

Guqin in the Digital Era: Preserving Tradition and Shaping the Future of Music Education

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ABSTRACT

The research investigates the current status of the Guqin (Chinese ancient zither) and explores the potential role of technology and the internet in its cultural development and dissemination. By analyzing the Guqin's manufacturing processes, educational systems, and commercialization, this study examines the possibility of creating a profitable, sustainable industry centered around Guqin culture. Despite the long-standing tradition and significance of the Guqin in Chinese cultural heritage, it faces challenges such as limited public awareness and difficulty engaging younger generations. This research highlights the need for innovative methods in Guqin manufacturing, sales, and education, particularly through the use of digital platforms and new media to reintegrate the Guqin into modern life. The findings suggest that leveraging internet technologies, including social media platforms such as Douyin (TikTok) and Kuaishou, could foster a revitalization of Guqin culture, making it more accessible and appealing to a broader audience. Additionally, this study explores the feasibility of creating a comprehensive industry model that connects manufacturers, educators, and enthusiasts through online platforms, potentially offering a more dynamic approach to preserving and advancing this ancient musical tradition. By optimizing the existing industry structure, this project seeks to improve the public's understanding of Guqin, enhance its market presence, and create new opportunities for its sustainability in the modern era.

KEYWORDS

Guqin Culture; Cultural Heritage Preservation; Digital Media Integration; Music Education Innovation

1. INTRODUCTION

The guqin, an ancient Chinese musical instrument with a history of over 3,000 years, has been a symbol of traditional Chinese culture. Revered for its deep, meditative sound, the guqin holds not only musical significance but also philosophical and cultural importance. However, as modern technology continues to advance, traditional arts like the guqin face the challenge of preservation and adaptation in an increasingly digital world. In particular, the integration of digital tools into music education presents an opportunity for reviving interest and enhancing learning experiences for new generations [1].

This study aims to explore how the digitalization of guqin education can bridge the gap between tradition and modernity. The research employs a mixed-methods approach, combining qualitative analysis of current guqin education practices with quantitative data collected from surveys and experiments involving digital learning tools [1, 2]. By evaluating the effectiveness of digital methods—such as online courses, mobile applications, and virtual guqin simulations—this research assesses their impact on students' learning outcomes and their potential in preserving the traditional art form.

The significance of this research lies in its potential to offer innovative solutions for the sustainability of traditional music education. By integrating technology with ancient music traditions, this study not only contributes to the modernization of guqin teaching but also proposes a model for the preservation and global dissemination of traditional Chinese music in the digital era. Ultimately, this research seeks to preserve the cultural heritage of the guqin while ensuring its continued relevance and accessibility in the modern world [3].

2. DATA PROCESSING

The data used in this study were primarily collected from two main sources: a set of digital learning platforms offering guqin courses and a survey conducted among students who have engaged with these platforms. The platforms include both free and paid resources, such as online video tutorials, mobile applications, and interactive learning tools designed specifically for guqin education. Additionally, a questionnaire was distributed to a sample of guqin students to gather feedback on their learning experiences, challenges, and preferences regarding digital tools.

Before analysis, the collected data underwent several stages of preprocessing. First, the survey responses were cleaned to remove any incomplete or irrelevant entries. Duplicate responses were also identified and eliminated to ensure data integrity. For the digital platform data, information such as user interaction logs, course completion rates, and progress tracking metrics were extracted from platform databases. Missing values were addressed through imputation techniques, and outliers were detected and removed to avoid distortion in analysis.

The data processing and analysis were carried out using a combination of software tools. Python, along with libraries such as Pandas, NumPy, and Matplotlib, was employed for data cleaning, transformation, and statistical analysis. The quantitative data were analyzed using both descriptive statistics and inferential techniques to evaluate the impact of digital learning tools on guqin education outcomes [4]. For qualitative data derived from open-ended survey responses, sentiment analysis and thematic coding were conducted using Natural Language Processing (NLP) techniques to identify key trends and patterns.

The overall data processing workflow involved importing raw data, cleaning and transforming it, conducting exploratory analysis, and finally applying relevant statistical methods to draw conclusions [4, 5]. This comprehensive process enabled an accurate assessment of the effectiveness of digital tools in enhancing guqin education.

