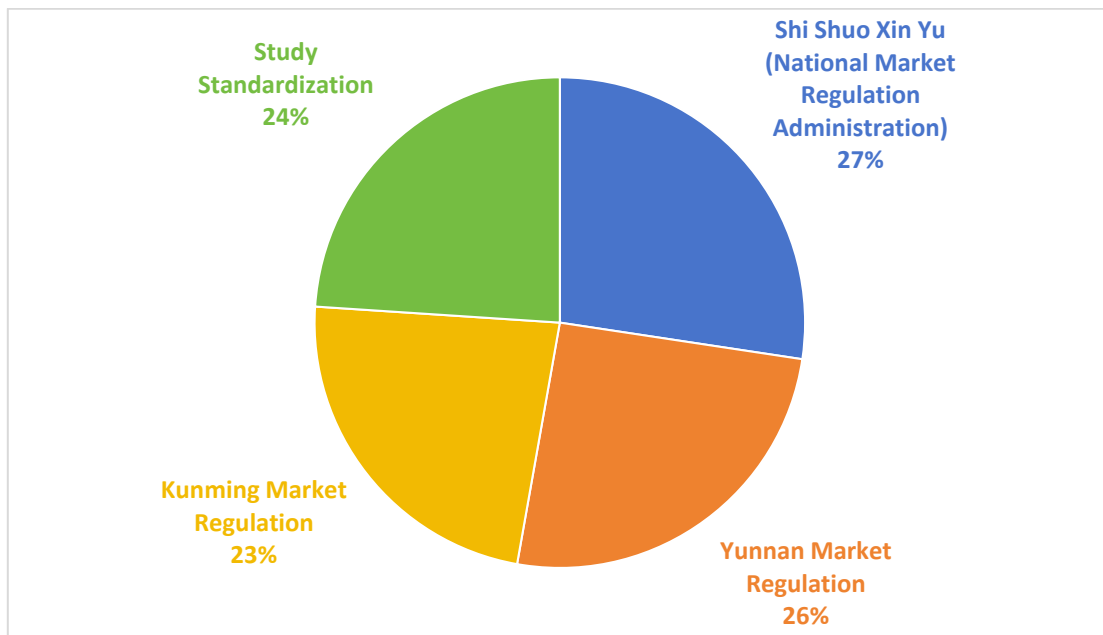


Figure3: Preferences for WeChat Video Channels Related to Standardized Knowledge

Figure 3 data indicates that indicate that "Shi Shuo Xin Yu (National Market Regulation Administration)" has the highest follow rate at 27%, followed by "Yunnan Market Regulation" (26%), "Study Standardization" (24%), and "Kunming Market Regulation" (23%). This outcome reveals a trend among students for diversifying their sources of information, as they tend to follow channels that range from macro national levels to specific local levels. "Shi Shuo Xin Yu," as an official source at the national level, attracts the highest level of attention, reflecting students' high regard for authoritative sources of information. It is likely considered an important channel for acquiring the latest and most authoritative standardized policies and updates. Local channels like "Yunnan Market Regulation" and "Kunming Market Regulation" also receive considerable attention, possibly because these channels provide standardization knowledge that is more regionally characteristic and practically guiding. Additionally, the attention given to "Study Standardization" indicates that students are interested not only in official policies but also in accessing more practical standardized learning resources.

Based on these findings, to enhance the efficiency and quality of standardized knowledge dissemination in minority colleges and universities at the border regions, it is recommended that educators and content creators adopt multimodal communication strategies that integrate visual, textual, and auditory modes to enhance the attractiveness and educational effect of the content. Moreover, during content creation, attention should be paid to the multi-level integration of information, including macro-level national policies and specific local practices, ensuring that educational resources are both authoritative and practical. Furthermore, strengthening interactive and feedback mechanisms on platforms such as WeChat video channels, such as introducing interactive question and answering and polls, can increase student engagement and interest in learning. By implementing these measures, not only can a broader range of learners be more effectively covered, but also the dissemination of standardized knowledge and the depth of students' understanding can be improved, thereby enhancing students' professional competencies and overall abilities.

