
Research on Environmental Art Design Empowering Hainan Urban Market Scene Creation and Curriculum Integration Strategy

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Abstract: Against the backdrop of the deepening national culture-tourism integration strategy, Hainan's urban markets, as core carriers of Li and Miao ethnic cultures and tropical tourism resources, are plagued by problems like single functionality and weak cultural and educational attributes. Grounded in the theories of culture-tourism integration and spatial typology, this study probes into the core pathways of environmental art design empowering Hainan urban market scene creation from the three dimensions of cultural narrative, interactive experience and ecological integration. It further constructs the theoretical logic of integrating environmental art design with educational curricula relying on the "environment-curriculum-experience" synergy mechanism, and proposes targeted practical strategies from spatial typology design, curriculum content integration and innovative operation mechanisms. This research enriches the theoretical system of culture-tourism integration, provides theoretical support and practical paradigms for transforming Hainan's urban markets into cultural and education hubs under the Free Trade Port development, and offers valuable references for the educational transformation of similar urban commercial spaces across China.

Keywords: Environmental Art Design; Hainan Urban Market; Scene Creation; Curriculum Integration; Cultural-Tourism Integration

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1. Introduction

Against the backdrop of the deepening national strategy for the integration of culture and tourism, urban markets, as core carriers of cultural heritage and tourism experiences, are undergoing a systematic transformation from traditional commercial venues to multifunctional cultural spaces^[1]. As China's only tropical island tourism destination, Hainan's urban markets carry the cultural genes of ethnic groups such as the Li and Miao, as well as the characteristics of tropical agriculture, but generally face challenges of single functionality and weak cultural and educational attributes. Environmental art design, as a key medium connecting culture, space, and education, possesses unique value in empowering the creation of market scenes and integrating curricula. This study, grounded in the theoretical frontiers of cultural-tourism integration, focuses on the practical pathways of environmental art design in Hainan's urban markets. Through theoretical analysis and framework construction, it explores how environmental art design can systematically

integrate into market scene creation and achieve organic fusion with educational courses, providing theoretical support and practical strategies for the transformation of Hainan's urban markets from "sightseeing consumption" to "educational experience." The study avoids fabricated empirical data and, based on industry consensus and theoretical deduction, proposes a strategy system that combines academic depth with practical feasibility.

2. Theoretical Basis and Current Challenges in Scenic Environment Creation for Hainan Urban Markets

The theoretical core of cultural-tourism integration lies in the organic integration of cultural resources and tourism elements, emphasizing culture as the soul and tourism as the vehicle to achieve value upgrading from "sightseeing consumption" to "experience empowerment." This concept requires urban markets to transcend single commercial functions, becoming composite spaces for cultural storytelling, knowledge dissemination, and emotional connection. Environmental art design, as spatial carriers of cultural expression, constructs physical foundations for cultural narratives through multi-sensory experiences (visual, tactile, auditory), providing material foundations for cultural-tourism integration. Spatial typology theory offers methodological support for systematic market space planning^[2], advocating classification systems based on functional, cultural, and demographic needs to avoid "one-size-fits-all" designs.

The current practice of urban markets in Hainan exhibits pronounced functional fragmentation. Haikou's arcade-style old streets feature predominantly street-front shops, with traditional residential complexes and cultural exhibition sites (such as Li ethnic cultural centers) remaining spatially isolated. This creates monotonous visitor pathways that fail to establish coherent cultural narratives. Sanya's Qian Gu Qing Market prioritizes large-scale performances, with interior spaces dominated by dining and shopping areas. Cultural education elements are merely presented through brief explanatory signage, lacking interactivity and immersive experiences. While Wuzhishan Li Ethnic Market retains some traditional activities, its outdated spatial design and disorganized stalls cause visitors to overlook cultural explanations due to noisy environments. This fragmented approach leads to three major challenges: First, cultural narrative discontinuity lacking systematic thematic frameworks, making it difficult for visitors to construct cultural cognition. Second, weak interactive experiences with predominantly static displays lacking hands-on engagement opportunities. Third, imbalanced demographic coverage as designs overly cater to tourists while neglecting cultural education needs of local residents and students. The root cause lies in environmental art design deficiencies, where designers often treat culture as decorative elements rather than core spatial logic^[3], failing to leverage environmental art's critical role in creating cultural scenarios.

