

# Innovation and Entrepreneurship of College Students: Sino-Russian Communication of ' Birch ' - Northeast Intangible Cultural Heritage in The Digital Age

Guiwen Bai

Harbin University of Science and Technology, Harbin, Heilongjiang, 150080, China

## Abstract

**In the digital age, the intangible cultural heritage of Northeast China's birch bark craft—as a vital repository of the region's culture and ethnic wisdom—is closely linked to the birch tree, which is the national tree of Russia, forming a natural cultural bond for Sino-Russian exchanges. Its cross-border dissemination between China and Russia emerge as a key pathway for promoting cultural exchange and the living transmission of this heritage. University students engaged in innovation and entrepreneurship, with their digital mindset and innovative vitality, have become a driving force in the digital dissemination of this intangible cultural heritage. This paper examines the core essence and value of Northeast China's birch bark intangible cultural heritage. It analyses the challenges encountered in Sino-Russian dissemination within the digital age, including content homogeneity, technological lag, channel obstructions, and insufficient integration of innovation and entrepreneurship. Based on four dimensions—deepening the exploration of birch bark craftsmanship, innovating digital expressions, establishing cross-border platforms, and strengthening industry-education collaboration. It proposes concrete and feasible digital dissemination strategies to achieve a deep integration of university students' innovation and entrepreneurship practices with the dissemination of birch bark ICH, thereby facilitating the mutual empowerment of the cultural value of birch bark ICH and the value of innovation and entrepreneurship, and promoting the widespread dissemination and living transmission of ICH in both China and Russia.**

## Keywords

**University student innovation and entrepreneurship; Northeast China birch bark craft (intangible cultural heritage); digital dissemination; Sino-Russian cultural exchange; living heritage.**

## 1. Introduction

Digital technology is reshaping the ecosystem of cultural dissemination. Birch tree is the national tree of Russia, and birch bark culture carries shared emotional and cultural connotations between China and Russia. As a vital vehicle for the regional culture and ethnic wisdom of Northeast China, the cross-border dissemination of the region's birch bark intangible cultural heritage has become a key pathway for promoting Sino-Russian cultural exchange and ensuring the living transmission of this heritage. University students engaged in innovation and entrepreneurship, with their keen digital acumen and innovative vitality, have emerged as a core force in the digital dissemination of intangible cultural heritage [1]. However, the differences in cultural contexts between China and Russia, coupled with the unique nature of the dissemination landscape, present numerous practical challenges for the cross-border digital dissemination of Northeast China's birch bark intangible cultural heritage. By adopting the perspective of university students engaged in innovation and entrepreneurship, exploring

the core values of this heritage, and devising practical digital dissemination strategies, we can not only support the living transmission of this cultural heritage but also foster a deep integration between students' innovation and entrepreneurship practices and the dissemination of intangible cultural heritage, thereby achieving a mutual reinforcement of cultural value and the value of innovation and entrepreneurship.

## **2. The Core Essence of the Intangible Cultural Heritage of Northeast China's Birch Bark Craft**

The intangible cultural heritage of Northeast China's birch bark craft is rooted in the cold-temperate forest ecosystem of the region. Drawing on the area's abundant birch resources, it has evolved over centuries into a distinctive cultural system encompassing two core dimensions: birch bark craftsmanship and cultural expression. The craft of birch bark production follows a complete process comprising 'material selection—soaking—peeling—drying—tanning—shaping—decoration'. Each stage embodies the wisdom of local ancestors in adapting to and transforming nature. The transmission of these skills emphasises oral and hands-on instruction, preserving the rustic qualities of traditional handcrafted work and showcasing the Northeast's ethnic groups' precise understanding of material properties and aesthetic pursuits [2]. In terms of cultural expression, birch bark as an intangible cultural heritage embodies the living customs, values and spiritual beliefs of the various ethnic groups in Northeast China. The forms and patterns of birch bark artefacts not only meet practical needs but also contain auspicious meanings and regional symbols, serving as important markers of the cultural identity of the people of Northeast China. At the same time, they bear the imprint of cultural fusion in the Sino-Russian border region, providing a natural cultural bond for cross-border dissemination.

