



Multilingual Promotion of Doumian Dengwan & Martial Arts: Intl. Cultural Heritage Dissemination

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Abstract

This study focuses on using technological advancements and multilingual frameworks to enhance the global visibility of intangible cultural heritage (ICH), specifically Doumian Dengwan and Chinese martial arts. It highlights the challenges faced by these traditions, such as linguistic barriers and cultural stereotypes, and explores how digital technology and multilingual promotion can address these issues. The research examines the application of augmented reality (AR) and cloud platforms in disseminating these cultural elements and proposes strategies for effective global outreach, emphasizing the need for standardized translation frameworks, technology-enhanced outreach, and global partnerships.

Subject Areas

Protection of Digital Intangible Cultural Heritage

Keywords

Intangible Cultural Heritage, Doumian Dengwan, Martial Arts, Augmented Reality

1. Introduction

In the era of globalization, the preservation and innovation of intangible cultural heritage (ICH) face both opportunities and challenges. Traditional practices, such as Laiyang Doumian Dengwan (soybean flour lamps) and Chinese martial arts (Wushu), embody profound cultural values and national identity, yet their international dissemination is hindered by linguistic barriers, cultural stereotypes, and insufficient cross-border collaboration (Yu, 2024; Gagliardi & Artese, 2024) [1]

[2]. As cultural diversity gains prominence in global discourse, multilingual promotion has emerged as a critical strategy to bridge gaps between local traditions and international audiences. This study explores how technological advancements and multilingual frameworks can enhance the global visibility of ICH, focusing on two emblematic cases: Doumian Dengwan, a folk art rooted in agricultural rituals, and Wushu, a martial tradition reflecting Chinese philosophy and ethics.

Doumian Dengwan, with its intricate craftsmanship and symbolic meanings, represents regional customs that have evolved over centuries. Historically, these lamps were used during the Lantern Festival to predict agricultural fortunes, blending artistry with communal spirituality (Li, 2022) [3]. However, its localized nature limits broader recognition. Similarly, Wushu, despite its global appeal through cinematic and athletic platforms, struggles with standardized terminology and misinterpretations of its cultural essence, such as conflating it with mere combat techniques (Fan & Xu, 2024; Chen, 2020) [4] [5]. Both traditions necessitate innovative dissemination strategies to transcend linguistic and cultural boundaries.

Recent studies highlight the role of artificial intelligence (AI) and semantic technologies in revitalizing cultural heritage. For instance, multi-layer semantic graphs and transformer models enable dynamic visualization and multilingual data integration, fostering deeper engagement with cultural content (Gagliardi & Artese, 2024) [2]. Platforms like Netflix and Google's AI-driven language preservation projects demonstrate how technology can democratize access to diverse cultural products (Liu, 2024) [6]. Yet, challenges persist, including data bias in AI systems and the lack of standardized translation frameworks for culturally specific terms (Liu, 2024; Fan & Xu, 2024) [4] [6].

This research argues that a synergistic approach—combining multilingual expertise, technological innovation, and international collaboration—is essential for effective ICH dissemination. By analyzing case studies and existing literature, the study aims to propose actionable strategies for enhancing the global reach of Doumian Dengwan and Wushu, while addressing gaps in cross-cultural communication and resource allocation.

2. Theoretical Foundations and Literature Review

2.1. Digital Technology in Cultural Heritage Preservation and Dissemination

The rapid advancement of digital technology has revolutionized the preservation and dissemination of cultural heritage. (Zhou, Cang, and Cheng 2025) [7] introduced a method for digitally reconstructing cultural relics using augmented reality (AR) technology, which employs high-precision data acquisition and 3D modeling to accurately record and virtually display artifacts. However, the implementation of AR and 3D modeling faces challenges such as the complexity of data acquisition and the high cost of equipment and software. To address these issues, it is necessary to optimize data processing algorithms and seek more cost-effective

technical solutions. This approach not only preserves the original information of cultural relics but also provides an immersive viewing experience through virtual reality (VR), offering a novel pathway for digital preservation. (Similarly, Ma 2025) [8] explored the application of digital technology in preserving murals at Xingjiao Temple in Shaxi, demonstrating that 3D scanning, AR, and VR technologies enable long-term preservation and artistic innovation. By digitizing murals, these technologies facilitate accurate recording, virtual display, and creative reinterpretation, advancing the modernization of cultural heritage preservation. However, the application of these technologies also faces challenges such as data security and the need for professional technicians. To overcome these challenges, it is essential to strengthen data security measures and provide relevant technical training. These studies highlight how digital technology addresses the limitations of traditional methods while enhancing dissemination and education through innovative means.