### 3.4 Channels for Acquiring Standardized Knowledge

Figure 4 data indicates that short videos, with a popularity rate of 75.6%, have become the most favored channel for information, followed closely by WeChat official accounts at 72.5%. This trend underscores the significant role that digital media plays in the dissemination of standardized knowledge, reflecting a shift in the information acquisition habits of the current student body towards digitalization and visualization. The advantage of short videos and WeChat official accounts lies in their ability to present complex standardized knowledge in an intuitive and comprehensible form, while enhancing the learning experience with visual elements and interactivity.

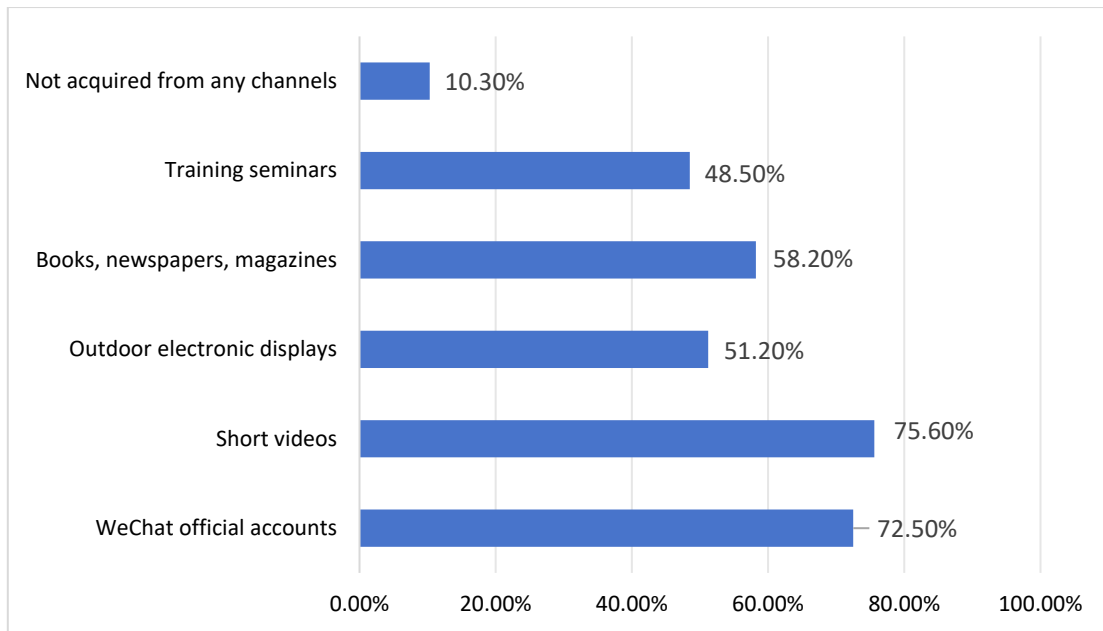


Figure 4: Channels for Acquiring Standardized Knowledge

Traditional sources such as books, newspapers, and magazines, holding a substantial share of 58.2%, continue to be vital channels for knowledge acquisition. They typically provide more systematic and in-depth content, suitable for students who require deep learning and research. Outdoor electronic displays (51.2%) and training seminars (48.5%), although less prevalent, reflect a demand among students for diverse learning methods. Outdoor displays usually present information in concise visual formats, suitable for communicating brief standardized knowledge points, while training seminars offer face-to-face learning opportunities that facilitate a deeper understanding of complex concepts.

From the perspective of multimodal discourse analysis, these data reflect the roles of different modalities in the dissemination of standardized knowledge. The visual and auditory elements of digital media attract students' attention and convey information in an accessible manner, while traditional media focus on providing thorough and systematic content. This suggests that dissemination strategies for standardized knowledge should fully utilize multimodal resources, combining the strengths of both traditional and modern media to meet the diverse learning needs and preferences of students. By integrating various communication methods such as graphics, videos, and oral presentations, it is possible to more effectively reach different types of learners, increasing the accessibility and comprehension of standardized knowledge. Therefore, for frontier ethnic colleges and universities, developing standardized knowledge dissemination strategies that incorporate multimodal elements will help enhance the quality of education and the effectiveness of student learning.