The core value of the Northeast Birch Bark Intangible Cultural Heritage is manifested in three aspects: technical value, cultural value and contemporary value. The technical value highlights the uniqueness and continuity of the craft; its comprehensive production process and exquisite decorative techniques form an integral part of traditional Chinese craftsmanship, embodying the living heritage of this craft. Its cultural value is manifested in the fusion of regional and ethnic cultures. This intangible cultural heritage documents the changes in the production and daily life of the ethnic groups in Northeast China, conveys the philosophy of harmonious coexistence between humanity and nature, and simultaneously incorporates cultural elements from the Sino-Russian border regions, forming a cultural character that is both distinctively ethnic and inclusive. Its contemporary value lies in the connection between intangible cultural heritage and modern life. The spirit of craftsmanship and aesthetic philosophy embodied in birch bark heritage satisfy contemporary people's spiritual needs for traditional culture, provide rich cultural material for university students' innovation and entrepreneurship, and serve as a vibrant vehicle for Sino-Russian cultural exchange [3].

## **3. An Analysis of Issues Concerning the Dissemination of Northeast China's Birch Bark Craft Intangible Cultural Heritage in China and Russia in the Digital Age**

### **(1) Homogeneous content and superficial cultural significance**

Currently, the digital dissemination of Northeast China's birch bark intangible cultural heritage between China and Russia exhibits a tendency towards homogeneity. Most of the content focuses on displaying the appearance of birch bark artefacts and providing simple introductions to the production process, whilst failing to delve deeply into the cultural significance, historical context and spiritual value of this intangible heritage. Much of the

content remains superficial, failing to fully showcase the ethnic wisdom, regional culture and elements of Sino-Russian cultural fusion underlying the birch bark craft. Consequently, it is difficult for Russian audiences to grasp the core value of this intangible cultural heritage. Some content blindly pursues traffic, excessively simplifying the craft processes and misrepresenting cultural connotations; in some cases, there are even instances of homogenised replication. This fails to reflect the uniqueness of birch bark ICH, nor does it generate sustained appeal for dissemination, thus failing to meet the needs of Chinese and Russian audiences for a deeper understanding of traditional culture.

#### (2) Lagging digital technology and a lack of variety in presentation formats

The digital technologies underpinning the digital dissemination of Northeast China's birch bark intangible cultural heritage are relatively outdated, and the presentation formats are rather limited, making it difficult to meet the dissemination requirements of the digital age and the viewing habits of audiences in both China and Russia. Current dissemination efforts rely primarily on photographs and short videos, with a lack of application of advanced digital technologies such as virtual reality (VR), augmented reality (AR) and 3D modelling; consequently, audiences are unable to gain an intuitive understanding of the detailed processes involved in birch bark craftsmanship or the texture of the artefacts. The quality of digital content production varies considerably; some content features blurred images and rough editing, lacking professional planning and design, which makes it difficult to convey the aesthetic value of birch bark intangible cultural heritage. Furthermore, the digital content lacks specificity; it has not been tailored to the cultural backgrounds and aesthetic preferences of Chinese and Russian audiences, thereby reducing the effectiveness and impact of the dissemination.

#### (3) Obstacles in cross-border channels and limitations in audience reach

There are significant shortcomings in the cross-border channels used for the digital dissemination of Northeast China's birch bark intangible cultural heritage between China and Russia. The layout of these channels is suboptimal and their operational efficiency is low, resulting in limited audience reach. Current dissemination efforts rely heavily on mainstream domestic social media platforms, whilst failing to make effective use of local Russian social media and cultural dissemination platforms, making it difficult to reach core audiences in Russia. Language barriers are encountered during cross-border dissemination; the majority of content has not undergone professional Russian translation or cultural adaptation, and some translations contain semantic inaccuracies, failing to accurately convey the cultural significance of the birch bark intangible cultural heritage. Furthermore, factors such as differences in cross-border internet environments and cultural policies further hinder the smooth operation of dissemination channels, making it difficult for content to achieve effective reach and widespread dissemination, thereby limiting the influence of the birch bark intangible cultural heritage in Russia.