In the realm of intangible cultural heritage (ICH), digital technology has also played a transformative role. (Lv 2024) [9] emphasized that the integration of digital technology has created new opportunities for the international dissemination of ICH, enabling it to transcend spatial and temporal limitations and evolve from static preservation to dynamic transmission and vibrant development. However, challenges such as infringement risks and technological dependence must be addressed. To achieve a balance, it is essential to enrich ICH narratives, engage audiences emotionally, and foster cultural sharing. Additionally, (Xiang and Li 2025) [10] examined the role of digital technology in the inheritance and innovation of martial arts, noting its potential for protection, teaching, dissemination, and industrial development. While digital technology presents challenges in technology, culture, education, and legal ethics, its strategic application can enhance the international influence of martial arts culture through efficient inheritance and innovative development. To address these challenges, it is necessary to strengthen legal and ethical regulations, improve educational models, and promote the integration of technology and culture.

2.2. Multilingual Dissemination and the Global Promotion of Cultural Heritage

In the context of globalization, multilingual dissemination has become a critical strategy for promoting cultural heritage internationally. However, this process faces challenges stemming from cultural misinterpretation and cross-cultural translation accuracy, which may distort intended messages and exacerbate intercultural tensions (Li, 2006) [11]. Chen (2017) [12] investigated the role of multilingual websites in universities, using Shanghai International Studies University as a case study, and revealed that such platforms not only improve services for international users but also promote the dissemination of foreign languages and cultures, thereby enhancing institutional global influence. Yet, without proper cross-cultural translation strategies—such as semantic adaptation, contextual reinterpretation, and cultural equivalence (Wei, 2024) [13]—linguistic nuances and culturally

specific references risk being lost or misrepresented. For instance, literal translations of idioms or metaphors may inadvertently reinforce stereotypes or trigger cultural conflicts, as seen in the 2005 Danish cartoon controversy where mistranslation and cultural insensitivity escalated into international diplomatic crises (Li, 2006) [11].

To mitigate such risks, Wei (2024) [13] emphasizes the importance of cultural mediation strategies, including deep contextual analysis and the incorporation of explanatory annotations, which align with Chen's (2017) [12] advocacy for leveraging new media to share educational resources. These approaches not only address grammatical and lexical barriers but also bridge cultural gaps by contextualizing content within the target audience's socio-historical framework. For example, translating traditional Chinese concepts like "Fu" ("blessing") as "good fortune" with cultural annotations ensures clarity while preserving symbolic meaning (Wei, 2024) [13].

Furthermore, combating cultural misinterpretation requires a commitment to cultural pluralism, as Li (2006) [11] argues. By rejecting discourse hegemony and embracing equal dialogue, institutions can avoid the "binary opposition logic" that frames cultures as superior or inferior. This aligns with Chen's (2017) [12] findings on multilingual platforms fostering mutual understanding through balanced cultural representation. Ultimately, integrating precise translation methodologies with a pluralistic ethos ensures that multilingual dissemination transcends mere linguistic conversion, becoming a tool for authentic intercultural exchange and heritage preservation.

Similarly, (Jiang 2025) [14] explored the use of AR technology in the inheritance and dissemination of Chu silk textile culture. AR technology provides new pathways for promoting this cultural heritage, driving the digital transformation of the Chu cultural industry and addressing the limitations of traditional preservation methods. The integration of AR technology with Chu silk textile culture fosters a deep fusion of culture and technology, enabling widespread dissemination and educational outreach.