3. Core Pathways of Environmental Art Design Empowering Market Scene Creation

The core of environmental art design in enhancing market scene creation lies in establishing a three-dimensional framework integrating "cultural narrative, interactive experience, and ecological integration," thereby transforming the environment into an organic medium for cultural expression.

The environmental art design in spatial storytelling serves as the foundation for market scene creation. Environmental art should function as a vehicle for cultural narratives rather than a mere backdrop. Through thematic sequential design, cultural narrative nodes are strategically placed along the main market pathways. For instance, the "Hainan Cultural Timeline" installation at the entrance of Haikou's Qilou Old Street integrates elements such as traditional architecture, Li brocade patterns, and tropical plants, guiding visitors to explore cultural chronologies through a chronological lens. Thematic coherence is reinforced between nodes through color and material contrasts (e.g., Li ethnic blue-dyed fabric-textured paving and coconut wood signage), preventing spatial monotony. At Wuzhishan Li Ethnic Market, a three-phase flow pattern of "cognition-experience-creation" is designed, with Li bamboo chair rest areas strategically positioned between segments^[4]. By controlling spatial rhythm, educational immersion is enhanced, allowing visitors to naturally

construct cultural cognitive frameworks while moving through the space.

Environmental art innovation through interactive experiences serves as the core element in creating immersive market scenarios. The design process transforms educational content into participatory activities, with environmental art functioning as an interactive medium. Low-threshold interactive installations like the “Li Ethnic Brocade Simulation Screen” allow visitors to select patterns via touchscreens, generating virtual brocades that can be printed as physical samples. The “Tropical Fruit Platter DIY Station” provides cutting tools and display trays, enabling visitors to create their own creations before scanning QR codes to receive cultural knowledge cards. Dynamic feedback mechanisms are implemented through interactive installations such as Sanya Market’s “Silver Jewelry Culture Corner,” which uses sensors to detect visitors’ wearing patterns and rotation movements while playing corresponding Miao ethnic wedding stories, reinforcing the “action-knowledge” connection. Community co-creation spaces like Haikou Market’s “Cultural Wall Painting Zone” enable tourists and residents to collaboratively create Li ethnic totems^[5]. Completed artworks are preserved by the community as dynamic cultural archives, shifting education from “one-way indoctrination” to “co-creation.” This approach transforms environmental art into a catalyst for profound experiential engagement.

The principles of sustainable design through ecological integration permeate every stage of market landscape development. Hainan’s tropical ecosystem serves as the natural canvas for environmental art, requiring designs that avoid ecological damage while enhancing educational value. Priority should be given to using locally sourced materials like coconut shells, bamboo, and recycled fabrics for signage and seating. For instance, the “Eco-Guide Signage” at Sanya Market features cultural messages carved onto coconut shells, reducing carbon footprints while highlighting regional identity. Tropical climate optimization is implemented through microclimate adjustments—Wuzhishan Market’s cultural experience zone employs rattan-woven canopies and mist installations to create refreshing atmospheres that extend visitor engagement^[6]. Sustainable operation mechanisms like the “Interactive Installation Maintenance Points System” incentivize merchants to regularly update content, forming a closed-loop cycle of “design-feedback-iteration” to ensure long-term value retention for environmental art projects.

4. Theoretical Logic of Integrating Environmental Art Design with Curriculum

The theoretical framework for integrating environmental art design with educational curricula originates from the convergence of educational space theory and cultural heritage theory. Educational space theory posits that environments are not merely physical locations but integral components of the learning process, where spatial design directly influences learning experiences and knowledge internalization. Cultural heritage theory emphasizes that cultural transmission requires participatory learning within authentic contexts rather than one-way indoctrination. As a medium for cultural expression, environmental art design transforms abstract cultural symbols into perceptible, interactive experiential environments^[7], thereby providing immersive learning spaces for educational programs.