3. INDUSTRIALIZATION OF GUQIN EDUCATION

The industrialization and commercialization of traditional arts, such as guqin, has long been a subject of discussion. With the advent of digital technologies, there has been a marked shift in how traditional music, including guqin, is preserved, taught, and disseminated. This section explores how the digital empowerment of guqin education can contribute to the industrialization and profitability of the sector, focusing on the potential business models, strategies, and economic benefits that arise from the integration of digital learning platforms and technologies.

3.1. Digital Transformation of Guqin Education

The digital transformation of guqin education has brought about significant changes in both teaching methods and market access. Traditional methods of guqin education—typically based on one-on-one in-person instruction—have limited scalability and accessibility, restricting the number of learners and, consequently, the market size. Digital platforms, on the other hand, allow for scalable, asynchronous learning, which makes guqin education accessible to a global audience [5].

The most prominent business models that have emerged in this digital space include subscription-based platforms, pay-per-course models, and freemium models. Through these digital tools, guqin courses, tutorials, and performance showcases can be delivered to a wide range of learners without the constraints of geographical location. For instance, online video courses, interactive tutorials, and gamified learning environments allow students to learn at their own pace, thereby increasing engagement and retention rates.

Additionally, the commercial opportunities for guqin education are expanding beyond direct instruction to include supplementary digital products and services such as virtual guqin instruments, mobile applications for practice, and AI-based teaching assistants. The development of these digital tools creates opportunities for generating revenue through diverse channels, such as app downloads, in-app purchases, and digital content licensing.

3.2. Business Strategies and Models for Guqin Education

The profitability of guqin education through digitalization hinges on several key business strategies and models. Firstly, leveraging partnerships with content creators and experts in the field allows for high-quality, diverse educational offerings. Collaborations with renowned guqin players or music schools can significantly enhance the credibility and appeal of digital platforms, attracting more users and increasing conversion rates.

Secondly, strategic marketing and branding are essential to drive user engagement. Platforms offering traditional guqin education need to position themselves as both educational and cultural hubs, showcasing the rich history and unique value of the guqin while offering modern, user-friendly digital solutions. By marketing guqin education as a form of cultural preservation combined with modern innovation, digital platforms can tap into both cultural tourism and educational markets.

Lastly, monetization strategies can include offering tiered subscription models, where basic content is available for free or at a low cost, and advanced courses, live lessons, and personalized feedback are available through premium subscriptions. This "freemium" model has proven effective in numerous educational industries, providing users with initial exposure to the platform while creating opportunities for further monetization through value-added services.

3.3. Economic Impact and Long-Term Sustainability

The economic impact of digitalization on guqin education can be measured in both direct and indirect ways. Direct economic benefits include revenue from subscriptions, paid courses, app downloads, and digital product sales. However, there are also indirect economic benefits through increased exposure to and appreciation of guqin culture, which can lead to a broader cultural tourism market, book and merchandise sales, and collaborations with related sectors such as music therapy, wellness programs, and cultural heritage preservation.

Furthermore, the sustainability of this model depends on continuous innovation and the integration of new technologies. Future trends in the use of augmented reality (AR) for virtual guqin playing or the development of AI-based personalized learning tools will continue to drive the commercial potential of guqin education. Moreover, the introduction of online competitions, virtual festivals, and cross-platform content distribution can open new revenue streams and further increase the global appeal of guqin culture.

3.4. Challenges and Opportunities for Further Growth

Despite the many advantages of digital empowerment, several challenges must be addressed to ensure the long-term profitability and sustainability of the guqin education industry. First, there is a need to overcome the technological divide, as not all students have access to high-speed internet or the latest

digital devices. To bridge this gap, platforms must consider low-cost solutions or partnerships with government or nonprofit organizations that promote digital literacy in underserved regions.

Second, the quality and authenticity of digital guqin education need to be carefully managed. There is a risk that commercial platforms might prioritize profitability over educational value, leading to superficial content that fails to convey the depth of guqin culture. Ensuring that digital courses are taught by qualified instructors with strong cultural credentials will be essential in maintaining the integrity of guqin education.

In conclusion, the industrialization and profitability of guqin education through digital empowerment offers significant opportunities for both economic gain and cultural preservation. By embracing scalable business models, strategic marketing, and innovative educational technologies, the sector can thrive while making guqin learning more accessible to a global audience. With careful management and ongoing development, the digital transformation of guqin education could not only contribute to the cultural sustainability of this ancient instrument but also help it flourish in the modern digital economy.

