How Can Learning Spaces Promote Cultural Identity Among Ethnic Minorities: An Environmental Psychology Analytical Framework

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Abstract: Under the dual pressures of globalization and modernization, ethnic minority youth face a fundamental psychological dilemma of cultural identity. While numerous cultural centers and heritage exhibition halls have been constructed, their effectiveness in promoting identity development remains limited. This paper addresses a core question: How can learning spaces effectively promote the cultural identity development of ethnic minority youth? Grounded in environmental psychology and informed by cultural identity development theory, this paper proposes an analytical framework identifying three interrelated pathways through which learning spaces influence identity: symbolic resources and cognitive activation, restorative environments and emotional support, and participatory spaces and behavioral practice. These pathways correspond to different stages of identity development from awareness through exploration to commitment. Using the Li ethnic group in Hainan, China as a case study, this paper demonstrates the application of this framework through a design proposal for a cultural learning center comprising four functional zones: entrance awakening, learning exploration, practice workshop, and community activity areas. This theoretical framework study contributes to bridging environmental psychology and cultural identity research, offering conceptual tools for designing spaces that support ethnic minority youth in constructing positive cultural identities through active participation rather than passive heritage reception.

Keywords: cultural identity development; learning space design; ethnic minority youth; environmental psychology; Li ethnic group.

INTRODUCTION

Under the dual pressures of globalization and modernization, ethnic minority youth face a fundamental psychological dilemma: they are becoming increasingly estranged from the cultural traditions of their ancestors, yet have not established a secure sense of belonging in mainstream society. This state of suspended identity is not an abstract sociological proposition but a tangible issue affecting individual psychological well-being. Wu and Ou [1] directly confirmed this in their study of Hong Kong adolescents: cultural identity confusion was significantly negatively correlated with self-esteem.

and psychological well-being. When a young person cannot clearly answer the question "Who am I?", the foundation of their psychological development is fundamentally unsettled The situation of the Li ethnic group in Hainan, China, concretizes this issue. As the earliest indigenous inhabitants of Hainan Island, located in the South China Sea, the Li people possess a cultural tradition spanning over three thousand years. Their brocade weaving techniques, boat-shaped houses, religious rituals, and oral literature constitute a unique cultural system. However, rapid social change is eroding the foundations of cultural transmission. Yu [2] noted that the innovation and promotion of Li intangible cultural heritage in the tourism industry still faces significant challenges, with the underlying cause being the disconnect between cultural heritage and modern lifestyles. A systematic review by da Silva et al. [3] on integrating indigenous knowledge into school education in developing countries identified a similar predicament: indigenous cultures are generally marginalized in formal education systems, understanding local contexts is crucial for proposing effective interventions, yet existing facilities often neglect this premise.

In response to cultural transmission crises, numerous cultural centers, museums, and heritage exhibition halls have been constructed in various locations. But to what extent do these spaces genuinely promote the formation of cultural identity? Chan et al. [4] provided important insights in their study of revitalized heritage buildings in Hong Kong: the effectiveness of heritage buildings depends on their ability to promote visitors' cultural identity and place attachment, with knowledge transfer and cultural activity participation playing moderating roles. Physical restoration of spaces does not automatically translate into psychological identity construction. Jelić et al. [5], in their study of schools in multi-ethnic communities in Croatia, further demonstrated that the presentation of ethnic symbols in school spaces reflects and reinforces existing intergroup relations, and may even exacerbate segregation in conflict contexts. The design of cultural spaces is by no means a neutral technical issue but a practice that profoundly intervenes in the process of identity construction.

These observations lead to the core question of this paper: How can learning spaces effectively promote the cultural identity development of ethnic minority youth? This question is based on two theoretical premises. First, cultural identity is not a static label but a psychological reality actively constructed by individuals through interaction with their environment, encompassing developmental stages such as exploration, commitment, and integration [6, 7]. Second, the physical environment is not merely a container for behavior but an active participant in psychological processes, capable of influencing cognition, emotion, and self-construction [8, 9].

However, dialogue between environmental psychology and cultural identity development theory has been insufficient to date. Place identity research primarily focuses on general connections between people and physical environments, with less specific exploration of how cultural meaning mediates ethnic identity through spatial design. Restorative environment research focuses on cognitive restoration and stress relief, with its relationship to identity development processes yet to be clarified. The goal of this paper is to bridge this theoretical gap by integrating core concepts from both fields to construct an analytical framework for understanding the mechanisms through which learning spaces promote cultural identity development. Specifically, this paper proposes three pathways through which space influences identity and demonstrates the application of this framework using a Li ethnic learning center in Hainan as a case study. This paper is a theoretical framework study rather than an empirical validation; its contribution lies in providing conceptual tools for subsequent design practice and effectiveness evaluation.

Theoretical Foundations: The Intersection of Space, Psychology, and Identity

2.1 Space and Self from an Environmental Psychology Perspective

The core insight of environmental psychology lies in revealing the bidirectional relationship between physical space and psychological processes: people shape spaces, and spaces shape people.

Place identity theory provides a foundational framework for understanding how space enters

self-concept. Proshansky et al. [9] proposed that through daily interactions with the physical environment, individuals gradually internalize the images, memories, and emotions of specific spaces as components of the self. This "physical world socialization of the self" means that the spaces where we live and grow are not merely the backdrop of life but constitutive elements of identity. Strandberg and Ek Styvén [10], in their systematic analysis of the place identity concept, further distinguished between cognitive, affective, and behavioral components of identity, providing conceptual tools for a more nuanced understanding of the relationship between space and identity. Place attachment research deepens this understanding from the perspective of emotional bonds. Cai et al. [11], in their study of Dongmen Village in Fujian Province, southeastern China, found that residents' sustainable conservation behavior toward cultural heritage was significantly influenced by place attachment, involving multiple dimensions including local knowledge, belief networks, and family relationships. Borrup [12] further noted in the context of cultural planning that effective cultural space design requires understanding the existing emotional ties between community members and specific places.