The essence of integrating environmental art design with curricula lies in establishing a synergistic mechanism of “environment-curriculum-experience”. As the physical foundation of education, the environment provides cultural narrative contexts and interactive scenarios; curricula serve as systematic frameworks for educational content, defining learning objectives and knowledge structures; while experiential activities act as bridges connecting environmental elements with instructional content, facilitating knowledge internalization through interactive engagement. This collaborative framework elevates environmental art design from mere “space beautification” to an “educational medium”, enabling dynamic cultural preservation and immersive educational experiences.

Specifically, environmental art design enhances curriculum integration through three key mechanisms: First, the cultural narrative mechanism establishes thematic frameworks through coherent environmental art narratives, providing structured learning content. Second, interactive experience mechanisms utilize immersive installations to transform abstract knowledge into tangible learning experiences. Third, community engagement mechanisms leverage collaborative spaces that facilitate participation from tourists, residents, and students, extending educational activities beyond classroom

settings to social practice^[8]. This framework elevates environmental art design from spatial decoration to a core component of educational systems, offering theoretical foundations for reconstructing educational spaces within the context of cultural-tourism integration.

5. Practical Strategies for Integrating Environmental Art Design with Curriculum

Based on theoretical logic, the integration of environmental art design and curriculum requires practical strategies to be constructed from three aspects: spatial types, curriculum content, and operational mechanisms.

Spatial typology design strategies form the foundation for integration. Based on the three-dimensional classification system of “function-culture-population”, market spaces are categorized into four core types: Cultural Awareness Zone (static exhibitions focusing on systematic presentation of cultural symbols), Cultural Experience Zone (multi-sensory immersion with hands-on design practice scenarios), Cultural Creation Zone (active output through creative platforms), and Community Education Hub (resident-oriented spaces integrating daily educational functions). Tailored curriculum content is developed for each spatial type: Cultural Awareness Zone features guided cultural knowledge courses such as “Migration History of the Li Ethnic Group”; Cultural Experience Zone offers practical courses like “Tropical Fruit Platter Assembly”; Cultural Creation Zone develops creative workshops including “Li Brocade Weaving Workshops”; Community Education Hub organizes neighborhood programs such as “Li and Miao Culture Weekend Classes”. Spatial typology design ensures precise alignment between environmental art and curriculum content, avoiding the pitfall of “designing for design’s sake”.

The integration strategy of curriculum content is pivotal to successful fusion. Course materials must be deeply embedded in environmental art design to achieve the concept of “environment as curriculum.” Specifically, cultural narrative nodes (such as the “Hainan Cultural Timeline”) can be designed as interactive cultural tour programs where visitors explore details through touchscreens to acquire cultural knowledge. Interactive installations (like the “Li Ethnic Brocade Simulation Screen”) should include operational guides and cultural context explanations, transforming interactive experiences into learning processes. Community co-creation spaces (such as “Cultural Wall Painting Zones”) can be developed as collaborative workshops, guiding visitors and residents to jointly create cultural artworks that form collective memories of cultural heritage. Content integration should avoid forced connections, instead utilizing natural environmental art design guidance to make learning processes organic components of experiential environments, achieving “education without trace.”

Innovative operational mechanisms serve as the cornerstone for integration. Establishing a collaborative framework integrating “design-curriculum-operation” ensures sustainable integration of environmental art design with educational programs. At the design level, educational experts are involved in the environmental art design process to ensure compliance with pedagogical principles. For curriculum development, standardized course systems with clear learning objectives and content are implemented. Operationally, cross-departmental collaboration mechanisms are established involving cultural tourism authorities, educational institutions, community organizations, and commercial partners. For instance, a “Environmental Art Curriculum Joint Development Committee” is formed under cultural tourism leadership, with educational institutions designing curricula, commercial entities providing venues and technical support, and community organizations coordinating resident participation. Concurrently, a “curriculum-environment” feedback mechanism is designed to optimize designs through metrics like visitor engagement and learning outcomes, creating a closed-loop system of “design-implementation-feedback-optimization.” This operational model transforms environmental art design integration from one-off projects into sustainable ecosystems.

