

Research on Project-based Teaching and Cultural Empowerment of Scenery Design for Liaoning Regional Theme Short Plays with the Intervention of Digital Media

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Abstract

In the political environment driving the development of Liaoning's micro-series industry, set design is gradually becoming a key material carrier for the integration of digital culture and tourism. Digital media technology reconstructs the design process of filming locations and also imposes new practical demands on the training of application-oriented talents in design science. With the increasing popularity of Liaoning's micro-series school, the market's demand for space design talents-who combine an understanding of regional culture, digital design skills, and awareness of industrial practice-is rising. This article uses project-based teaching as a research method to explore practical ways to integrate regional symbols, such as Liaoning's industrial heritage, Guandong folk culture, and intangible cultural heritage, into short film set design. The study concludes that project-based teaching in set design can break the internal connection between class design, digital media practice, and the dissemination of regional culture. Through virtual filming locations and the interaction between virtual and real scenes, multiple values such as talent training, translation of regional culture, and promotion of the tourism industry can be achieved. Addressing current issues like superficial interpretation of regional culture, insufficient industry-education collaboration, and imbalanced use of digital tools, this article outlines the complete practical implementation logic and provides references for the integration of design science with the local digital cultural industry.

Keywords

Digital media, short drama set design, project-based teaching, Liaoning regional culture, cultural empowerment.

1. Introduction

Microdrama as an emerging cultural economy created by digital media has expanded continuously in recent years and has become an important part of the production of online cultural content. From the point of view of the development of industry, microdramas no longer fulfill the simple narrative functions of entertainment, Local governments and cultural and tourism agencies have become increasingly aware of the potential for microdrama to spread in urban cultural advertising and the design of regional IP, and everywhere they have promoted the deep integration of microdramas with local cultural and tourism resources[1]. Liaoning Province has introduced a variety of culture support policies to promote the creation of short dramas on local themes, on the integration of "short dramas + cultural trips" and "short dramas + intangible cultural heritage" to promote and focus on the creation of micro-short dramas with northeastern geographical knowledge. The General Administration for Radio and Television has launched the creative programme "Follow the Micro-Drama to Travel" "created to further accelerate the trend of the expansion of micro-drama scenes into the cultural and travel consumer space .

The teaching in the space scene of the design discipline of domestic universities mainly focuses on interior design, landscape design, traditional performing arts and other directions oriented towards the micro-short theatre industry. Under the traditional classroom teaching model, the course proposals are variedly oriented towards idealized art, there are no real industry conditions, pupil creation prefers lightly visual forms of expression, the deep meaning of regional culture is not sufficiently dug out, and the practical results of the final product are clearly separated from the real needs of industry [2]. At the same time, digital media tools such as AI scene generation, digital twins, virtual screenings and real-time rendering intervene throughout the entire process of creating scenes, from the early creative idea, the comparative presentation of several programs to the medium-term screening of scenes and later references. Digital technology is changing the entire work chain of the stage industry, which requires that the design practitioners of the new era at the same time have comprehensive competence such as the interpretation of cultural texts, the application of digital technologies, cross-agency project cooperation and basic industrial knowledge [3].

Project-oriented teaching is based on real project tasks and focuses on integrating knowledge and competencies in the fulfillment of project tasks. This fits very well with the industry characteristics of the short theatre industry, the short cycle, the collaboration of several roles and the intersection of technical culture [4]. Liaoning has very rich regional cultural resources, the modern industrial heritage, Guandong folk customs, the culture of the Red Revolution, the intangible cultural heritage of Liaoxi and the Liaodong region together form a diverse regional cultural image, provides abundant creative material for the short dramas with geographical themes. But how to transform these thick indigenous cultural resources into spatial scenes that adapt to the logic of short-game storytelling and avoid simple symbols, is a real puzzle that design lessons have to solve. How to Implement the Creative Transformation of Liaoning Region's Cultural Resources with the Help of Digital Media Through a Project Teaching Model while Achieving Double Benefits raising the quality of higher education and empowering local culture is an academic issue of practical value. This article uses the case analysis and the practice research method of the action, combining the practice of the curriculum reform of the Academy of Space Design, analyzes the intrinsic logic of digital media interference in the design of the teaching of short dramas, proposes a way of implementation, adapted to the current state of local industry in Liaoning to provide ideas for the reform of the integration of industry and teaching in the field of design.