Attention Restoration Theory reveals the regulatory effects of environments on psychological states from a cognitive resource perspective. Kaplan [13] noted that the continuous consumption of directed attention in modern life leads to widespread cognitive fatigue, while environments with specific characteristics can promote attention restoration. These characteristics include a sense of being away from daily pressures, extent that allows for mental expansion, fascination that attracts involuntary attention, and compatibility with individual intentions. Ulrich et al. [14] provided complementary evidence at the physiological level through experimental research: after viewing stress-inducing films, participants exposed to natural environment videos showed faster and more complete recovery in measures such as heart rate, muscle tension, and skin conductance compared to those exposed to urban environments, with emotional states shifting in a positive direction. This finding indicates that environmental effects on psychological states involve not only cognitive aspects but also the holistic regulation of emotional and physiological processes. Liu et al. [15], in their systematic review of research in this field, noted that recent years have seen rapid growth and interdisciplinary integration, with applications expanding from natural environments to various built environments. However, the migration of this theory is not without problems. The Kaplans' original research was primarily based on natural environments; when we apply this framework to cultural learning spaces, we need to ask: Can cultural symbols and heritage elements produce similar restorative effects? Schumann et al. [16], in their theoretical integration of attention restoration research, distinguished between resource-based and satiation-based models, suggesting that the mechanisms of restorative environments may be more complex than depicted by any single theory.

Juxtaposing the two theoretical threads of place identity and restorative environments reveals that they point from different angles to a common conclusion: thoughtfully designed spaces can support individual psychological functioning and self-development. Lee and Kim [17], in their study of outdoor environments in public rental housing, found that restorative experiences were significantly associated with positive emotions, and that such emotional states created conditions for deeper place connections. DeLauer et al. [18] found that natural environments and biophilic design elements had positive effects on university students' resilience, self-esteem, and healthy behavior choices. The university environmental restorativeness scale developed by Menardo et al. [19] provides a tool for measuring the restorative characteristics of educational spaces. These studies provide a foundation for understanding the psychological functions of learning spaces, but they mostly focus on general environment-psychology relationships, with less specific exploration of how cultural meaning influences ethnic identity formation through spatial design.

2.2 The Developmental Trajectory of Cultural Identity

Contrary to the commonsense understanding of identity as a fixed label, developmental psychology paints a dynamic picture: cultural identity is gradually constructed through continuous exploration, negotiation, and commitment within specific social contexts.

Phinney [7], building on Erikson's [6] identity development theory, proposed a three-stage model of ethnic identity. The first stage is an unexamined identity state, where individuals lack active attention to their ethnic background. The second stage is exploration, where individuals begin to actively learn

about and experience their cultural traditions. The third stage is achievement and integration, where individuals form a clear and stable sense of cultural identity and can coordinate ethnic identity with their overall sense of self. Phinney's [20] subsequent review further confirmed the theoretical status of exploration and commitment as core dimensions of identity development. Recent longitudinal studies have provided dynamic evidence for the stage model. Sladek et al. [21] tracked Latino youth's identity development during the transition from high school to university, finding that identity exploration increased significantly over time while identity integration maintained high stability, with significant individual differences. Kuang et al. [22], based on knowledge mapping analysis of the Web of Science database, identified emotional perception, multicultural identity processes, and cultural adaptability as major research theme clusters.

Identity development for ethnic minority youth faces unique complexities as they need to position themselves within the dual reference frameworks of their own ethnic culture and mainstream culture. Luo et al. [23], in their study of Yi ethnic youth in China, found a positive rather than oppositional relationship between ethnic identity and national identity, with intergroup orientation playing a mediating role. This finding challenges the assumption that different levels of cultural identity are in zero-sum competition, suggesting that positive ethnic identity can serve as a foundation for broader social integration. Lai et al. [24], in their study of Yi adolescents in the Liangshan region of Sichuan Province, southwestern China, further revealed that after controlling for factors such as post-traumatic stress risk, ethnic identity exploration was positively correlated with general self-efficacy, with peer support playing a positive role by promoting identity exploration and commitment. Hosseini and LaFromboise [25], in their study of Native American adolescents, found that higher levels of ethnic identity achievement enhanced self-esteem through promoting peer belonging. These findings collectively support viewing ethnic identity as a psychological resource that promotes positive development.

Educational environments play a critical role in cultural identity development. Lai et al. [26], in their study of rural schools in China, found that multicultural socialization and teachers' positive attitudes toward cultural diversity positively predicted students' ethnic identity development, while in ethnic minority student groups, ethnic identity was further linked to mental health outcomes. Wantchekon and Umaña-Taylor's [27] curriculum intervention study demonstrated how schools can actively support identity development: curriculum units focused on ethnic identity effectively promoted students' identity development and academic engagement through mechanisms such as facilitating family dialogue, providing exploration time, and integrating personal and literary exploration. Hernandez et al. [28] examined the relationship between social media use and mental health among American ethnic minority adolescents, finding that ethnic identity importance and exposure to online hate information had moderating effects, suggesting that identity development is embedded in a broader sociotechnical environment.

2.3 An Integrative Framework: Three Pathways Through Which Space Promotes Identity Development

Environmental psychology reveals general mechanisms through which space influences psychology, while cultural identity theory describes the stage characteristics of identity development. How do these specifically connect? Based on a comprehensive analysis of existing literature, three interrelated pathways can be identified.