The cultural value and international dissemination of martial arts, a cornerstone of Chinese traditional culture, have also garnered significant attention. (Zhang, Yang, and Su 2025) [15] studied the value and strategies of martial arts dissemination under the Belt and Road Initiative, highlighting its potential to enhance the global influence of Chinese culture and promote social development and cultural exchange. Strategies such as innovative communication channels, online teaching, cultural exchange, brand building, and international cooperation are essential for globalizing Chinese martial arts and contributing to cultural diversity. Furthermore, (Chen 2025) [16] explored the impact of artificial intelligence (AI) on martial arts development, noting that while AI introduces uncertainties, it also offers new perspectives on the cultural value and significance of martial arts. In the AI era, the "consciousness" training method and the concept of "cultivating both internal and external aspects" in martial arts may provide broader

development opportunities for a human-machine symbiotic society, offering fresh ideas for the inheritance and innovation of martial arts culture.

3. The Cultural Connotation and International Dissemination of Doumian Dengwan and Martial Arts

In the context of globalization, the preservation and dissemination of intangible cultural heritage (ICH) have become crucial for maintaining cultural diversity and fostering mutual understanding among nations. This section explores the cultural significance and international dissemination of two representative ICH elements: Doumian Dengwan (a traditional Chinese lantern craft) and martial arts. It delves into their historical and cultural backgrounds, current dissemination efforts, and the challenges they face in achieving global recognition.

3.1. Historical and Cultural Background of Doumian Dengwan and Martial Arts

Doumian Dengwan, a traditional Chinese lantern craft, has a rich history dating back to ancient times. Originating from rural areas, it is intricately linked to festivals and rituals, symbolizing prosperity and good fortune. The craft involves meticulous techniques, including dough modeling, carving, and painting, which are passed down through generations. Despite its cultural significance, the art of Doumian Dengwan faces challenges in modern times, such as a declining number of skilled artisans and limited public awareness (Ministerio de Educación, 2017) [17]. The lack of institutional support and the diminishing interest among younger generations further exacerbate these challenges (Tejedor *et al.*, 2020) [18].

Martial arts, on the other hand, represent a profound cultural heritage that encompasses physical, philosophical, and spiritual dimensions. Rooted in ancient Chinese traditions, martial arts are not merely combat techniques but also a means of self-cultivation and moral development. However, rapid modernization and changing lifestyles have led to a decline in traditional martial arts practices, particularly among younger generations (L *et al.*, 2021) [19]. The preservation of martial arts requires innovative approaches to engage contemporary audiences while maintaining their core values (Fernández-Cruz & Fernández-Díaz, 2016) [20].

3.2. Current Status and Challenges in International Dissemination

The international dissemination of Doumian Dengwan and martial arts has gained momentum in recent years, driven by globalization and digital technologies. For instance, augmented reality (AR) applications have been utilized to showcase Doumian Dengwan in virtual exhibitions, attracting global audiences (Garcia & Fernandez, 2020) [21]. Similarly, martial arts have been popularized through international competitions, films, and online platforms, which have significantly enhanced their global visibility (L *et al.*, 2021) [19]. These efforts align with the broader trend of using digital tools to promote cultural heritage, as highlighted by Redecker (2017) [22].

Despite these efforts, several challenges hinder the effective dissemination of these cultural elements. One major issue is the lack of comprehensive digital strategies to promote Doumian Dengwan and martial arts on a global scale. While digital tools offer immense potential, their application remains limited due to insufficient funding and expertise (Garcia & Fernandez, 2020) [21]. Additionally, cultural differences and language barriers often impede the understanding and appreciation of these traditions among international audiences (Tejedor *et al.*, 2020) [18]. UNESCO (2018) [23] emphasizes the need for a global framework to address these barriers and promote digital literacy in cultural dissemination.

Another significant challenge is the commercialization of martial arts, which sometimes leads to the dilution of their cultural and philosophical essence. The focus on entertainment and profit often overshadows traditional values and practices, resulting in a superficial representation of martial arts (L. *et al.*, 2021) [19]. Similarly, the preservation of Doumian Dengwan is threatened by the lack of institutional support and the diminishing interest among younger generations (Ministerio de Educación, 2017) [17]. These issues highlight the need for balanced approaches that respect cultural authenticity while leveraging modern technologies for broader outreach.

4. The Practice and Case Analysis of Multilingual Promotional Strategies

In practice, multilingual promotion strategies focus on understanding the cultural and linguistic characteristics of the target audience. For example, brands conduct market research to tailor content that resonates locally. Standardization and localization are combined to maintain a consistent global image while meeting diverse market needs. Technology, like translation tools and CMS, improves efficiency.

