RESEARCH ON THE INTERNATIONAL DISSEMINATION OF TANG POETRY FROM THE PERSPECTIVE OF DIGITAL LANGUAGE SERVICES

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Abstract: In the current era, where globalization and digitalization are intricately intertwined, Tang poetry, a treasure of ancient Chinese literature and culture, faces unprecedented opportunities and challenges in its international dissemination. This paper aims to explore how digital language services can become a new engine for the international dissemination of Tang poetry. By constructing a cross-cultural data analysis platform, optimizing the Tang poetry translation tool system, innovating language service talent cultivation models, and implementing multi-modal dissemination strategies, the paper seeks to achieve the precise, efficient, and widespread dissemination of Tang poetry. The paper not only outlines the general landscape of the international dissemination of Tang poetry but also delves deeply into the application value and practical pathways of digital language services in this process, providing new perspectives and approaches for theoretical research and practical exploration in the international dissemination of Tang poetry.
Keywords: Digital language services; Tang poetry; International dissemination; Cross-cultural; Talent cultivation

1. INTRODUCTION

The report of the 20th National Congress of the Communist Party of China emphasizes the need to uphold the stance of Chinese culture, refine and showcase the spiritual symbols and cultural essence of Chinese civilization, accelerate the construction of a Chinese discourse and narrative system, and effectively tell China's stories, communicate China's voice, and present a credible, lovable, and respectable image of China. As a vital component of national soft power, the international dissemination of Chinese culture is essential for shaping a positive international image and enhancing China's global discourse power. Tang poetry, the cultural imprint left by poets of the Tang Dynasty, is a testament to the prosperity of Tang poetry and the cultural exchange and integration of the era. It has enriched Chinese literary history and contributed to the inheritance and development of Chinese culture, becoming a crucial link between natural beauty and cultural heritage.

In recent years, the language services industry has undergone significant transformations, with artificial intelligence, machine translation, speech recognition, and internet translation tools profoundly impacting the translation industry and research. Against this backdrop, the international dissemination of Tang poetry requires greater attention to understanding, interaction, alignment, and optimization related to technological elements. Considering the international dissemination of Tang poetry from the perspective of digital language services allows for an exploration of effective multi modal dissemination pathways by taking into account the acceptance levels of foreign audiences from a socially stratified perspective.

2. OVERVIEW OF THE INTERNATIONAL DISSEMINATION OF TANG POETRY HISTORICAL ORIGINS OF THE TANG POETRY ROAD IN EASTERN ZHEJIANG

Tang poetry, as a gem of Chinese classical literature, has witnessed the exchange and collision of Chinese and Western cultures throughout its international dissemination journey, reflecting the development of global cultural diversity. The international dissemination of Tang poetry spans several centuries and can be divided into three stages: the Enlightenment period, the Development period, and the Flourishing period. Each stage has borne witness to the cultural interactions between East and West.

2.1 Enlightenment Period: Initial Exploration during the Age of Enlightenment (18th Century)

In the 18th century, with the rise of the European Enlightenment, Western scholars developed an increasing interest in foreign cultures. Against this backdrop, French sinologist and Jesuit priest Jean-Baptiste Du Halde introduced Tang poetry and its representative figures, such as Li Bai and Du Fu, to the Western world in his work Description de l'Empire de la Chine. This marked the formal entry of Tang poetry into the Western academic sphere. During this period, French missionaries in China acted as cultural bridges, bringing Tang poetry to Europe through letters, diaries, and academic writings, thus initiating its initial dissemination in the West. Although this stage was merely the beginning, it laid a crucial foundation for further in-depth research.

2.2 Development Period: Parallel Advancement of Academic Research and Translation Efforts (19th Century)

The 19th century marked a new development phase in the westward transmission of Tang poetry. With the rise of Western sinology, Tang poetry became an important subject of academic study. Sinologists began to systematically explore its artistic value, historical background, and cultural significance[1]. At the same time, significant progress was made in the translation of Tang poetry, evolving from simple textual conversion to in-depth literary representation. Scholars and poets such as Edward FitzGerald and Herbert Giles actively engaged in translating Tang poetry, producing influential French, English, and German translations. These works provided Western readers with greater access to Tang poetry, deepening their understanding of it and facilitating the initial fusion of Chinese and Western cultures[2].

2.3 Flourishing Period: Trends of Diversification and Digital Dissemination (20th Century to Present)

Since the 20th century, the international dissemination of Tang poetry has entered an unprecedented flourishing period. With the exchange and integration of world cultures, the translation and introduction of Tang poetry have shown clear trends of diversification. Major countries like the Soviet Union, Spain, and Italy joined the ranks of Tang poetry translation, covering almost all major Western languages[3]. During this period, influential figures and translations emerged in the field of Tang poetry translation, such as the American poet Ezra Pound and British sinologist Arthur Waley. Their translations not only preserved the original essence of Tang poetry but also incorporated elements of Western culture, giving Tang poetry new vitality in the Western world.