The first pathway concerns symbolic resources and cognitive activation. Visual symbols, material forms, and spatial narratives in cultural spaces provide learners with cognitive resources for understanding cultural meaning. When Li brocade patterns are integrated into spatial design, when architectural forms embody traditional wisdom, these symbols not only convey information but also activate awareness and understanding of "the group to which I belong" at the cognitive level, corresponding to the transition from an unexamined state to the exploration stage in Phinney's model. Chan et al. [4] found that three dimensions of heritage buildings, namely appearance and components, technology and planning, and social contribution, collectively influenced visitors' cultural identity, with knowledge transfer positively moderating this relationship. The review by da Silva et al. [3] revealed the consequences of lacking symbolic resources from the opposite perspective: when

indigenous knowledge is not visibly presented in school environments, students struggle to connect their cultural backgrounds with formal education. Jelić et al. [5] reminded us of the complexity of symbol presentation: in contexts of tense intergroup relations, overemphasizing ethnic symbols may reinforce segregation; in harmonious multi-ethnic communities, simultaneously presenting symbols of multiple groups is more conducive to constructing common identity.

The second pathway involves restorative environments and emotional support. Exploration of cultural identity involves complex emotional experiences, including longing for belonging, anxiety about difference, and intergenerational tensions. Restorative environments support the processing of these emotions by alleviating cognitive fatigue and promoting emotional regulation. Ma et al. [29], using graph neural network research, found that spatial structural features significantly impacted restoration quality, with nature-related entities more strongly associated with high restoration than artificial entities. This suggests that restorative design for cultural learning spaces can integrate natural and cultural elements. Zhong et al. [30], in their systematic review of biophilic design in architecture, noted that biophilic design encompasses various modes of nature connection from physical, sensory, metaphorical, morphological, to material dimensions. Peters and Penna [31], in their review focused on university environments, specifically identified the positive effects of natural landscapes, natural images, natural materials, and indoor plants on student stress and cognitive function. Lu et al. [32], in their study of small public green spaces in Tokyo, found an inverted U-shaped relationship between green view index and restoration effects, with boundary enclosure affecting psychological recovery, offering insights for understanding restorative design in small-scale spaces. The biophilic wellbeing systems approach proposed by Gray and Downie [33] integrates biophilic design, positive psychology, and systems thinking as a holistic strategy for school design, with its emphasis on the interdependence of individual and ecological health echoing the worldviews of many indigenous cultures.

The third pathway connects participatory spaces and behavioral practice. Symbols provide cognitive resources, restorative environments support emotional processes, but the ultimate consolidation of cultural identity requires realization through behavioral practice. When learners weave brocade with their own hands, learn traditional songs, participate in ritual activities, and dialogue with elders, they are practicing cultural identity in an embodied way, corresponding to the transition from exploration to commitment in Phinney's model. Sun et al. [34], in their research conducted in Native American communities in the United States, employed community-based participatory methods to co-design social-emotional learning programs with tribes. Through thematic analysis of student journals, they identified themes including indigenous identity, belonging, wellness, and colonialism, demonstrating that participatory, culturally grounded educational practices can effectively support identity development and cultural continuity. Gravagnuolo et al. [35], in their cultural heritage adaptive reuse project in Salerno, Italy, showed that when local residents become active participants rather than passive recipients in heritage valorization, projects not only promote heritage conservation but also activate community connections and civic responsibility. Paananen and Häkkilä [36], drawing on their collaborative experience with the Sámi indigenous community in northern Europe, proposed a participatory design framework identifying five key dimensions requiring ethical examination: motivation, community, cultural context, personal reflection, and technology choices. Cultural identity transmission is essentially an intergenerational process; young people learn not only skills from elders but also the meaning systems of culture. Wantchekon and Umaña-Taylor's [27] curriculum study specifically demonstrated how education can promote family dialogue, connecting school learning with intergenerational transmission within families. The school biophilic retrofit toolkit proposed by Leif and Loftness [37] emphasizes having school community members evaluate the feasibility and impact of strategies, similarly embodying principles of participatory design.

The three pathways are not parallel and independent but mutually supportive, collectively serving the complete process of identity development (see Figure 1). Symbolic resources activate cognition, providing direction and materials for exploration; restorative environments support emotions, creating safe spaces for processing identity tensions; participatory activities enable practice, providing embodied expression for commitment. From the perspective of identity development stages, the three pathways roughly correspond to the progression from awareness to exploration to

commitment, but actual developmental trajectories vary by individual and context, with support from all three dimensions potentially playing a role throughout the process.