2. Relevant Concepts and Research Status

2.1. Definition of Central Concepts

Digital media in use for the set design of short films: Utilizing digital tools such as AI-based scene generation, virtual rehearsals, digital twins, and real-time rendering to contribute to a comprehensive creation model that encompasses creative development, virtual construction, and the creation of hybrid realities for short film scenes. Unlike traditional physical sets that only meet filming needs, this model considers both the narrative requirements of the short film and potential reuse for cultural and tourism scenarios. Digital media enables rapid iteration of multiple conceptual versions, the digital translation of regional cultural symbols, and the connection between virtual scene design and physical space implementation [5]. Regional short film scenes: Based on local storytelling themes from Liaoning, such as industrial memories, Guandong folk customs, or red-culture themes, various regional cultural symbols are extracted to support the filming of local short films while planning spaces for potential reuse in cultural and tourism scenarios. It is not just pure artistic decoration but also a spatial carrier of regional cultural stories. Project-based learning: Using real or highly simulated short film scene projects as teaching vehicles, where students work in groups through all steps from regional cultural

research to creative concept development, digital media production, and complete conceptual results. The entire process is guided by a combination of internal professional instructors and industry outsiders, with the completeness of project results, the quality of cultural representation, and industry possibilities serving as central evaluation criteria [4].

Cultural empowerment: It encompasses two interconnected levels of meaning. The first is curriculum-level cultural empowerment, which involves enhancing students' abilities to understand, interpret, and convey Liaoning's local culture during the training process. The second is industry-level social empowerment, where the results of scene production are disseminated online through short films and implemented offline in cultural and tourism scenarios, promoting the spread of local culture and the value creation of the cultural and tourism industry [6].

2.2. Inventory of the Research Status

Current domestic academic research has produced a considerable number of results on micro-short series, but the distribution of research perspectives is relatively concentrated. Existing studies on short film set design mostly fall within the realm of film and theater, focusing on shooting techniques, camera usage, and narrative expression forms. In the field of design sciences, research tends to concentrate more on traditional theater stage sets, while didactic reform research on digital set design for the currently booming micro-short series remains relatively limited. Some art universities have already carried out practice-oriented activities related to short films and introduced the dual-mentor model to enhance students' practical skills. However, most practices focus more on training film music and artistic abilities, placing less emphasis on imparting regional culture as the central goal of course development [2].

In the field of interdisciplinary research on "short films + culture and tourism," most existing studies discuss the strategies for cultural and tourism development of micro-series filming locations from the perspectives of the cultural industry and media dissemination, analyzing business models such as traffic conversion and IP exploitation [1]. However, there are fewer approaches that examine, from the perspective of university design education, how the stage design works produced in class can be connected with the local industry and how teaching outcomes can be transformed into usable local cultural resources. Overall, there are still significant research gaps in systematic teaching practices that combine digital media tools, project-based teaching models, stage design for short films with regional themes in Liaoning, and the enhancement of local culture, which also represents the innovative approach of this work.

3. The Real Contradictions of Project-oriented Teaching for Short Play Scene Designs under the Integration of Digital Media

Given the current state of the local short film industry in Liaoning and the observations during the course internship, it is evident that project-oriented teaching for rural-themed short films in Liaoning primarily presents four practical contradictions.

First, the set design emphasizes visual appearances, and the application of regional cultural symbols tends to be superficial. When creating sets with regional motifs, students are prone to falling into the trap of symbolic composition. They tend to simply stack external visual symbols like folk costumes or old industrial objects, without conducting in-depth research on Liaoning's historical context, the logic of the local population's social life, or the inner core of regional spiritual essence. The result is sets that merely represent a simple assembly of various elements, lacking complete narrative logic or depth, making it difficult to truly convey the unique regional cultural spirit of Liaoning [6].

Secondly, there is a polarization issue in the application of digital media tools. Some students tend to think conservatively and adhere to the hand-drawn creation model, investing a lot of time in sketching, with low efficiency in concept iteration, making it difficult to adapt to the fast-paced production rhythm of the short film industry that involves multiple revisions. At the same time, some students excessively rely on AI for direct generation of complete scenes, skipping the preliminary on-site cultural research. Works generated by AI often exhibit problems such as confusing forms and lack of regional characteristics, leading to a technical overuse without cultural relevance [3]. Digital media, which should serve as creative aids, have instead become shortcuts for the thinking process.