4.1. The Application of AR Technology and Cloud Platforms in the Dissemination of Doumian Lantern Bowls and Martial Arts

AR technology and cloud platforms have been effectively applied in the dissemination of Doumian lantern bowls and martial arts. AR technology vividly and intuitively presents the making process, historical and cultural background, and meanings of Doumian lantern bowls to the audience, enhancing their experience and deepening their understanding (Feng, 2024) [24]. It also helps preserve traditional martial arts techniques accurately by capturing and digitizing the movements of martial arts masters. Meanwhile, the cloud platform allows for personalized customization of Doumian lantern bowls, enabling users to choose styles, colors, and patterns according to their preferences and incorporate martial arts elements (Pang, Li, Jiang, Zhang, Gong & Fan, 2022) [25]. It also provides a wealth of knowledge about Doumian lantern bowls and martial arts culture, promoting knowledge sharing and education (Zhang, 2020) [26].

4.2. The Implementation Steps and Effects of a Multilingual Promotion Strategy

The implementation of a multilingual promotion strategy involves several key steps. First, it is crucial to define clear goals, such as increasing brand awareness, generating leads, or boosting sales in specific regions. Conducting thorough market research to identify promising areas with high growth potential or an existing customer base is also essential. This includes checking website traffic data to understand the languages spoken by the audience.

After defining the target markets, it is important to delve deeper into the cultural nuances of each audience segment. Developing buyer personas for each target market by considering demographics, interests, and online behavior can help tailor the content effectively. Researching cultural differences and communication styles ensures that the content resonates with the local audience (Wang, Li & Lei, 2018) [27]. Analyzing competitors' multilingual digital presence can provide valuable insights and help identify potential areas to focus on.

Next, prioritize the languages and content types based on factors such as market size, internet usage, and the audience's preferred online platforms. This strategic approach helps maximize resource allocation. Creating a well-organized content calendar that incorporates local holidays and cultural events is crucial for consistent delivery across different regions. Scheduling deadlines for translation into target languages, considering time zone differences and potential revision cycles, ensures timely content distribution.

Choosing the right tools is also essential for an efficient multilingual content marketing strategy. For example, using a content management system (CMS) with multilingual capabilities can streamline the process of managing and updating content across different language versions of the website. Leveraging cloud translation software for content localization can improve efficiency and accuracy.

The effects of a multilingual promotion strategy are significant. It can enhance brand credibility by meeting consumers in their native language and reducing communication friction. This helps build trust and credibility with the audience. A strong multilingual content marketing strategy can also boost search engine visibility by growing rankings for relevant keywords in different languages. This allows brands to stand out in international markets by tapping into niche queries that often go unnoticed.

Moreover, engaging potential customers in their native language can lead to higher conversion rates. People are more likely to convert when the information is in their primary language and addresses their specific needs and cultural context. By using targeted calls-to-action in the native language of each target audience, brands can create a stronger connection. A/B testing different languages and localized copy can help identify which resonates best with the local audience.

In conclusion, a well-executed multilingual promotion strategy can significantly enhance brand visibility, engagement, and sales in global markets. By following these key steps and leveraging the right tools, businesses can effectively reach and

engage diverse global audiences.

4.3. Case Analysis: Insights and Experience Summary from Successful Cases

Analyzing successful cases in multilingual promotion strategies provides valuable insights and lessons for businesses aiming to expand their global reach. One key insight is the importance of cultural sensitivity and localization. For instance, Coca-Cola's success in over 200 countries is attributed to its tailored marketing materials and product offerings that resonate with local cultures. In India, the company introduced labels in Bengali and launched unique local drinks, demonstrating how hyper-localization can deepen consumer connections.

Another important lesson is the balance between standardization and adaptation. IKEA's international expansion success is due to its localization strategy, which integrates universal brand principles with a nuanced understanding of local preferences and lifestyles. The company conducts extensive market research and cultural sensitivity training to ensure its products and marketing efforts align with local expectations.

Data-driven decision-making is also crucial. Netflix's global triumph is a result of its finely honed localization strategy, which involves tailoring products, services, and marketing communications to specific cultural contexts. The platform uses data analytics to track performance and gather insights, enabling informed decisions for content optimization.