Entering the 21st century, the development of the internet and digital technology has made the international dissemination of Tang poetry more convenient and widespread. E-books, online databases, and social media platforms have provided new channels and methods for disseminating Tang poetry, enabling more people to access and learn about Tang poetry anytime, anywhere. Moreover, governments and cultural institutions around the world have actively promoted the international dissemination of Tang poetry. For instance, Confucius Institutes have offered Tang poetry courses globally, introducing the cultural charm and artistic value of Tang poetry to international audiences through teaching, lectures, and recitation sessions. These efforts have not only advanced the international dissemination of Tang poetry but also deepened the international community's understanding and appreciation of Chinese culture.

From the initial exploration during the Enlightenment to the parallel advancement of academic research and translation efforts in the development period, and finally to the flourishing period characterized by diversification and digital dissemination, Tang poetry, with its unique artistic charm and profound cultural heritage, has transcended temporal and spatial boundaries, becoming a bridge connecting Chinese and Western cultures.

Currently, the international dissemination of Tang poetry faces numerous opportunities and challenges. On one hand, the deepening of globalization has promoted cultural exchange and integration, providing ample space for the overseas dissemination of Tang poetry. On the other hand, challenges such as cultural differences and language barriers still exist, affecting the precise dissemination and deep understanding of Tang poetry. Therefore, the pressing issue in the current international dissemination of Tang poetry is how to maintain its cultural characteristics while employing digital language service technologies to innovate dissemination models.

3. THE VALUE OF DIGITAL LANGUAGE SERVICES IN THE INTERNATIONAL DISSEMINATION OF TANG POETRY

Language services play a crucial role in promoting cultural exchange between different countries and regions. In the era of intelligent media, digital language services hold significant contemporary relevance. These services inherently carry the core of national spirit, subtly embedding Tang poetry into various new multi-modal digital products. By leveraging the language as a medium, digital language services enhance the efficient dissemination of Tang poetry, thereby showcasing the confidence in Chinese civilization and its national spirit[4].

3.1 The Connotation of Digital Language Services

In the intelligent media era, characterized by the intertwining of globalization and digitalization, digital language services serve as a bridge connecting cultural exchanges between different countries and regions. The connotation of these services is increasingly rich and multi-dimensional. They not only encompass traditional language processing functions, such as the handling of text, speech, vocabulary, and grammar, but also integrate cutting-edge technologies like big data and artificial intelligence, forming a comprehensive system that includes ontology services, market services, and talent cultivation.

Digital language ontology services, as a core component, focus on the deep exploration and precise application of language itself. By constructing a Tang poetry resource database and utilizing big data and corpus technologies, we can achieve a comprehensive description and in-depth interpretation of Tang poetry. This process goes beyond direct translation of the text, involving a deep analysis of its linguistic style, artistic features, and historical context, thus revealing the dynamic changes and inherent rules of Tang poetry at the language level. Additionally, comparing the unique linguistic characteristics of Chinese culture with those of other cultures helps us more accurately grasp the patterns of cross-cultural communication, enhancing the targeted effectiveness of cultural dissemination.

Digital language market services, on the other hand, emphasize the commercial application and value realization of language resources. In the intelligent media era, language services are no longer merely auxiliary tools for academic research but have become a driving force in the development of the cultural industry. For example, advanced language technologies, such as real-time speech translation services provided by companies like IFlytek, have significantly

increased the efficiency of Tang poetry's international dissemination while substantially reducing service costs. This opens up a broader market space for the global promotion of Tang poetry.

3.2 The Role of Digital Language Services

The advent of the intelligent media era has provided unprecedented opportunities for digital language services to play a more significant role in cultural exchange.

Precision in Cross-Cultural Communication: Digital language services can achieve precise targeting and segmentation of audiences in different countries and regions through big data analysis and user profiling technologies. Based on this, we can customize Tang poetry dissemination content according to the cultural backgrounds, language habits, and information needs of different audiences, realizing precision in cross-cultural communication[5]. This precision not only enhances the international influence of Tang poetry but also strengthens foreign audiences' recognition and affinity towards Chinese culture.

Diversity in Dissemination Forms: In the intelligent media era, digital language services embed Tang poetry into various new multi-modal digital products, such as e-books, online databases, social media, and AR/VR experiences. These diverse dissemination forms not only enrich the channels through which Tang poetry is spread but also increase audience engagement and experiential immersion. Through multi-modal presentations, foreign audiences can more intuitively appreciate the artistic charm and cultural essence of Tang poetry, deepening their understanding and recognition of Chinese culture.