4. DIGITAL PRESERVATION OF TRADITION

The profitability of the digitalization of Guqin (an ancient Chinese string instrument) relies on multiple business models that integrate traditional art with modern technological advancements. By capitalizing on the growing demand for digital cultural experiences, it becomes possible to create sustainable income streams while preserving the rich heritage of Guqin music. Below are several specific, actionable business models that can foster profitability.

Tang palace music is displayed in Figure 1:



Figure 1. Tang palace music

4.1. Digital Content Creation and Distribution

One of the most straightforward approaches to profitability is the creation and distribution of digital content. Online platforms provide an ideal channel for the dissemination of Guqin-related content to global audiences. The most common content types include:

Online Courses: Interactive, subscription-based online courses focusing on Guqin learning can attract a wide range of students. These courses could include video lessons, quizzes, and personalized feedback, catering to beginners as well as advanced students. A tiered pricing model can be implemented, where users pay for access to individual courses or subscribe for full access to an entire learning system [6]. Platforms such as Coursera, Udemy, or specialized cultural platforms can be utilized for distribution.

Streaming Music and Concerts: Digital platforms like Spotify, Apple Music, or YouTube offer revenue opportunities through streaming. Guqin performances, whether recorded live or studio-based, can be uploaded to these platforms and monetized through advertising or subscriptions. Additionally, online streaming of live performances or special events can generate revenue through pay-per-view or ticket sales.

Digital Books and E-Learning: E-books or digital learning materials such as manuals, practice sheets, and guides can be marketed through platforms like Amazon Kindle or self-hosted e-commerce websites. Bundling these resources with other digital content, such as video lessons or exclusive audio tracks, can create a more attractive package for customers.

4.2. Virtual Events and Online Communities

The rise of virtual events has opened up new opportunities for the digital monetization of cultural experiences. Guqin performances, workshops, and masterclasses can be conducted virtually and monetized in various ways:

Ticketed Virtual Concerts: By leveraging platforms such as Zoom, YouTube, or specialized virtual concert platforms, musicians and performers can hold live or pre-recorded Guqin concerts. Audience members can purchase tickets for exclusive access to these events, similar to the traditional concert model [7]. The accessibility of virtual platforms allows for a global audience, significantly expanding potential revenue.

Webinars and Masterclasses: Experts or well-known Guqin players can host masterclasses or workshops on various aspects of Guqin performance or history. These events can be ticketed or offered on a subscription basis. Live workshops allow direct interaction with instructors, enhancing the value for attendees. Additionally, hosting free introductory sessions could serve as marketing tools to attract a wider audience, converting them into paying customers.

Crowdfunding and Patronage: Platforms like Patreon allow artists to build communities of patrons who support their work on a regular basis. Guqin musicians and educators can offer tiered membership plans where patrons receive exclusive content such as behind-the-scenes footage, early access to recordings, and personal interactions [8]. Crowdfunding campaigns for specific projects like album releases or performance tours can also provide upfront capital and generate awareness.

4.3. Technology-Enhanced Instruments and Accessories

The digitalization of Guqin is not limited to content and performances. It also extends to the instruments themselves. Innovating the traditional Guqin with technology can open new business opportunities:

Digital Guqin Instruments: The creation of digitally enhanced Guqin instruments can cater to both traditionalists and tech-savvy enthusiasts. These instruments could incorporate features such as built-in tuners, sensors to track finger positioning, or even connectivity to mobile apps for interactive learning. Offering these digital Guqin models could appeal to a broader market, including music schools, conservatories, and individual learners who want a high-tech experience.

Guqin Learning Accessories: Another profitable avenue is the development of learning aids such as digital metronomes, tuning apps, and practice tools that integrate with smartphones or computers.

These products could be sold alongside traditional Guqin instruments and provide added value to customers who wish to enhance their learning process.

5. FUTURE CHALLENGES AND PROSPECTS

While the digitalization of Guqin holds immense potential for preserving and promoting this ancient art form, it also presents a range of challenges that need to be addressed to ensure its success. Additionally, as the landscape of cultural digitalization continues to evolve, new opportunities and directions will emerge, requiring both flexibility and innovation from stakeholders in the industry.

