

Research on AI-Driven Digital Exhibition Curation and Dissemination in Private Universities

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Abstract

Against the backdrop of the in-depth advancement of digital transformation in higher education, campus exhibitions in private colleges and universities have become an important carrier for carrying the cultural connotations of the campus, showcasing the school's distinctive features and achievements in talent cultivation, and also a key window for external communication and brand promotion. At present, most exhibitions of private colleges and universities still follow the traditional offline static mode, which generally has prominent problems such as monotonous and rigid display forms, lack of novelty in content presentation, insufficient integration of online and offline, and limited coverage of cultural dissemination. It is difficult to meet the development needs of the digital age. The rapid development of artificial intelligence technology provides a brand-new path and technical support for the innovation of exhibition models in private colleges and universities. Based on the educational positioning, unique characteristics and existing resource conditions of private colleges and universities, this article systematically analyzes the practical value of applying artificial intelligence to digital exhibitions in colleges and universities, sorts out the shortcomings and deficiencies of traditional exhibition models, and constructs implementation paths and optimization strategies for AI digital exhibitions that are suitable for the actual situation of private colleges and universities from multiple dimensions such as intelligent curation, content innovation, all-domain dissemination and operation and maintenance management.

Keywords

AI; Private Colleges and Universities; Digital Exhibition; Curation and Dissemination.

1. Introduction

Digital technology is highly integrated with higher education, and the digital era provides an opportunity for university history museums to achieve a functional leap from 'historical and cultural displays' to 'value transmission,' deeply grasping its educational value[1]. University history culture is the foundation and core of campus culture, carrying the important function of cultivating people through culture in talent development[2]. Private colleges and universities are an important part of China's higher education system. They have flexible mechanisms and can respond quickly to market demands. They have a certain degree of initiative in the digital construction of campuses. However, due to factors such as limited operating funds, shortage of professional and technical talents, and weak technical accumulation, the overall level of school history exhibition construction is relatively low, making it difficult to fully play the core role of cultural education, brand building, and international exchanges. The current traditional display methods of school history museums are rather conventional, lacking interactivity and interest, making it difficult to meet the needs

of modern visitors[3]. The rapid development of artificial intelligence and digital intelligence technologies has provided a new path for private colleges and universities to solve the problem of exhibition construction. Digital and intelligence-driven approaches can help university history museums strengthen the construction of digital resources, innovate resource utilization models, and expand the connotation and extension of education[4]. The digital age effectively fills this development gap. Studying university history museums from a digital perspective provides new ideas for exhibition optimization and experience upgrading[5]. Digital exhibitions can break through the limitations of time and space and reduce operating costs, which is highly consistent with the efficient, flexible and low-cost educational demands of private colleges and universities. This article, in light of the current situation and actual demands of private colleges and universities, systematically analyzes the application value of AI technology, sorts out the predicaments of traditional exhibitions, explores feasible application paths, and provides references for the high-quality development of their digital exhibitions.

2. Application Value of AI in Exhibitions of Private Universities

The deep integration of AI technology and digital exhibitions in private colleges and universities closely revolves around the educational characteristics and actual pain points of private colleges and universities, achieving a comprehensive improvement in multiple values, which is specifically reflected in the following four aspects:

Traditional physical exhibitions are constrained by fixed venues and opening hours, resulting in a relatively narrow audience range. AI technology supports digital exhibitions through cloud deployment and multi-terminal adaptation, enabling various groups such as alumni, potential students, and partner enterprises to visit online without being restricted by time and location, thus achieving cross-regional dissemination of campus culture. The AI intelligent recommendation algorithm can proactively push relevant exhibition content based on users' interest preferences, transforming information transmission from "passive reception" to "active reach", which can effectively enhance the accuracy and actual effect of communication.

Private colleges and universities have achieved their own unique results in areas such as industry-education integration and innovation and entrepreneurship. However, traditional exhibitions mainly display these achievements through pictures, texts and physical objects, making it difficult to present them vividly and intuitively. The application of AI technology, especially 3D modeling, virtual simulation and generative AI, can transform abstract educational achievements into interactive digital content. AI technology supports the dynamic update of exhibition content, facilitating schools to incorporate their latest educational achievements into the exhibition in a timely manner and fully demonstrate their development vitality.

Most private colleges and universities are positioned to cultivate applied talents. Ai-enabled digital exhibitions provide a good scene support for practical education: students can fully participate in the curation, content production and other links, master cutting-edge skills such as the use of AI tools, and achieve the goal of "promoting learning through exhibitions". Meanwhile, functions such as intelligent Q&A and personalized recommendations transform the audience from one-way viewing to two-way participation, truly playing the role of "educating people through exhibitions". This model that combines cultural dissemination with talent cultivation is highly consistent with the educational positioning of private colleges and universities.

Fund shortage is a common challenge confronting numerous private universities. Traditional physical exhibitions require high investment, suffer from poor reusability and incur considerable operational costs. By contrast, AI-based digital exhibitions can be used

sustainably, with contents updated via software rather than repeated production of physical exhibits. Intelligent operation and maintenance systems automatically monitor exhibition operations and cut labor costs for routine maintenance. Digital storage also lowers the risk of exhibit damage. Such low-cost and sustainable exhibition modes have gained increasing popularity among private universities.