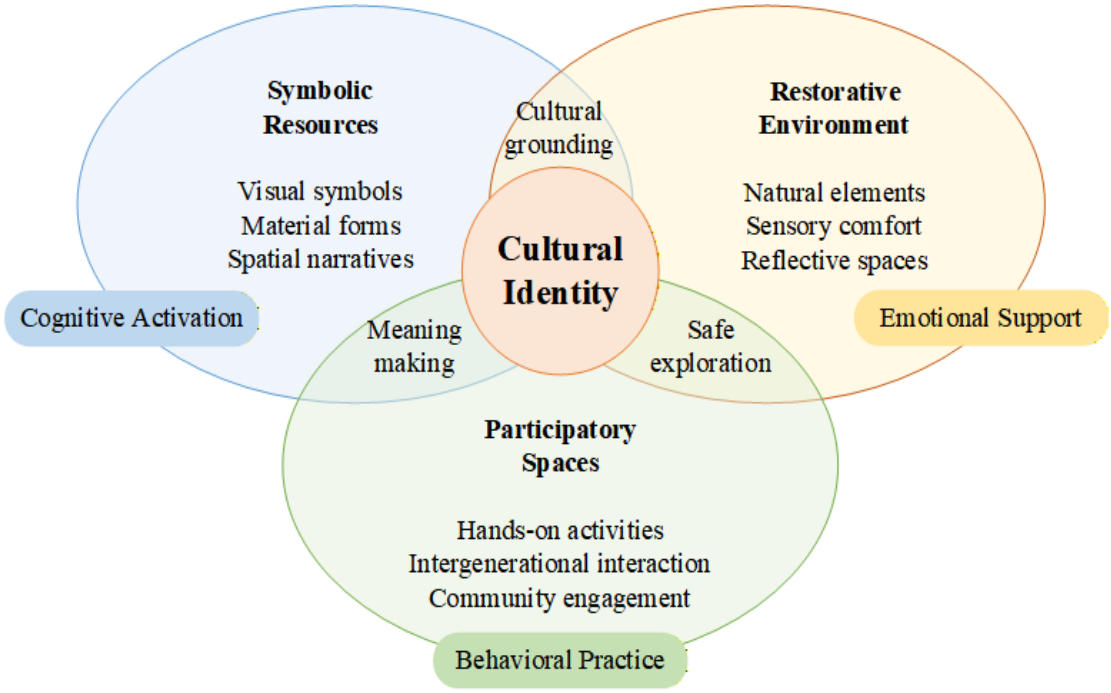

Figure 1. Theoretical framework for learning spaces promoting cultural identity development

The Context of Li Cultural Heritage Transmission

3.1 Overview of Li Cultural Heritage

The Li people are the earliest inhabitants of Hainan Island, a tropical island in the South China Sea that constitutes China's southernmost province. Their ancestors migrated from the South China mainland approximately four thousand years ago and developed a distinctive cultural system in the relatively isolated island environment. According to China's 2020 national census, the Li population numbers approximately 1.6 million, primarily residing in the autonomous counties and cities of south-central Hainan, including Ledong, Lingshui, Changjiang, Baoting, Baisha, and Qiongzhong autonomous counties, as well as the cities of Sanya, Dongfang, and Wuzhishan. As an ethnic group without a traditional writing system, Li cultural transmission has been highly dependent on oral tradition and practical learning, which renders their intangible cultural heritage particularly vulnerable.

Li cultural heritage encompasses both tangible and intangible dimensions. The tangible dimension includes traditional dwelling forms such as boat-shaped houses and stilt houses, as well as handicraft products including brocade textiles, pottery, and rattan and bamboo weaving. The intangible dimension involves language, music, dance, rituals, oral literature, and traditional knowledge systems. Among these, Li brocade, which encompasses the traditional Li techniques of spinning, dyeing, weaving, and embroidering, represents the most iconic cultural symbol. This craft comprises a complete system of four technique categories: spinning, dyeing, weaving, and embroidering. The resulting textile products, including tunics, tube skirts, headscarves, and wall hangings, carry rich cultural information. Li brocade patterns are based on geometric motifs such as wavy lines, triangles, and diamonds, which through variation and combination represent images of mountains and rivers, the sun and moon, flowers and birds, and human figures. These textiles have been described as "history books worn on the body." In 2006, the traditional Li techniques of spinning,

dyeing, weaving, and embroidering were inscribed on the first batch of China's National Intangible Cultural Heritage List. In 2009, due to its critically endangered status, it was inscribed on UNESCO's List of Intangible Cultural Heritage in Need of Urgent Safeguarding. In December 2024, following fifteen years of systematic protection efforts, it was successfully transferred to UNESCO's Representative List of the Intangible Cultural Heritage of Humanity, marking a landmark achievement in China's intangible cultural heritage protection efforts.

Beyond Li brocade, the Li possess abundant intangible cultural heritage resources. Taking the city of Sanya as an example, the municipal government has announced six rounds of intangible cultural heritage protection listings totaling 36 items, including 3 national-level representative items (the Li bamboo pole dance, Yazhou folk songs, and Dan boat-dweller songs), 12 provincial-level items, and 21 municipal-level items. The bamboo pole dance, known as "Zhuansha" or "Taisha" in the Li language, is an ancient Li ritual dance in which dancers leap and move through bamboo poles that open and close rhythmically. The dance preserves nine traditional techniques including flat step, knife-sharpening step, and monkey-stealing-rice step. It was inscribed on the National Intangible Cultural Heritage List in 2006. The Li language belongs to the Li branch of the Tai-Kadai language family within the Sino-Tibetan phylum, divided into five dialects: Ha, Qi, Run, Meifu, and Sai. Differences among dialects are substantial, with some being mutually unintelligible. The Ha dialect has the largest number of speakers. In 1957, the Chinese government created a Latin alphabet-based Li script using the Ha dialect as the standard, but its adoption has remained limited.

3.2 Challenges Facing Cultural Transmission

Despite the unique value of Li culture and strong recognition at the national level, its transmission faces multiple structural challenges.

Language loss represents the most fundamental problem. A 2017 survey of 307 Li youth found that only 45% could speak the Li language, with merely 25.1% self-assessing their Li language proficiency as "very fluent." More concerning is the interruption of intergenerational transmission: 58.6% of Li youth reported Mandarin Chinese as their first language, compared to only 31.3% for Li. When communicating with parents, 40.7% used Li, while 32.8% used Mandarin and 23% used a mixture of both. In public settings, Mandarin usage exceeds 90%. This language shift is not the result of coercive language policies but rather of parents' active choices. Field research has found that many Li parents, "wanting their children not to lose at the starting line," have used only Mandarin with their children from birth. Even when grandparents attempt to communicate with grandchildren in Li, they are often discouraged from doing so. Language is not merely a communication tool but a carrier of cultural cognition and identity. When younger generations no longer master their mother tongue, their connection to oral literature, traditional knowledge, and ritual practices of their ethnic group is fundamentally weakened.