#### (4) Insufficient integration of innovation and entrepreneurship, and a lack of mechanisms for commercialisation

There is insufficient integration between university students' innovation and entrepreneurship initiatives and the digital dissemination of Northeast China's birch bark intangible cultural heritage (ICH) to the Chinese and Russian markets; the absence of a robust conversion mechanism makes it difficult to achieve a two-way transformation of cultural value and innovation-entrepreneurship value. Most student innovation and entrepreneurship projects focus on either the transmission of a single craft or digital dissemination, failing to deeply integrate birch bark ICH with innovation and entrepreneurship practices, and lacking innovative design in terms of content, format and dissemination channels. There is a lack of effective collaboration between universities, enterprises and intangible cultural heritage

bearers. Consequently, the innovative concepts and digital technologies of university students have not been fully integrated with the technical expertise and cultural resources of the heritage bearers, resulting in a lack of sustainability in dissemination projects. Furthermore, the absence of robust incubation support and incentive mechanisms means that student innovation and entrepreneurship projects face challenges such as funding shortages, technical limitations and difficulties in market integration. This makes it difficult to translate innovative ideas into tangible dissemination outcomes, thereby restricting the innovative development of the digital dissemination of birch bark intangible cultural heritage.

#### **4. Strategies for the Digital Dissemination of Northeast China's Birch Bark Intangible Cultural Heritage in China and Russia from the Perspective of University Students' Innovation and Entrepreneurship**

##### **(1) Delving deeply into the art of birch bark craftsmanship and reconstructing the narrative framework**

Drawing on their professional expertise and innovative thinking, university students engaged in innovation and entrepreneurship will focus on the core techniques and cultural significance of the Northeast China birch bark craft as an intangible cultural heritage. By taking into account the cognitive characteristics of audiences in both China and Russia, they will reconstruct a narrative framework for dissemination that is more targeted and better aligned with practical realities. Students could form cultural research teams comprising students from cultural studies, foreign languages and media studies programmes. These teams would visit birch bark craft inheritors in Heilongjiang, Jilin and other regions in batches to document the technical details and stories of transmission. At the same time, they would communicate and consult with folklorists, staff of Sino-Russian border cultural centers and professionals engaged in cross-border cultural exchange for a long time, systematically trace the developmental history of birch bark craftsmanship, identify key production techniques at each stage, and elucidate the cultural symbolism of various artefacts. During this research, the focus should be on distilling the survival wisdom of Northeast China's ethnic groups in adapting to the cold-temperate climate, the distinctive regional folk customs, and the cultural elements integrated by residents of the Sino-Russian border through their daily interactions. This should be organised into a repository of materials ready for dissemination, forming a comprehensive and concrete cultural content system. In terms of narrative style, rather than a straightforward introduction to the technical steps, a story-based approach was adopted. This included filming the experiences of inheritors as they learnt the craft and the minor setbacks encountered during the production process, as well as documenting everyday scenes of Sino-Russian border residents using birch bark artefacts, thereby lending the content a more authentic and compelling quality. At the same time, taking full account of the differences in the cultural contexts of China and Russia, Russian language students and Russian international students were invited to participate in the adaptation of the content. Whilst preserving the core essence of the birch bark intangible cultural heritage, the project incorporated folk expressions and aesthetic preferences familiar to Russian audiences, thereby avoiding cultural misunderstandings, ensuring the precise transmission of cultural significance, and enhancing the acceptability of the content [4].