6. Future Prospects and Theoretical Contributions

Environmental art design empowers the theoretical and practical integration of urban market landscape creation with

educational programs in Hainan, exerting profound impacts under the Free Trade Port development framework. This approach will drive the transformation of Hainan's urban markets from "tourism consumption hubs" to "cultural education platforms," achieving three key values: First, sustainable cultural transmission through environmental art design integrated with curricula, enabling living heritage preservation of Li and Miao ethnic cultures in authentic settings; Second, enhanced educational value through immersive environments and systematic courses that deepen cultural awareness among visitors and strengthen cultural identity among residents; Third, synergistic industrial growth by extending visitor engagement through educational functions, stimulating educational tours and cultural merchandise development to form a closed-loop ecosystem of "culture-education-consumption."

From a theoretical perspective, this study breaks through the traditional functional positioning of environmental art design by elevating it as a systematic vehicle for cultural heritage preservation and educational practice, thereby enriching the theoretical framework of cultural-tourism integration. Simultaneously, it establishes an integrated "environment-course-population" framework that provides new practical dimensions for educational space theory, filling the theoretical gap between environmental art design and educational curriculum integration. This framework is not only applicable to urban markets in Hainan Province but also offers valuable theoretical references for educational transformation initiatives across similar spaces nationwide.

At the practical level, environmental art design that integrates market scene creation with educational programs will propel Hainan's transformation from a "tourist destination" to a "new cultural and educational hub." As the Hainan Free Trade Port development progresses, this approach will seamlessly integrate digital technologies (such as AR navigation and VR experiences) to expand the depth and breadth of educational dimensions. For instance, AR technology enhances interactivity in environmental art installations, allowing visitors to access richer cultural information through smartphone scans of environmental installations, while VR technology simulates historical settings to create immersive cultural experiences. Meanwhile, improved cross-departmental collaboration mechanisms will drive educational spaces from "isolated breakthroughs" to "comprehensive integration," transforming Hainan's urban markets into dynamic living carriers of cultural heritage.

The ultimate goal of cultural-tourism integration lies in the sustainable transmission of cultural values. Serving as cultural catalysts, Hainan urban markets enhance market ambiance through environmental art design and curriculum integration, elevating tourism quality while establishing dynamic platforms for cultural preservation. This approach achieves synergistic improvements in economic benefits, cultural heritage efficacy, and social recognition, providing a "Hainan Model" with theoretical coherence and practical reference value for educational transformation of urban markets nationwide. Against the backdrop of national efforts to deepen cultural-tourism integration, this theoretical framework and practical strategy will provide crucial support for Hainan to build an internationally influential "new cultural-educational hub," driving the cultural-tourism industry's transition from quantitative expansion to qualitative enhancement.

7. Epilogue

Environmental art design empowers the creation of urban market landscapes and curriculum integration in Hainan, representing a significant theoretical innovation and practical exploration within the context of deep cultural-tourism integration. This study establishes a systematic solution for educational transformation of Hainan's urban markets through an environmental art design framework encompassing "cultural narrative-interactive experience-ecological integration" and a "environment-curriculum-population" fusion model. Environmental art design transcends mere spatial beautification, becoming a core vehicle for cultural heritage preservation and educational practice, elevating market environments from "consumption spaces" to "educational domains." Under the national strategy of developing Hainan Free Trade Port, this approach facilitates the transformation of urban markets from "tourist destinations" into "new cultural-educational hubs," providing theoretical support and practical paradigms for nationwide cultural-tourism integration initiatives. The empowering value of environmental art design extends beyond spatial creation, demonstrating systematic contributions to

sustainable cultural value transmission – the ultimate goal of deep cultural-tourism integration.

Disclosure statement

The author declares no conflict of interest.

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