Traditional craft transmission has similarly experienced severe intergenerational rupture. Taking Li brocade as an example, the number of Li women who mastered this craft was approximately 50,000 in the 1950s, declined by more than half by the 1970s, and had fallen to fewer than 1,000 by 2009, most of whom were elderly women over seventy years of age. The transmission status of the bamboo pole dance is equally critical: Langdian Village in Yacheng Town, Sanya, is reportedly the only village in Hainan that has continuously maintained this tradition since ancient times, yet in this village of over 800 residents, only about 20 people currently participate in its transmission. Young people have largely migrated to cities for work, and inheritors worry that this art form will eventually disappear. This situation has resulted from multiple causes: modern lifestyles have changed clothing needs, machine weaving has replaced handcraft production, youth migration to urban areas has led to village hollowing-out, and the economic returns from traditional crafts have been insufficient to attract young people to invest in learning.

Following more than a decade of systematic protection, the situation has shown improvement. By the end of 2025, the number of Li brocade inheritors had grown from fewer than 1,000 in 2009 to nearly 30,000, forming a tiered structure comprising 5 national-level representative inheritors, 46 provincial-level inheritors, and 423 municipal and county-level inheritors. Across Hainan Province, 5

Li brocade technique training centers and 16 heritage transmission villages have been established, along with a Li brocade industry alliance comprising 36 enterprises, workshops, and studios. More than 100 primary and secondary schools have introduced Li brocade practical courses (see Table 1). However, protection efforts continue to face deep-seated challenges. A government survey report from Dongfang City noted that the Li brocade industry suffers from insufficient product design capabilities, weak regional branding, inadequate interpretation of cultural connotations, and limited sales channels. Farmer cooperatives' textiles have pursued market demand while neglecting quality and pattern authenticity, and the cultural value of traditional motifs has not been effectively translated into market value. Natural dyes have become increasingly difficult to obtain, and some traditional techniques face the risk of being lost. More fundamentally, current protection models emphasize the continuation of techniques themselves while paying insufficient attention to the cultural meaning systems that these techniques carry and to supporting learners' identity development.

Table 1. Li brocade heritage protection system in Hainan Province (as of 2025)

Category	Specific Content	Number/Scale
Inheritors	National-level representative inheritors	5
	Provincial-level representative inheritors	46
	Municipal and county-level representative inheritors	423
	Total weavers and practitioners	Approximately 30,000
Transmission facilities	Li brocade technique training centers	5
	Li brocade heritage transmission villages	16
	Li brocade industry alliance members (enterprises, workshops, studios)	36
Educational outreach	Primary and secondary schools offering Li brocade practical courses	Over 100
Milestones	Inscribed on National Intangible Cultural Heritage List	2006
	Inscribed on UNESCO Urgent Safeguarding List	2009
	Transferred to UNESCO Representative List	2024

3.3 Limitations of Existing Cultural Spaces

Current display and transmission of Li culture relies primarily on three types of spaces: museums and cultural centers, tourist sites, and school educational facilities. These spaces play important roles in preserving cultural memory and expanding public awareness, but when examined from the perspective of promoting cultural identity development, their design logic reveals significant limitations.

Museums and cultural centers employ a typical exhibition model in which culture is presented

as a static object for viewing. A physical and psychological distance is maintained between visitors and exhibits: glass display cases preclude the possibility of touch, explanatory labels provide knowledge-based interpretation from an external perspective, and visitor circulation routes guide browsing rather than immersion. This model is suitable for disseminating cultural knowledge to the general public, but for Li youth's identity construction, it transforms what should be "my culture" into "culture about the Li people," reinforcing a spectator rather than participant subject position. Institutions such as the Hainan Provincial Ethnology Museum have collected substantial quantities of precious artifacts and documentary materials. However, experts and scholars have widely reflected in symposia that after successful intangible cultural heritage inscription, relevant protection measures, funding, and technical support have been difficult to implement, with some items that are less compatible with tourism performance and commercial development being neglected.

Cultural presentation in tourist sites faces tensions between commercialization and performativity. Sites such as Binglanggu (Betel Nut Valley), a cultural theme park, have successfully transformed Li and Miao ethnic cultures into tourism products, receiving over one million visitors annually. Li brocade demonstrations and bamboo pole dance performances have become popular experiential activities. This model has proven effective in raising cultural visibility and generating economic returns, but its inherent logic treats culture as a consumer product satisfying tourists' curiosity rather than a resource supporting ethnic members' identity development. Performative presentation often simplifies and fixes the richness of culture, selectively displaying the most visually striking elements to meet market demands while neglecting everyday cultural practices and the complex processes of cultural transmission. Researchers have noted that festivals such as "Sanyuesan" (March Third, the most important traditional Li celebration) have exhibited characteristics of stage performance, content homogenization, and mass entertainment under government leadership, marking a clear departure from the traditional festival's village-based, heritage-oriented, collective, and educational character.

Schools represent an important domain for cultural transmission. More than 100 primary and secondary schools in Hainan have introduced Li brocade practical courses, and "intangible heritage entering schools" activities continue to advance. However, embedding cultural content into formal education systems faces numerous challenges. Curricular time is limited, often allowing only experiential exposure rather than systematic learning. Teaching content emphasizes skill training with insufficient interpretation of cultural meaning and identity value. The school environment itself lacks cultivation of cultural atmosphere; Li brocade class is merely one among many courses, making it difficult to create an immersive cultural experience. More fundamentally, current educational models treat cultural transmission as a knowledge transfer process rather than an identity development process. Students learn "knowledge about Li culture" but do not necessarily acquire "identification as a Li person."