##### **(2) Leveraging digital media to innovate forms of expression**

The university students' innovation and entrepreneurship team has fully leveraged their expertise in digital technology, combining it with the distinctive characteristics of various digital media. They have focused on innovating the digital representation of birch bark craftsmanship—a form of intangible cultural heritage—by refining the presentation of details and enriching the forms of expression. This approach effectively enhances the appeal and visual

clarity of the content, whilst aligning with the viewing preferences of audiences in both China and Russia. The team has consolidated technical resources from on-campus disciplines such as digital media and computer science to form a dedicated digital production group. Utilising advanced digital technologies including VR, AR and 3D modelling, they have accurately recreated the entire birch bark crafting process—from selecting birch trees based on grain patterns and controlling soaking times, to the techniques of bark stripping, temperature control during tanning, and on to the fine details of shaping and the design of decorative patterns, each step was digitally recreated to create immersive content. By wearing VR headsets, audiences can ‘step into’ the production site, whilst AR technology allows them to view the detailed textures of birch bark artefacts within real-world settings, enabling audiences in both China and Russia to clearly and intuitively appreciate the precision of each process and the mastery of the craftsmanship. Regarding existing formats such as short videos and images, the team has undertaken professional planning and meticulous production, optimising composition and camera angles, controlling the pacing of content, and eliminating rough editing. By incorporating youthful and fashionable expressive elements and avoiding dry technical explanations, the team has made the content more visually engaging. At the same time, we are developing a diverse range of digital products, including birch bark intangible cultural heritage-themed emoji packs tailored to the preferences of Chinese and Russian audiences. These packs feature classic birch bark artefacts and traditional patterns as core elements, designed for use in social media contexts; Create digital cultural and creative collectibles by digitally replicating traditional birch bark artefacts, endowing them with unique collectible value; develop interactive online mini-programmes featuring craft simulations and pattern design activities to enhance audience engagement and retention, thereby achieving diverse coverage of the content. Furthermore, utilising technologies such as high-definition scanning and digital modelling, systematically preserve existing birch bark artefacts and traditional patterns through digitisation. Categorise and organise these to form a comprehensive digital repository of birch bark intangible cultural heritage, annotating each artefact with its era, craftsmanship characteristics and cultural significance, thereby providing a solid foundation for subsequent dissemination and preservation efforts [5].

### (3) Establishing cross-border platforms and expanding the communication network

Building on the practical needs of cross-border communication between China and Russia, a group of university students engaged in innovation and entrepreneurship has proactively established a targeted and practical platform for the cross-border promotion of the birch bark intangible cultural heritage. By refining their channel strategy and diversifying their communication formats, they have gradually expanded a multi-faceted communication matrix, effectively breaking down channel barriers in cross-border communication and enhancing the effectiveness of their outreach. Leveraging the university’s innovation and entrepreneurship programme, the team has collaborated with students specialising in computer science, media studies and foreign languages to develop a dedicated mini-programme for the digital dissemination of birch bark intangible cultural heritage between China and Russia. This platform integrates previously produced immersive content, digital artefacts and short videos, whilst featuring functional modules for craft demonstrations, cultural interpretation and interactive exchanges. It supports seamless switching between Chinese and Russian, with the interface optimised to suit the usage habits of audiences in both countries, ensuring the precise transmission of cultural content. We have actively established a presence on Russian social media platforms, including VK and Odnoklassniki, by setting up official accounts managed by dedicated staff. By aligning with the preferred viewing times and content preferences of Russian audiences, we regularly publish tailored content that balances craft demonstrations with cultural insights, thereby avoiding a rigid or forced approach to communication. We actively carry out friendly cooperation and resource sharing with local cultural institutions,

cross-border media platforms and relevant universities in China and Russia, expand outreach coverage. We jointly organise activities such as online exhibitions of birch bark intangible cultural heritage and live-streamed Sino-Russian bilingual craft exchanges, incorporating interactive comment sections and online Q&A sessions to foster cultural interaction and emotional resonance among audiences in both countries. Concurrently, a translation and cultural adaptation team comprising Russian language students, Russian international students and students specialising in cultural studies should be formed to provide accurate translations of all disseminated content. Particular emphasis should be placed on optimising the cultural appropriateness of cultural expressions, thereby avoiding cultural misunderstandings and ensuring that the cultural significance of birch bark intangible cultural heritage is conveyed without deviation, effectively eliminating linguistic and cultural barriers in cross-border communication [6].