Manifestation of Cultural Confidence: In the process of aiding the international dissemination of Tang poetry, digital language services also reflect the confidence in Chinese civilization and national spirit. Tang poetry, as a treasure of ancient Chinese literature, carries rich historical and cultural information, embodying the unique aesthetic pursuits and spiritual ethos of the Chinese nation. Through the precise dissemination and diverse presentation enabled by digital language services, we can better showcase the artistic value and cultural charm of Tang poetry. As foreign audiences appreciate Tang poetry, they simultaneously experience the profound and unique allure of Chinese culture. This manifestation of cultural confidence not only enhances the international influence of Chinese culture but also strengthens the cohesion and unity of the Chinese nation[6].

Digital language services hold significant contemporary relevance and play a vital role in cultural exchange. Through their rich connotations and diverse functional applications, we can better promote the international dissemination of Tang poetry and other excellent traditional Chinese cultures, fostering cultural exchange and mutual learning between different countries and regions. In doing so, we contribute Chinese wisdom and strength to the building of a shared future for humanity.

4. THE ROLE OF DIGITAL LANGUAGE SERVICES IN FACILITATING THE LAYERED DISSEMINATION OF TANG POETRY

Language services provide favorable conditions for cultural dissemination, while cultural dissemination represents the added value of language services. According to the "2023 China Translation and Language Services Industry Development Report" released by the Translators Association of China, international communication ranks fourth in terms of business volume in the translation and language services sub-industry, accounting for 32.1%. This highlights that language services have become a crucial strategy for international communication. As an emerging interdisciplinary field, digital language services refer to the production and sale of language products and services that rely on digital technologies such as the internet, big data, artificial intelligence, and cloud computing. Digital language services ensure the layered dissemination of Tang poetry, thereby facilitating its precise international communication. Under the backdrop of digital technology, the global dissemination of Tang poetry faces new opportunities for development. A layered dissemination model tailored to different countries and audiences enhances the efficiency of Tang poetry's international communication[7]. This includes the cross-context and cross-cultural translation of Tang poetry culture through digital language processing, the digitization of Tang poetry through digital knowledge content production, the multi-modal dissemination of Tang poetry culture through digital media content, and the cultivation of digital language talents to support the international dissemination of Chinese culture.

4.1 Building a Cross-Cultural Data Analysis Platform

President Xi emphasized the importance of utilizing precise communication methods to promote the global expression of China's voice and stories, thereby enhancing international communication capabilities. The cross-cultural layered dissemination of Chinese culture contributes to the construction of an external communication discourse system. Utilizing big data technology, a cross-cultural data analysis platform that facilitates cross-language data collection and analysis serves as the foundation for the layered dissemination of Tang poetry. The cross-cultural data analysis platform, driven by clear purpose and strategy, analyzes the unique dissemination patterns based on the characteristics of different countries and audience categories. Specifically, with the aid of a cross-language data analysis platform, dissemination can be layered, grouped, and classified according to the characteristics of key audiences, thereby enhancing the reach of Tang poetry. For instance, using Python data scraping technology, information preferences of audiences from different countries and backgrounds can be gathered, enabling user profiling research. This allows for the intelligent

customization of Tang poetry content themes tailored to different foreign audiences, ultimately achieving precise international communication of Tang poetry.

Based on the analysis provided by the cross-cultural data analysis platform, the international dissemination of Tang poetry should adhere to a precise communication strategy, following the principle of "one country, one strategy," or even "multiple strategies for one country." Firstly, for audiences in different countries, the focus of language services should vary. For example, audiences in Asian countries are generally interested in China's traditional culture, so language services should prioritize the translation of visual symbols, increasing their familiarity with Tang poetry through cultural short videos, and enhancing their understanding of Chinese culture through virtual museums. In contrast, audiences in European countries may lack a foundational understanding of Chinese culture, so language services should focus on the multi-modal integration of language, sound, graphics, images, cartoons, and films. This multi-modal language service, which combines visual, auditory, and tactile elements, can facilitate "cloud participation" in digital cultural tourism, thereby realizing the efficient dissemination of Tang poetry in a more vivid manner.

Secondly, there are significant differences in the recognition and needs of Tang poetry culture among political elites, academic elites, and the general public. Therefore, for political elites, language services should emphasize the formality of translation style, primarily seeking the integration of Eastern and Western values, striving for common ground while reserving differences. For academic elites, the ideational and speculative aspects of Tang poetry culture are important content for dissemination and should be the focus of language services. The Tang poetry corpus provides them with the opportunity to systematically understand Chinese culture. For the general public, classic Tang poetry and popular culture, including films, music, novels, folklore, and cuisine, are crucial content for dissemination. Thus, language services that rely on artificial intelligence and digital virtual simulation technology help to enhance the audience's identification and understanding of Tang poetry through deep experience and sensory engagement.