The common limitation of these three types of spaces is that they primarily serve the goals of cultural preservation and knowledge dissemination rather than cultural identity development. Examined through the theoretical framework established in Chapter 2, existing spaces have some foundation in the presentation of symbolic resources but exhibit clear deficiencies in creating restorative environments and supporting participatory activities. Symbol presentation tends to be from an external, explanatory perspective rather than inviting learners to enter the world of cultural meaning. Environmental design prioritizes display effects or commercial functions over learners' psychological needs. Participation opportunities are limited and superficial, making it difficult to support the deepening process from experience to commitment. This provides a problem-oriented direction for exploring new cultural learning space designs: How can we create a space centered on identity development as its core objective, integrating symbolic resources, restorative environments, and participatory activities, to support Li youth in constructing positive cultural identities through the processes of cultural awareness, exploration, and commitment?

Design Proposal for a Li Ethnic Learning Center

4.1 Design Positioning and Overall Concept

Based on the theoretical framework established in Chapter 2 and the contextual analysis in Chapter 3, this section proposes a design for a Li ethnic learning center with promoting cultural identity development as its core objective. The proposed site is located in a Li ethnic community in Sanya, a coastal city in southern Hainan Province. Covering approximately 2,000 square meters, the center aims to serve as a learning space that integrates cultural transmission functions with psychological support.

The overall design concept can be summarized as "Roots of Identity": using the Li totem tree as a symbol, abstract psychological processes are transformed into perceivable and participatory spatial experiences. Identity, like a tree, requires nourishment from roots, support from soil, and the promotion of sunlight and rain to grow healthily. The spatial organization of the learning center follows the psychological logic of identity development, progressing from the activation of cultural awareness, to the deepening of identity exploration, to the formation of embodied commitment, and ultimately achieving identity integration and social connection.

The design integrates the three pathways proposed in Chapter 2. Symbolic resources and cognitive activation are realized through the systematic presentation of Li brocade patterns, totem symbols, and cultural narratives throughout the space. Restorative environment and emotional support are created through the introduction of natural elements, the use of natural materials, and the cultivation of a comfortable and pleasant spatial atmosphere. Participatory space and behavioral practice are promoted through immersive cultural experience spaces, activity designs facilitating intergenerational interaction, and outdoor exhibition areas connecting the center with the broader community. The three pathways interweave within the space, collectively serving the complete process of identity development. The overall spatial sequence forms a progressive structure from entrance awakening, to learning exploration, to cultural experience, and finally to outdoor community integration. This sequence is not a rigid linear process but an organic whole that can be flexibly entered and repeatedly experienced.

4.2 Spatial Design Proposal

4.2.1 Entrance Awakening Zone

The entrance zone serves the function of activating cultural awareness, acting as a transitional space where learners move from the everyday world into the cultural domain, corresponding to the transition from an unexamined state to the awareness stage in Phinney's model (see Figure 2).

The space features totem tree murals and light-shadow installations as its visual focal points. On the main walls, stylized tree forms are rendered through wall paintings and cutout panels, with branches and leaves composed of traditional Li geometric patterns. Natural light passes through the cutout panels, casting tree-shaped shadows onto the floors and adjacent walls, creating a dynamic interplay between solid forms and projected imagery. This light-shadow effect transforms throughout the day, making the space feel alive and ever-changing. The side walls feature colorful woven textile panels in red, yellow, and green tones, echoing the vibrant palette of traditional Li brocade. A white tree silhouette set against this colorful backdrop creates visual depth, while rattan seating nearby invites visitors to pause and absorb the cultural atmosphere. Adjacent to the entrance, a welcome lounge area features rattan armchairs with Li brocade-patterned cushions. The walls continue the tree-shadow motif, with natural light filtering through to create dappled patterns reminiscent of forest canopies. A thematic display area presents Li brocade textiles as wall hangings, accompanied by signage reading "Identity Awakening and Emotional Return: Exploring Roots, Embarking on New Journeys," explicitly framing the space's psychological purpose and preparing learners for the identity development journey ahead.

Figure 2. Entrance awakening zone

4.2.2 Learning Exploration Zone

The learning zone supports the deepening of identity exploration, serving as the core space for acquiring cultural knowledge, understanding symbolic meanings, and engaging in reflective discussion, corresponding to the exploration stage in Phinney's model (see Figure 3).

At the center of the space is a group discussion area with circular wooden tables surrounded by rattan bucket chairs. Each table can accommodate six to eight people in face-to-face exchange. This layout breaks the hierarchical relationships of traditional classrooms, promoting equal dialogue and eye contact. The walls display the signage "Hainan Li Ethnic Cultural Learning Center," establishing the space's identity. A prominent Li mask decoration serves as a cultural focal point, while geometric pattern samples are mounted on the walls for reference during discussions.

The space accommodates multiple discussion groups simultaneously, with several circular table arrangements distributed throughout. Pattern learning cards are placed around the discussion area, allowing learners to physically engage with Li brocade motifs. A standing display board announces current learning themes such as "Li Cultural Exploration Journey", providing orientation for activities. The chairs feature cushions with Li brocade patterns, subtly reinforcing cultural immersion through everyday objects. Each table is equipped with notebooks and writing materials, supporting documentation of learning insights and reflections. Learning materials including illustrated handbooks present Li traditional costumes, brocade patterns, and their cultural meanings in accessible visual formats. These "Li Brocade Learning Sheets" allow learners to study pattern structures, color symbolism, and weaving techniques at their own pace, bridging visual learning with hands-on practice in other zones.

Figure 3. Learning exploration zone

4.2.3 Cultural Experience Hall

The cultural experience hall promotes the formation of behavioral commitment through immersive engagement, serving as the key space for embodied cultural experience and collective participation, corresponding to the transition from exploration to commitment in Phinney's model (see Figure 4).