### 3.5 The Relevance of Standardized Knowledge to Students' Personal Learning and Life

Figure 5 data shows that a majority of students (72.6%) believe that the relationship between standardized knowledge and their personal learning and life is "Very closely" connected, indicating that in frontier ethnic colleges, standardized knowledge is widely considered to be intimately linked with students' daily learning and living. This perception likely stems from the practical role of standardized knowledge in enhancing learning efficiency, understanding professional standards, and adapting to modern societal demands. Only a minority of students view this relationship as "Moderate" (22.3%) or "Not closely" (1.8%), which may be related to their specific academic backgrounds or personal experiences. From this, it is evident that most students recognize the significant impact of standardized knowledge on the development of their professional skills and the improvement of their daily lives. This widespread acknowledgment underscores the necessity of emphasizing the importance of standardized knowledge in educational practices, especially in a multimodal teaching environment where elements like visuals and audio enrich instructional content, allowing students to more comprehensively understand and apply this knowledge in various aspects.

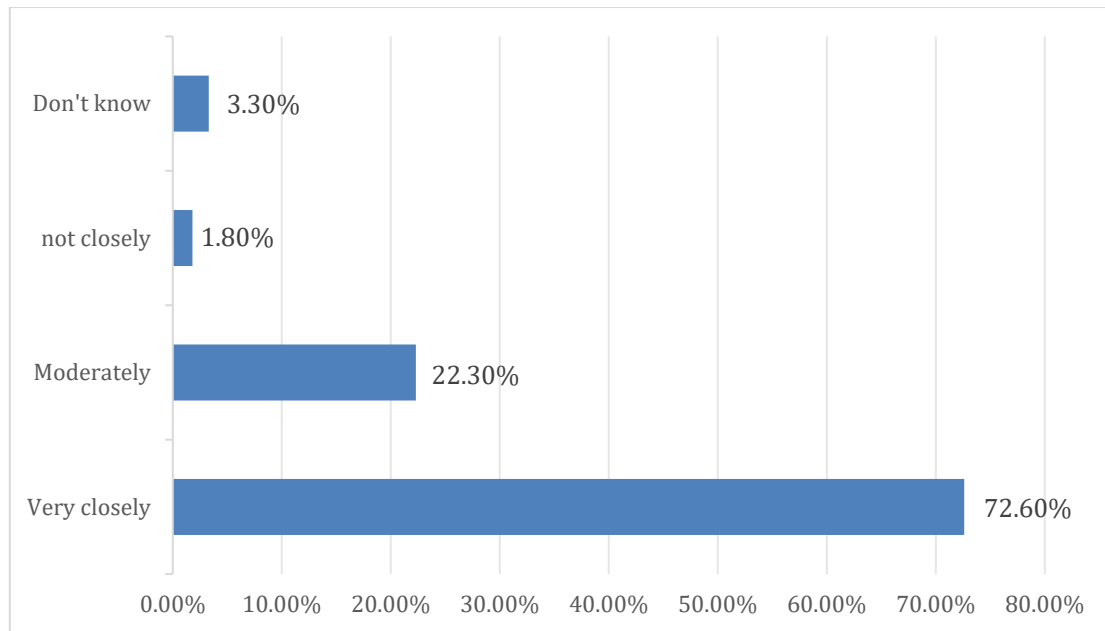


Figure 5: The Relevance of Standardized Knowledge to Students' Personal Learning and Life

In response to the survey results, where most students from Yunnan Minzu University consider the relationship between standardized knowledge and their personal learning and life as close, educators are advised to emphasize the practical connections between standardized knowledge and students' daily life and professional learning when designing instructional and dissemination content. For instance, through case studies and demonstrations of practical applications, showing how standardized processes can optimize daily operations and enhance work efficiency can help students understand how this knowledge impacts their professional development and quality of life. Furthermore, educators are encouraged to utilize multimodal teaching resources, such as video tutorials, interactive simulations, and graphical interfaces, which can make the learning of standardized knowledge more intuitive and engaging. By offering content-rich in practicality and diverse in teaching methods, students' motivation can be boosted, enabling them to more profoundly grasp the value and application of standardized knowledge, and more effectively apply what they have learned to real-life and professional contexts.

#### 4. Comprehensive Analysis

In a detailed exploration of multimodal discourse analysis applied to the dissemination of standardized knowledge, the research reveals that this theoretical framework is crucial for understanding student preferences and optimizing information dissemination. Specifically, analyses of "Student Preferences for Features in Standardization Short Videos," "Specific Content Students Wish to Obtain from Standardization Knowledge Promotional Videos," "Student Preferences for Standardization-Related WeChat Video Accounts," "Channels for Acquiring Standardization Knowledge," and "The Close Relationship between Standardization Knowledge and Students' Personal Learning and Life" provide deeper insights into how multimodal elements influence the reception and cognition of standardized knowledge.