5.1. Preservation vs. Commercialization

One of the most significant challenges facing the digitalization of Guqin is the balancing act between preservation of its cultural and artistic integrity and the demands of commercialization. The Guqin, as a symbol of Chinese heritage, carries a deep philosophical and historical significance. Its music is often tied to spiritual, academic, and artistic expressions that transcend simple entertainment. As such, there is a risk that commercialization efforts, such as monetizing through online courses, concerts, and merchandise, could undermine the purity of the tradition or lead to a diluted representation of the instrument.

In order to address this challenge, it is essential that stakeholders focus on maintaining the essence of Guqin while exploring new ways to present it to a broader audience. This requires collaboration between traditional Guqin masters, educators, cultural preservationists, and digital experts. Efforts should include developing guidelines that help ensure the respectful representation of Guqin music and culture in digital content, and distinguishing between authentic cultural representation and commercialized interpretations [9].

5.2. Technological Barriers and Accessibility

Although technology offers numerous possibilities for enhancing the Guqin experience, there are barriers to entry in terms of both accessibility and the digital infrastructure required to support such endeavors. Many traditional Guqin players may lack access to advanced technology or may not be well-versed in digital tools. Additionally, the creation of high-quality digital content, such as professional-level recordings, virtual concerts, or educational materials, demands significant investment in equipment, expertise, and time [10].

The solution lies in creating more accessible and user-friendly platforms and tools for Guqin practitioners, regardless of their technical background. This could include simplifying the process of recording, editing, and distributing content, and offering affordable resources for digital learning, such as smartphone apps or online software that allow for easy creation of lessons or performances. Moreover, government support and funding for digital cultural initiatives could help reduce the economic burden of adopting these technologies for small-scale Guqin performers and educators.

6. CONCLUSION

This study aimed to explore the impact of digital learning platforms on the education of traditional Chinese music, particularly guqin. By investigating both quantitative data from digital learning tools and qualitative insights from guqin students, we gained a deeper understanding of the role of technology in enhancing traditional music education [11]. The findings show that digital platforms significantly contribute to students' learning progress, engagement, and overall experience.

The data analysis indicated that students using digital platforms exhibited higher rates of course completion and improved retention of guqin techniques compared to those relying solely on

traditional face-to-face instruction. Features such as video tutorials, progress tracking, and interactive quizzes were found to be the most effective in supporting student learning. Moreover, the survey responses revealed that students valued the flexibility and accessibility of online resources, especially during the ongoing global shifts toward online education. However, despite the positive outcomes, certain challenges, such as the lack of personalized feedback and the difficulty in mastering complex techniques through video alone, were also noted.

This research highlights the potential of digital learning tools to bridge the gap between traditional arts and modern technology. By offering flexible and accessible learning environments, digital platforms provide students with more opportunities to practice and refine their skills at their own pace. Moreover, this study underscores the importance of developing customized learning experiences, combining traditional teaching methods with technological innovations to create a more comprehensive and engaging educational experience. It also contributes to the growing body of knowledge on the integration of technology into the arts, offering insights that can inform future digital education initiatives for traditional music and other cultural subjects.

While the study yielded promising results, it is important to recognize several limitations. The sample size of students and platforms analyzed was relatively small, which may limit the generalizability of the findings. Additionally, the study was primarily focused on video-based learning tools, leaving out other types of digital resources such as virtual reality or gamified learning platforms, which could further enhance guqin education. Further research is needed to explore these possibilities and assess their effectiveness [12].

Based on the findings, several recommendations can be made for enhancing digital learning platforms for guqin education. First, integrating more interactive features such as real-time feedback from instructors or AI-powered tutoring systems would help address the lack of personalized guidance. Second, creating community-based learning environments, where students can share experiences, participate in group discussions, and receive peer feedback, could increase engagement and motivation. Lastly, combining multiple digital tools, such as augmented reality for virtual instrument interactions or gamification to increase practice time, could offer more immersive and effective learning experiences.

The next steps in this research involve expanding the sample size and incorporating a wider range of digital learning tools to gain a more comprehensive understanding of their impact on guqin education [10, 12]. Additionally, longitudinal studies could be conducted to track long-term learning outcomes and assess the sustainability of digital platforms in traditional music education. By continuing to explore the integration of digital tools in this field, we can pave the way for a more robust, accessible, and engaging approach to preserving and teaching traditional arts in the digital age.

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