3. Current Status of Traditional Exhibition Modes in Private Universities

At present, most private universities still adopt traditional physical exhibitions, while only a small number have attempted digital exhibitions, which are still in the initial stage of development. The main problems are summarized below:

3.1. Outdated Exhibition Planning and Slow Content Updating

Most previous exhibitions adopted a "fixed venue + static display board" model, with curation relying heavily on manual work. This approach not only resulted in long cycles and low efficiency, but also led to a high degree of content homogenization. Exhibition themes were mainly limited to conventional sections such as university history and honorary displays, offering little in-depth coverage of specialized programs or innovative projects. Meanwhile, the frequency of content updates was extremely low—some university exhibitions have remained unchanged since their establishment, failing to reflect the latest developments of the institution and gradually losing their appeal to visitors.

3.2. Single Communication Channels and Limited Audience Coverage

Physical exhibition visitors are limited to on-campus teachers and students and a few visiting individuals. Although some universities have launched online exhibitions, they are merely simple copies of the physical exhibitions, lacking interactive design and recommendation functions, and their dissemination depends on the school's own publicity efforts. In addition, private universities generally lack the data tracking and analysis capabilities for exhibition dissemination, making it impossible to optimize based on audience feedback, resulting in exhibitions not effectively serving the school's strategic development goals such as enrollment promotion and school-enterprise cooperation.

3.3. Superficial Technology Application Due to Shortages of Funds and Talents

Building a high-quality AI digital exhibition requires sufficient funding and professionals with technical expertise, and many private universities face a certain amount of practical pressure. In practice, some universities purchase low-cost 'template-based' exhibition systems, which can only achieve image uploads and simple panoramic tours, while lacking core AI functions such as intelligent recommendations and virtual explanations. This state of 'having digital content but no intelligence' fails to realize the true value of AI technology.

3.4. Insufficient Interactive Experience and Unfulfilled Educational Value

Conventional exhibitions in the past only allowed for "viewing," with visitors passively receiving information and lacking a sense of participation. Even when some exhibitions were equipped with touchscreens or audio guides, the interaction remained merely at a shallow level. For private universities aiming to cultivate application-oriented talents, such exhibitions fail to fulfill the function of "educating through exhibition." Students are denied hands-on practical opportunities and personalized learning guidance, which seriously disconnects from the university's talent cultivation system.

4. Technical Paths for AI-enabled Digital Exhibitions in Private Universities

Targeting the above problems of traditional exhibition modes, this study constructs an AI-centered empowerment system from four perspectives: exhibition planning optimization, content innovation, communication upgrading and management improvement, so as to help digital exhibitions in private universities break through developmental bottlenecks.

4.1. Exhibition Planning Optimization: Replacing Empirical Judgment with Data-driven Decision-making

At the initial stage of exhibition planning, AI big data analytics are adopted to mine basic information including official website access data, hot topics in admission consultation and graduate employment destinations. This helps accurately identify audience concerns and determine exhibition themes and layout. Based on knowledge graphs and collaborative filtering algorithms, intelligent exhibition planning auxiliary systems automatically analyze the relevance of various exhibits and generate multiple layout schemes. AI simulation technology previews visiting routes and visitor dwell time, improving the scientificity and innovativeness of exhibition planning and conforming to the efficient and flexible operational features of private universities.

4.2. Content Innovation: From Static Display to Immersive Experience

AI-driven 3D modeling and virtual simulation technologies are applied to build digital twins of campuses and laboratories, delivering immersive visiting experiences. AI-powered virtual commentators with real-time Q&A and multilingual functions greatly enhance exhibition interactivity and professionalism. Generative AI assists staff in automatically producing exhibition manuscripts, posters, short videos and other basic materials, substantially reducing content production costs and workload. More importantly, AI enables dynamic updating and personalized generation of exhibition contents. Differentiated exhibition versions can be customized for various visitor groups to realize personalized exhibition for every visitor. Diversified interactive modules are also embedded to strengthen visitor participation.

4.3. Communication Upgrading: From Extensive Promotion to Precision Reach

A digital exhibition middle platform is established to distribute exhibition contents to multiple channels including university official websites, WeChat official accounts, short video platforms and mini-programs with one click, forming a matrix communication system. In accordance with user portraits, AI recommendation engines push targeted contents: major introductions to senior high school students, university-enterprise cooperation achievements to enterprises, and institutional developments to alumni. AI short video generation tools automatically extract exhibition highlights and produce promotional short videos rapidly to expand influence. Background systems collect real-time data from all communication channels and form a closed loop of communication-feedback-optimization, enabling private universities to improve brand awareness and influence at low costs.

4.4. Management Improvement: Intelligent Operation and Maintenance for Sustainable Operation

AI intelligent monitoring systems conduct all-weather automatic inspection of exhibition platforms, detect access anomalies and invalid links in real time, and implement automatic troubleshooting to reduce reliance on full-time technical staff. AI technologies are used for automatic classification, tagging and backup of digital assets, building a retrievable knowledge base for convenient management. AI content review tools automatically screen illegal information and potential copyright risks to ensure standardization and security of exhibition

contents. With the above measures, private universities can realize low-cost and standardized operation of digital exhibitions amid limited human and financial resources and guarantee long-term stable operation.

5. Conclusion

This research indicates that AI technologies effectively address the deficiencies of traditional exhibitions in private universities in terms of time and space constraints, operational costs, interactivity and communication effects, and exhibit prominent advantages in cultural dissemination, achievement presentation, practical education and intensive resource utilization. The AI empowerment system constructed from four dimensions — exhibition planning, content creation, communication and management — helps improve the quality and efficiency of digital exhibitions at low costs. Private universities should proceed from their actual conditions, increase investment in funds and talent cultivation, deepen university-enterprise cooperation, build distinctive exhibition brands, strictly comply with data security and content norms, and promote the long-term and sound development of digital exhibitions.

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