4.2 Developing Chinese Cultural Translation Tools Based on Big Data

Translation is a key element of language services. Unlike traditional human translation, digital language services rely on natural language processing (NLP) technology, enabling machine translation and real-time multi-language subtitling. With the advancement of artificial intelligence, translation services have evolved from general machine translation to more precise and specialized domain-specific translations, providing new opportunities for the international dissemination of Tang poetry. By continuously optimizing bilingual cultural corpora and training cultural translation engines, the effectiveness of Tang poetry's international communication can be significantly improved[8]. The Chinese cultural translation tool system for Tang poetry will be a crucial support for the future development of cultural translation services and will include components such as a multi-modal Tang poetry corpus, an audio simultaneous translation machine for Tang poetry, and a translation proofreading system.

Firstly, the Tang poetry multi-modal corpus is of significant value for its international dissemination. It not only reduces the cost for foreign audiences to appreciate Tang poetry but also increases their desire to understand Chinese culture. In the era of intelligent technology, cultural dissemination is no longer limited to single-modal text or audio but is based on multimedia information from big data. Establishing a multilingual and multi-modal Tang poetry resource library involves extracting keywords from text, images, audio, and video sources, grouping, associating, and pairing them based on similarity, and creating a tightly connected image-text dataset for Tang poetry using both modeling and manual annotation methods. When users search for a particular cultural keyword, all relevant text, images, and videos from different modalities will be presented. The visualization of Tang poetry can effectively enhance the foreign audience's perception and improve the acceptance of Chinese culture[9]. Additionally, audio simultaneous translation machines can incorporate more translations of Chinese cultural terms, supporting bidirectional conversion between multiple languages and Chinese, thus improving translation service efficiency and dissemination effectiveness. Finally, the translation proofreading system should not only be based on language standard norms but also adhere to real-time updates to the database, providing error alerts to the corpus to enhance translation accuracy and language service quality. In summary, the integration of multi-modal linguistics, machine translation, and communication studies in the era of artificial intelligence provides new ideas, concepts, and methods for the cross-cultural dissemination of Tang poetry. Effective integration between the information technology industry and the language service industry can enhance the ability and effectiveness of Chinese cultural dissemination[10].

4.3 Innovating Language Service Talent Training Pathways

In the context of the big data era, China's language service market is experiencing explosive growth. However, the language service industry faces several challenges: an imbalance between supply and demand for language service professionals, a lack of comprehensive training systems, and a need for innovation in translation technology[11]. It is evident that the traditional single-language translation talent training model can no longer meet the market demands and must be transformed into a model for training composite language service professionals.

Given the significant proportion of international communication in language service market demand, the training of language service professionals must address the needs of international dissemination. Since the external dissemination of Chinese culture in the era of artificial intelligence involves five dimensions—language, translation, culture, technology, and communication—the training of digital language service professionals needs to address these dimensions to enhance the quality of language service personnel. Scholars suggest that, at present, we should shift from

training language professionals to training language service professionals[12]. The aim of language service majors is to cultivate composite talents with an international perspective and national pride, who master interdisciplinary knowledge in linguistics, translation studies, communication studies, and artificial intelligence technologies, and are familiar with the language service industry and international communication strategies. This will enhance various capabilities, including language skills, cultural competence, technical abilities, and diplomatic skills.

Language service professionals are not only traditional translation experts but also technical experts. The training of language service professionals needs to break from traditional translation training models, optimize curriculum structures, and innovate training methods. Firstly, in terms of curriculum, diverse course content should be included, going beyond traditional linguistic subjects to incorporate machine translation, artificial intelligence, neural networks, communication studies, and intercultural studies. Secondly, in terms of training models, a combination of government, industry, academia, and research should be adopted to meet the national strategic needs for cultural dissemination. Strengthening the integration of schools and enterprises, inviting industry mentors for teaching, adhering to the CDIO model (Conceive, Design, Implement, and Operate), emphasizing learning by doing, and reinforcing case studies and practical exercises are essential. Additionally, combining traditional classrooms with virtual simulation classrooms and immersive digital language service practice scenarios will enhance the quality of digital language service professionals.

5. CONCLUSION

China's cultural history is profound and its cultural soft power is robust, making it essential for building the international communication system and discourse system of China. The international dissemination of Tang poetry involves the exchange and communication of information between the source language and the target language within different cultural contexts, requiring support from language translation, language products, and other language services. This enables foreign audiences to subtly perceive the essence of Chinese culture embedded in the language while enjoying language services. Digital language services are a crucial enabler for achieving high dissemination effectiveness of Tang poetry in the international arena. With the support of digital language services, the international dissemination of Tang poetry can overcome the barriers between cultural communication and cross-cultural language dissemination. By integrating language, culture, and communication, a multi-modal framework for layered dissemination of Tang poetry can be established, enhancing its international dissemination effectiveness and aiding in the global outreach of Chinese culture.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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