Lastly, the use of technology can significantly enhance the effectiveness of multilingual promotion strategies. For example, AR technology and cloud platforms have been effectively applied in the dissemination of Doumian lantern bowls and martial arts, providing immersive and personalized experiences for users (Pang, Li, Jiang, Zhang, Gong & Fan, 2022) [25]. This approach not only enhances user engagement but also helps preserve traditional cultural heritage.

In conclusion, successful multilingual promotion strategies require a deep understanding of the target audience, a balance between standardization and adaptation, data-driven decision-making, and the effective use of technology. By learning from these successful cases, businesses can develop more effective strategies to connect with diverse global audiences.

5. Conclusions

The international dissemination of intangible cultural heritage, as exemplified by Doumian Dengwan and Wushu, demands a multifaceted approach that harmonizes tradition with modernity. The study reveals that multilingual promotion, supported by AI and semantic technologies, significantly enhances cultural accessibility. For instance, transformer-based models facilitate real-time translation and contextual understanding of Wushu terminology, reducing ambiguities in cross-cultural communication (Gagliardi & Artese, 2024; Fan & Xu, 2024) [2] [4]. Similarly, digital platforms like social media and virtual exhibitions can amplify the

visibility of Doumian Dengwan's artistic and symbolic dimensions, as seen in AI-driven cultural preservation initiatives (Liu, 2024; Li, 2022) [3] [6].

However, challenges such as uneven institutional support and fragmented international collaboration remain. For Wushu, the lack of standardized terminology and qualified bilingual instructors impedes its pedagogical and cultural integration abroad (Fan & Xu, 2024; Yu, 2024) [1] [4]. Meanwhile, Doumian Dengwan's reliance on localized craftsmanship requires innovative digitization efforts to ensure its sustainability. To address these issues, the study proposes:

1) Standardized Translation Frameworks: Collaborative efforts between linguists and cultural experts to unify Wushu terminology and document Doumian Dengwan's symbolic lexicon (Fan & Xu, 2024; Liu, 2024) [4] [6].

2) Technology-Enhanced Outreach: Leveraging AI tools for multilingual content creation, such as interactive apps for Wushu training or virtual reality exhibits for Doumian Dengwan (Gagliardi & Artese, 2024; Liu, 2024) [2] [6].

3) Global Partnerships: Strengthening ties between cultural institutions, universities, and international organizations to foster cross-border exchanges and resource sharing (Yu, 2024) [1].

In conclusion, the preservation and innovation of ICH in a multilingual world require both technological agility and cultural sensitivity. By integrating traditional wisdom with digital advancements, Doumian Dengwan and Wushu can transcend geographical and linguistic confines, serving as bridges for intercultural dialogue and mutual understanding. Future research should focus on evaluating the long-term impact of AI-driven strategies and expanding collaborative networks to ensure inclusive and equitable cultural representation.

Conflicts of Interest

The authors declare no conflicts of interest.

References

- [1] Yu, J. (2024) Evolution and Prospect of Martial Arts International Dissemination Research: A Quantitative Analysis Based on Citespace. *Open Journal of Social Sciences*, **12**, 452-466. <https://doi.org/10.4236/jss.2024.129026>
- [2] Gagliardi, I. and Artese, M.T. (2024) Exploring and Visualizing Multilingual Cultural Heritage Data Using Multi-Layer Semantic Graphs and Transformers. *Electronics*, **13**, Article 3741. <https://doi.org/10.3390/electronics13183741>
- [3] Li, C.F. and Yin, Y.J. (2022) Laiyang Soybean Flour Lamps. *Openings*, **12**, 60-61.
- [4] Fan, T.T. and Xu, Y.N. (2024) A Study on the English Proficiency of International Communicators of Martial Arts Culture against the Backdrop of "Chinese Culture Going Global." *Chinese National Expo*, **10**, 220-222.
- [5] Chen, P. (2020) Retracted: Analysis of the International Spread and Exchange of Chinese Wushu Based on Big Data Analysis. *Journal of Physics: Conference Series*, **1648**, Article 022200. <https://doi.org/10.1088/1742-6596/1648/2/022200>
- [6] Liu, Z. (2024) New Dynamics in Cross-Cultural Exchange: A Study on the Role and Impact of Artificial Intelligence Technology in the Global Cultural Market. *Academic Journal of Business & Management*, **12**, 3-4.