#### (4) Strengthen industry-education collaboration and refine incubation pathways

From the perspective of university students' innovation and entrepreneurship, the university focuses on the practical needs of the digital dissemination of birch bark intangible cultural heritage, refines measures for industry-education collaboration, and improves project incubation pathways. This approach promotes the deep integration of students' innovation and entrepreneurship practices with the dissemination of birch bark intangible cultural heritage, thereby enhancing the sustainability and practicality of dissemination projects. Universities, grounded in their mission of talent development, should establish relevant courses—such as digital dissemination of intangible cultural heritage, cross-border cultural exchange, Russian translation, and digital cultural and creative design—in response to the needs of digital dissemination of birch bark ICH and Sino-Russian cross-border exchange. By integrating theoretical instruction with practical application, and inviting ICH inheritors and digital communication professionals into the classroom to explain technical details and dissemination techniques, universities can cultivate students' cultural literacy, digital technology application skills, and cross-border communication competence. Universities should encourage students from cultural, digital and foreign language disciplines to form specialised innovation and entrepreneurship teams, clarify team roles and responsibilities, focus on the digital dissemination of birch bark intangible cultural heritage between China and Russia, and provide targeted guidance to these teams. Regular collaboration between universities and birch bark ICH inheritors will be strengthened. Inheritors will be invited to serve as external project mentors, visiting campuses regularly to conduct skills training and provide project guidance. They will assist teams in identifying key technical elements and ensuring the preservation of cultural significance, thereby precisely integrating the transmission of birch bark craftsmanship with innovations in digital communication to enhance the professionalism and feasibility of projects. Proactively engage with local cultural enterprises, digital media companies and cross-border cultural and creative enterprises to establish partnerships. Seek corporate support in areas such as project funding, digital technology and market channels to facilitate the commercialisation of innovation and entrepreneurship projects. Guide teams to develop cultural and creative products and digital dissemination services centred on birch bark intangible cultural heritage, balancing cultural significance with market demand to achieve a mutual enhancement of cultural and economic value. At the same time, we will refine the project incubation support mechanism. Leveraging university innovation and entrepreneurship incubators, we will provide university student teams with dedicated office space and professional technical guidance, connect them with start-up funding and policy resources, and assist in resolving specific challenges encountered during project development—such as funding shortages, technical bottlenecks and difficulties in market access—thereby supporting the sustainable and healthy development of the projects and

promoting the long-term advancement of digital dissemination efforts for the birch bark intangible cultural heritage between China and Russia.

## 5. Conclusion

The digital dissemination of Northeast China's birch bark intangible cultural heritage (ICH) between China and Russia is a significant initiative for promoting the living transmission of ICH and fostering cultural exchange between the two nations; it also represents an important area for university students' innovation and entrepreneurship practice. From the perspective of university students' innovation and entrepreneurship, this paper focuses on the core essence and dissemination challenges of Northeast China's birch bark intangible cultural heritage, proposing targeted digital dissemination strategies. Its core contribution lies in deeply integrating the innovative thinking and digital strengths of university students' innovation and entrepreneurship with the dissemination of birch bark intangible cultural heritage, thereby constructing a practical and highly operational cross-border dissemination pathway. This provides new insights for the integrated development of digital cross-border dissemination of intangible cultural heritage and university students' innovation and entrepreneurship practices. This study still has certain limitations; the research into the precise needs of Chinese and Russian audiences was not sufficiently in-depth, and there is a lack of follow-up verification regarding the long-term effectiveness of the dissemination strategies. Future research could focus on the differences in the needs of Chinese and Russian audiences to further optimise dissemination strategies and strengthen empirical research on dissemination outcomes. At the same time, it could explore more new models for integrating university students' innovation and entrepreneurship with the dissemination of intangible cultural heritage, thereby promoting the broader two-way dissemination of birch bark intangible cultural heritage between China and Russia in the digital age, and contributing to the living transmission of traditional culture and the deepening development of cross-border cultural exchange.

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Sino-Russian Themed Exchange on Birch Culture: Inheritance and Communication of Northeast Intangible Cultural Heritage in the Digital Context

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