The hall features a grand wooden structure with exposed beam ceilings that echo traditional Li architectural forms. The soaring roof creates a sense of sacred space, elevating cultural activities beyond the everyday. Natural wood tones dominate the interior, from the structural beams to the polished wooden platform at the center of the space. Display banners with Li script hang from the upper walls, while cultural artifacts including pottery vessels are arranged on pedestals along the perimeters. The central wooden platform serves as a flexible stage for demonstrations, performances, and group activities. Surrounding this platform, circular white cushions are arranged on the floor, allowing participants to gather in traditional seated formations. This arrangement supports various activity modes: facing inward for demonstrations, arranged in circles for group discussions, or cleared for movement-based activities. The cushion seating creates an egalitarian atmosphere where elders and youth can interact at the same level. Large glass windows and doors line the walls, flooding the space with natural light and providing views of the surrounding landscape. Display areas along the walls present photographs documenting Li community life, traditional practices, and cultural celebrations. Elder inheritors demonstrate traditional practices while participants observe from the surrounding cushions. The central platform accommodates craft demonstrations, storytelling sessions, and ritual reenactments, enabling learners to move beyond intellectual understanding to embodied cultural practice.

Figure 4. Cultural experience hall

4.2.4 Outdoor Cultural Gallery

The outdoor cultural gallery serves identity integration and social connection, functioning as a transitional space between the learning center and the broader community, corresponding to the identity integration stage in Phinney's model (see Figure 5).

The gallery features an open-air exhibition pathway paved with red brick, flanked by vertical display panels presenting Li cultural heritage. The panels showcase photographs of traditional architecture, festival celebrations, and community life, accompanied by explanatory text and pattern illustrations. Visitors walk through this curated narrative of Li culture, with each panel building upon the previous to create a comprehensive cultural overview. Tropical landscaping including coconut palms and bougainvillea frames the pathway, integrating the exhibition with Hainan's natural environment. Traditional wooden structures with thatched roofs provide shaded rest areas along the gallery route. These pavilions echo Li architectural traditions while offering practical shelter from sun and rain. The semi-open design maintains visual and physical connection with the surrounding gardens. Within the covered pavilions, additional exhibition elements present cultural artifacts and documentary photographs. Pottery vessels, woven items, and other cultural objects are displayed on wooden platforms, allowing close observation. The outdoor cultural gallery extends the learning center's influence into public space, making cultural content accessible to casual visitors as well as dedicated learners. Community members passing through encounter Li cultural heritage as part of their daily environment, normalizing cultural pride and awareness.

Figure 5. Outdoor cultural gallery

Table 2 summarizes the correspondence between the four functional zones and identity development stages and psychological functions.

Table 2. Correspondence between spatial functional zones and identity development stages

Functional Zone	**Identity Development Stage**	**Primary Psychological Functions**	**Core Activities**	**Key Design Elements**
Entrance awakening zone	Awareness activation	Cultural symbol recognition, emotional triggering	Viewing, sensing, initial experience	Tree murals and light-shadow installations, Li brocade display, thematic signage
Learning exploration zone	Identity exploration	Knowledge acquisition, meaning comprehension, reflective discussion	Reading, discussion, group learning, reflection	Circular discussion layout, pattern learning cards, illustrated handbooks
Cultural experience hall	Commitment formation	Embodied experience, collective participation, intergenerational connection	Demonstrations, group activities, intergenerational dialogue	Wooden beam structure, central platform, cushion seating, cultural displays
Outdoor cultural gallery	Identity integration	Social connection, community belonging, public recognition	Exhibition viewing, guided tours, community gatherings	Exhibition pathway, thatched pavilions, tropical landscaping

Discussion and Conclusion

5.1 Theoretical Contributions and Dialogue

The core contribution of this paper lies in proposing an integrative analytical framework for understanding the mechanisms through which learning spaces promote cultural identity development. This framework identifies three interrelated pathways involving symbolic resources and cognitive activation, restorative environments and emotional support, and participatory spaces and behavioral practice. The three pathways do not operate independently but interweave and interact within the space, collectively serving the entire identity development process from awareness through exploration to commitment.

The theoretical significance of this framework lies in bridging two research fields that have long developed in parallel. Environmental psychology reveals general mechanisms through which physical space influences cognition, emotion, and behavior, but pays less attention to how cultural meaning mediates specific groups' identity construction through spatial design. Cultural identity development research describes the stage characteristics and social conditions of identity formation, but insufficiently addresses the role of physical environments. This paper attempts to build conceptual bridges between the two fields, integrating theoretical resources such as place identity, restorative environments, and identity development into an operational analytical tool.

The framework of this study engages in meaningful dialogue with social identity theory. The classic exposition by Tajfel and Turner [38] points out that individuals' self-concepts partly derive from their membership in groups, and that group belonging is an important source of self-esteem and positive self-evaluation. The third pathway proposed in this paper is precisely a spatial interpretation of this insight. When learners weave together with elders in workshops or dance with community members in courtyards, they are not only acquiring skills but also confirming and reinforcing their group membership through embodied participation. Space becomes the material expression of group boundaries and the site where group identity is practiced and reproduced.

Zhu and Lin's [39] study of cultural identity among Chinese university students proposed a four-stage model progressing from cognitive identity to emotional identity, ideological identity, and finally behavioral identity, emphasizing the progressive transformation from cognition to behavior. This resonates interestingly with the three-pathway framework of this paper. Both reject viewing cultural identity as a unidimensional psychological state, and both emphasize the integration of cognition, emotion, and behavior. The difference is that Zhu and Lin's model focuses on the internal logic of psychological processes, while this paper's framework focuses on how space supports the unfolding of these processes. The two perspectives can complement each other: understanding the psychological stages of identity development helps design more targeted spatial interventions, while the material support of space provides necessary conditions for the realization of psychological processes.