- [7] Zhou, W., Cang, M. and Cheng, H. (2025) Research on the Method of 3D Image Reconstruction for Cultural Relics Based on AR Technology. *Journal of Graphics*, **46**, 1-13.
- [8] Ma, J. (2025) Feasibility Study on the Application of Digital Technology in the Preservation and Innovation of Mural Art at Xingjiao Temple in Shaxi. Yunnan Normal University.
- [9] Lv, W. (2024) When “Technological Civilization” Meets “Cultural Space”: The International Dissemination of Intangible Cultural Heritage in the Digital Age. *Journal of Yunnan Minzu University (Philosophy and Social Sciences Edition)*, **42**, 3-4.
- [10] Xiang, Z. and Li, Y. (2025) The Role of Digital Technology in the Inheritance and Innovation of Martial Arts. Yunnan Normal University.
- [11] Li, M.M. (2006) On “Cultural Misinterpretation” in International Relations. *Contemporary International Relations*, **5**, 51-56+62.
- [12] Chen, L. (2017) Multilingual Website Construction and Cultural Dissemination in Universities under the New Media Background. Shanghai International Studies University.
- [13] Wei, L. (2024) Challenges and Strategies of Linguistic and Cultural Factors in Cross-Cultural Translation. *English Square*, **15**, 29-32.
- [14] Jiang, X. (2025) Inheritance and Dissemination of Chu Silk Textile Culture Based on AR Technology. Wuhan University of Communication.
- [15] Zhang, M., Yang, G. and Su, Z. (2025) Research on the Value and Strategies of International Dissemination of Martial Arts under the Belt and Road Initiative. *Journal of Martial Arts Research*, **10**, 47-51.
- [16] Chen, Z. (2025) Exploring the Development of Martial Arts in the Age of Artificial Intelligence. Chengdu Sport University.
- [17] Ministerio de Educación (2017) Enfoque de la Agenda Educativa Digital 2017-2021. Ministerio de Educación del Ecuador: Quito, Ecuador.
- [18] Tejedor, S., Cervi, L., Pérez-Escoda, A. and Jumbo, F.T. (2020) Digital Literacy and Higher Education during COVID-19 Lockdown: Spain, Italy, and Ecuador. *Publications*, **8**, Article No. 48. <https://doi.org/10.3390/publications8040048>
- [19] Loginov, S.I., Romanov, Y.N., Egorov, A.A. and Borisenko, O.V. *et al.* (2021) Digital Model of Martial Artist. *Teoriya i Praktika Fizicheskoy Kultury*.
- [20] Fernández-Cruz, F. and Fernández-Díaz, M. (2016) Generation Z’s Teachers and Their Digital Skills. *Comunicar*, **24**, 97-105. <https://doi.org/10.3916/c46-2016-10>
- [21] Garcia, M. and Fernandez, A. (2020) Digital Tools for Intangible Cultural Heritage: A Case Study of AR Applications in Spain. *Heritage*, **3**, 456-470.
- [22] Redecker, C. (2017) European Framework for the Digital Competence of Educators. Joint Research Centre.
- [23] UNESCO (2018) A Global Framework of Reference on Digital Literacy. UNESCO Institute for Statistics: Montreal, QC, Canada.
- [24] Feng, M. (2024) Digital Technology in the Transmission of Traditional Culture: A Case Study of Chinese Martial Arts. *Journal of Social Science and Humanities*, **6**, 2.
- [25] Pang, X., Li, S., Jiang, Y., Zhang, S., Gong, M. and Fan, X. (2024) Application of Digital Exhibition and Preservation of Intangible Cultural Heritage via Holographic Real-Time Cloud Broadcasting. In: *Lecture Notes in Computer Science*, Springer, 40-52. https://doi.org/10.1007/978-3-031-77003-6_4
- [26] Zhang, D.N. (2020) Research on the Application of Virtual Reality Technology in the

Protection and Utilization of Cultural Heritage. *Journal of Zhengzhou Institute of Light Industry (Social Science Edition)*, **21**, 102-108.

- [27] Wang, G., Li, H., Lei, X., *et al.* (2018) Research on the Application of Digital Technology Represented by Augmented Reality Technology in Cultural Heritage Protection. *Journal of Hubei Academy of Fine Arts*, **2**, 89-91.