Thirdly, the traditional teaching concept does not align with the project logic of the short film industry. Micro-short film projects inherently feature characteristics such as tight timeframes, clear budget constraints, and multidisciplinary collaboration. In contrast, traditional courses often rely on idealized hypotheses and rarely consider realistic constraints like cost control, client revisions, and teamwork. Students receive little practical training in full project workflows. While the submitted designs demonstrate sufficient artistic quality, the lack of feasibility means they fail to directly bridge the gap to industrial requirements [4].

Fourthly, the implementation chain of teaching outcomes is inadequate, making it difficult to truly achieve cultural enhancement. In most cases, course assignments merely serve as exam materials and end with submission. Higher education institutions lack stable channels to collaborate with local short film companies or cultural and tourism enterprises, making it hard to showcase and disseminate outstanding teaching results externally. The value of regional culture remains confined to classroom scenarios and fails to achieve broader cultural dissemination or social strengthening. There is a significant transformation barrier between the design of teaching outcomes in higher education and the needs of the local cultural industry.

4. Implementation Paths of Project-based Teaching under the Orientation of "Technology-Culture-Industry"

Based on the practical implementation of the curriculum in the design field and considering the aforementioned real contradictions, teaching practice integrates cultural decoding, digital simulation, project-based creation, outcome implementation, and industrial application into a unified practical logic. The teaching process first guides students to break free from the habit of simple symbolic composition, organizing field research visits to industrial sites in Liaoning, folklore villages in Guandong, and red-culture historical sites, collecting unique visual and textual materials on architectural forms, traditional objects, and life scenes, and instructing students to carefully distinguish the differences between external visual symbols and internal regional cultural spirits to solidify the cultural foundation of set creation [6]. On this basis, the supportive value of digital media is rationally utilized, with virtual set creation, AI-supported simulation, and digital twin simulation positioned as iterative creative tools. It is explicitly required that students begin digital scene creation only after completing cultural research to avoid the lazy behavior of directly using AI to generate finished products, thereby circumventing the spatial logic distortion caused by AI-generated content and truly leveraging digital technologies to contribute to regional cultural communication [3]. The course adopts a dual mentor model of "in-house professional instructors + industrial artist supervisors," assigns project boards with clear narrative guidelines and budget constraints, and students simulate the complete workflow of a real film crew in group work, including internal communication, multiple design revisions, and cost calculations, thereby fostering their project team awareness and industrial thinking during practice [2]. The course ultimately delivers a comprehensive project outcome package, including a regional cultural research report, digital virtual set scenes, a physical construction execution plan, and a post-film production cultural

and tourism space renovation plan. The set concepts must not only meet the narrative and camera requirements of the short film but also prepare the conditions for future transformation into a cultural and experiential space. The value of the teaching extends beyond task submission, as outstanding set concepts are actively presented to the Liaoning Short Film Industry Zone and local cultural and tourism enterprises, integrating teaching outcomes into industry interactions and creating a closed loop from course practice to regional cultural promotion. The entire practical approach considers in-depth exploration of the cultural core, appropriate application of digital technologies, and the actual requirements of the local industry, achieving an organic unity of technology, culture, and industry while simultaneously implementing course tasks and exploring ways for university design disciplines to promote local culture [7].

5. Conclusion

The rapid development of the microdrama industry opens up new areas for the industry-education integration in the design discipline. Liaoning's rich and diverse regional cultural resources provide a unique creative foundation for creating short-dramas with local themes. The projection of the short game under digital media intervention is not simply the introduction of various digital software tools into the classroom, rather the project practice as a bond linking higher education, the translation of regional culture and the development of the local cultural industry with several goals.

Of course, the promotion of teaching reform in regional issues will be affected by the limited resources for cooperation between schools and businesses and the differences in the individual competencies of the students. The future design discipline should continuously deepen and deepen connections with the local short-term theatre and cultural travel industry, continuously improve the curriculum diversity assessment system, actively build the Liaoning Region Culture Digital Resource Bank, continuously explore the viable model of the digital culture industry of design teaching services in Liaoning, and finally the mutual benefits of application-based Achieve talent training at universities and the dissemination of local cultural heritage.

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