From the analysis of "Student Preferences for Features in Standardization Short Videos," a strong preference for dynamic visuals and useful knowledge was observed, highlighting that visual elements and content practicality are key factors in attracting students' attention in the dissemination of standardized knowledge. This suggests that the design of materials for disseminating standardized knowledge should focus on innovative visual effects and practical information content to enhance students' learning motivation and knowledge absorption efficiency. The analysis of "Specific Content Students Wish to Obtain from Standardization Knowledge Promotional Videos" reveals a demand for educational popularization and daily news, indicating that the dissemination of standardized knowledge should not only focus on popularizing theoretical knowledge but also on its practical application in everyday life to enhance the practical value and attractiveness of the knowledge. When analyzing "Student Preferences for Standardization-Related WeChat Video Accounts," it was found that students tend to obtain information from multiple channels, emphasizing that a multi-channel strategy should be used in the dissemination of standardized knowledge, covering different levels of information sources

to meet diverse student needs. The analysis of "Channels for Acquiring Standardization Knowledge" shows that students have preferences for both traditional and modern media, indicating that dissemination strategies should combine the advantages of both, integrating text, video, and oral explanations to provide a comprehensive learning experience for students.

Finally, the analysis of "How Close is the Relationship between Standardization and Personal Learning and Life?" reveals that a high percentage (72.6%) of students believe that standardized knowledge is closely related to their daily lives and learning activities, emphasizing the practical application and importance of standardized knowledge in students' lives and validating the effectiveness of multimodal teaching methods, especially in enhancing students' awareness of the practicality of educational content.

In summary, the theory of multimodal discourse analysis plays a crucial role in understanding students' learning needs and optimizing the dissemination strategies for standardized knowledge. By fully utilizing a variety of modal elements, including visual, auditory, and textual components, this approach can effectively cater to different types of learners, enhancing the effectiveness of standardized knowledge dissemination and increasing student engagement. The strategy of integrating multiple modal elements not only enhances the attractiveness and comprehensibility of information but also provides an effective way to meet the diverse learning needs of students. Therefore, when designing and implementing the dissemination of standardized knowledge, it is important to focus on the integration of multimodal elements to enhance the learning experience and the effectiveness of knowledge absorption. Through such methods, the efficiency and quality of standardized knowledge dissemination in frontier ethnic colleges can be significantly improved, thereby fostering the overall development of students' abilities and enhancing their professional competence.

## 5. Conclusion

This research, through a deep dive into multimodal discourse analysis, has explored the acceptance and preferences of students at frontier ethnic colleges towards the dissemination of standardized knowledge. The findings highlight the importance of visual effects and content practicality as students show diverse demands for short video content. This suggests that in designing materials for the dissemination of standardized knowledge, complex standardized concepts should be presented in an easy-to-understand and engaging manner. Additionally, students' varied choices for different information sources reflect a demand for depth and breadth in content, indicating that dissemination strategies should consider a combination of various information channels. Moreover, students' preferences for different dissemination channels indicate that combining the advantages of traditional and modern media to provide a more comprehensive learning experience can be beneficial.

In light of these findings, future research and practice should focus on developing multimodal content, exploring and utilizing multiple information sources, including digital and traditional media, to meet students' needs for various types of information. Additionally, developing personalized learning paths and materials to accommodate different learning styles and needs, and encouraging interdisciplinary research collaborations to integrate theories and practices from education, psychology, communication, and more, can lead to a more comprehensive understanding of the application effects and potential impacts of multimodal discourse analysis in the dissemination of standardized knowledge. Ongoing feedback collection and assessment of multimodal communication strategies will be essential for timely adjustments and optimization of teaching methods and materials, with a particular focus on students' cultural backgrounds to develop education content that aligns with students' cultural characteristics and cognitive habits, enhancing the acceptability and relevance of standardized knowledge. By implementing these suggestions, future research and practice can more effectively enhance the dissemination efficiency and quality of standardized knowledge at frontier ethnic colleges, providing students with a richer and more effective learning experience. This will contribute to improving students' professional competence, promoting social development, and preserving cultural heritage in frontier regions.

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