5.2 Revisiting Design Principles

The design proposal for the Li ethnic learning center demonstrates one possible pathway for translating the theoretical framework into practice, but tensions exist between the universality of design principles and contextual adaptability that warrant further reflection.

The manner of presenting symbolic resources requires careful consideration. Research by Jelić et al. [5] reminds us that in contexts of tense intergroup relations, overemphasizing ethnic symbols may reinforce segregation rather than promote identity. This paper's design proposal adopts a specific stance in symbol use, employing elements such as totem trees and Li brocade patterns as the visual language of the space, aiming to provide cultural anchoring for Li learners. This strategy has legitimacy within Li communities, but if this framework were applied to multi-ethnic residential contexts or situations with intergroup tensions, the symbol strategy might need adjustment. Chan et al. [4] found that knowledge transfer positively moderates the influence of heritage buildings on cultural identity, suggesting that symbol presentation should be accompanied by meaning interpretation to avoid becoming empty decoration or labels that might cause misunderstanding.

The design of restorative environments similarly requires contextualized understanding. Attention Restoration Theory originated from research on natural environments [13, 14], and its transfer to cultural spaces is not self-evident. This paper's design proposal attempts to integrate natural and cultural elements, making tropical plants, natural lighting, natural materials, and Li symbols together constitute the restorative characteristics of the space. The biophilic wellbeing systems approach proposed by Gray and Downie [33] emphasizes the interdependence of individual health and ecological health, a perspective that aligns with the worldviews of many indigenous cultures and provides theoretical support for integrating nature and culture in cultural learning spaces. However, cultural differences in restorative experiences remain a question to be explored. For Li youth who have grown up in urban environments, can tropical plant landscapes still evoke connections to traditional village life? This question requires verification through empirical research.

The core of participatory space design lies in creating conditions for intergenerational transmission. Research by Sun et al. [34] in Native American communities demonstrates that participatory, culturally grounded educational practices can effectively support identity development and cultural continuity. The design of workshops and community activity zones is based precisely on this principle, enabling cultural knowledge to be transmitted through embodied practice via face-to-face instruction between elder inheritors and young learners and through intergenerational collaboration in the bamboo pole dance. Research by Wantchekon and Umaña-Taylor [27] further reveals that educational practices focused on ethnic identity can promote family dialogue, connecting school learning with intergenerational transmission within families. This suggests that the function of learning centers should not be confined within their physical boundaries but should become nodes connecting families, schools, and communities.

5.3 Limitations and Future Directions

This paper is a theoretical framework study, and its limitations need to be clearly stated. The framework and design proposal presented in this paper have not yet undergone empirical testing. The identification of the three pathways is based on comprehensive analysis of existing literature, and their effects in actual spaces, their interrelationships, and boundary conditions still require verification through subsequent research. Future research could employ quasi-experimental designs to compare the effects of different design strategies on learners' identity development, or could adopt ethnographic methods to examine in depth learners' actual experiences and meaning-making processes in cultural spaces. The university environmental restorativeness scale developed by Menardo et al. [19] provides methodological reference for measuring the restorative characteristics of spaces, but measurement tools specific to cultural learning spaces and ethnic identity development remain to be developed.

The particularity of the Li case limits the direct generalization of research findings. As one of China's smaller ethnic minorities, the Li people face cultural transmission challenges with specific historical and social backgrounds. The systematic review by da Silva et al. [3] emphasizes the importance of understanding local contexts for proposing effective interventions, and this principle equally applies to the application of this framework. The selection of symbolic resources, the configuration of restorative elements, and the design of participatory activities all need to be adjusted according to the cultural characteristics and social conditions of specific ethnic groups. The framework provides an analytical perspective rather than a directly replicable plan.

This paper focuses on the spatial design level and pays insufficient attention to more macro conditions such as institutional environment, policy support, and community participation. Research by Gravagnuolo et al. [35] demonstrates that only when local residents become active participants rather than passive recipients in heritage valorization can projects truly activate community connections and civic responsibility. Paananen and Häkkilä [36], drawing on their experience collaborating with Sámi indigenous communities, emphasize ethical examination of dimensions including motivation, community, cultural context, personal reflection, and technology choices. The successful operation of learning centers depends not only on the quality of spatial design but also on their organic connection with communities, coordination with policy environments, and long-term sustainable operational mechanisms. These factors beyond spatial design itself constitute broader issues that future research and practice need to address.

5.4 Conclusion

The transmission of cultural identity is a complex psychological and social process requiring multidimensional supportive conditions. This paper attempts to approach this issue from a spatial perspective, proposing that learning spaces can promote cultural identity development through three pathways involving symbolic resources, restorative environments, and participatory activities. This framework integrates core insights from environmental psychology and cultural identity development theory, providing an analytical tool for understanding the relationship between space and identity.

The design proposal for the Li ethnic learning center demonstrates the application possibilities of this framework. The four functional zones correspond to different stages of identity development, and the three pathways interweave across the spaces, together constituting an overall environment that supports identity development. This proposal is not the only answer but rather an exploratory attempt based on a specific context.

In the context of globalization, ethnic minority cultural transmission faces universal challenges. Museum-based preservation models preserve the material forms of culture but struggle to support living identity construction. Commercialized performance models expand cultural visibility but may alienate cultural meaning. The framework proposed in this paper points toward a different possibility, namely creating learning spaces with identity development as their core objective, making cultural transmission an identity construction process in which contemporary people actively participate rather than passively receive heritage displays. The realization of this vision requires sustained dialogue between theoretical research and design practice, deep understanding of specific cultural contexts, and above all, respect for and trust in the agency of cultural subjects..

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