

Rethinking the shaping of place sense in urban environmental education

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Abstract: In recent years, the parallel trend of Internet celebrity cities and popular culture has created the phenomenon of urban homogenization. In this process, universal modernist techniques have eroded a large amount of local space and local construction concepts. Local culture has not been dynamically inherited, but has been deconstructed into the system of global capital operation. Aiming at this phenomenon, how to appropriately push the relationship between local perception and urban environmental education has become a key issue that needs urgent consideration. Through qualitative theory sorting-out, case sample dismantling, and element analysis, the article systematically sets up the connection between education concepts, space differences, research methods, and local construction of urban construction and local identity, and puts forward corresponding training method for the shaping of local perception in urban environmental education, also proposes five logical perspectives from “concept-perception-practice”. This article fills in the construction of systematic framework of local perception theory from the perspective of urban environmental education with the expectation of deeply thinking about the radical treatment and the involvement of humanized concept through the objective linkage between urban planners, educators, and learners.

Keywords: urban environmental education; sense of place; collective memory; identity; genius loci

1. Introduction

In the course of urbanization, the multi-dimensional demands for human dwelling environment are broadening step by step, and different groups of people view the same city from diverse perspectives. A man may feel happy because of the ecological environment and social interaction of the community, but he may also sense indifferent for going through the local homogeneous urban experience. Sense of place can make people produce contradictory emotions, and let the warmth of community and family coexist with the pressure of high-density urban living. Sense of place, as people’s perception mode to spatial categories such as streets, communities, cities, profoundly affects people’s happiness in living. how do we describe a place and interact with it? How to highlight regional characteristics in a place? How to understand the story of a place? Therefore, this article proposes a study on how urban environmental education can embed deeper local values and identities in the dynamically developing urban environment. It is expected that the synesthesia of local landscapes and cultural forms can be awakened by establishing an urban community of more sustainability and regionalism, and deeply cultivating the sustainable development of the city in the future.

2. Reflections on sense of place

Sense of place describes the relationship between humans and place, expressed in the different dimensions of emotions, biographies, imaginations, stories, and personal experiences human life in human life. In environmental psychology, sense of place is referred to as “the comprehensive feeling of perceiving a place” including local attachment and local meaning (Kudryavtsev, Stedman, Krasny, 2012) ^[1]. Place elaborates on the connection between people and places, and the local meaning feeds back the spiritual essence of human living space. In short, sense of place is the lens through which people experience and understand their place and local experience” (Adams, 2013) ^[2-3]. Sense of place varies depending on individual experiences, history, culture, and living space. People endow the ecology, society, economy, culture, aesthetics, history or other aspects in the same place, with different

levels of meaning. Sense of place defines how people see, interpret, and interact with their world through the involvement of personal experiences (Yifu Tuan, 2019)^[4]. Within cities, sense of place corresponds with the junction of culture, environment, politics, and economics, and is affected by global mobility, migration, and the fuzzy boundary between nature and human living environment.

3. The developmental relationship between urban construction and local identity

3.1 Concept development of urban and environmental education

Academic research surrounding the relationship between region and education reflects different perspectives, and many of them are concerned with urban environmental education. The pedagogical perspective points out that people need to develop specific local practices to show the concrete relationships (perceptual and conceptual) of local landscape (nature, architecture and humans) ^[5]. In addition, some scholars and researchers use the flow perspective (global and networked flow of ideas, materials, and people) to build the awareness of the relationship between the local and the global in the construction of urban center places (Stedman, Ardoin, 2013) ^[1-2]. It suggests that understanding sense of place in cities can produce a series of derived conditions and challenges, including dynamic demography, spatial and temporal migration and the construction of complex infrastructure networks, as well as disputed definitions of the natural environment (Heynen, Kaika, Swyngedouw, 2006). A critical question is that how do we think about a sense of place in cities when places and people are constantly on the move? Considering the shift from city to countryside under the urbanization process, today's sense of place includes where people come from and how they see the place they are in. In the research of US City Studio, Adam (2019) found that Caribbean youth's concepts of home and identity are mainly constructed in the urban environment of the Northeast, and they develop awareness of their place through birth or immigration. In summary, the model of local identity is crucial to thinking about how to construct urban environmental education with multiple layers of meaning. In response to the urban spatial renewal under the globalization challenge, this article summarizes the various identity forms in urban transformation and development (see Table 1).

Table 1: Various identity forms in the period of urban development

Identity Mode	Specific Description	Main Attributes	Means of Urban Transformation
Local identity is a feature description mechanism	The shaping of process and harmony: the essence of region/city is related to spirit	1 Provide urban characteristics 2 Enhance urban characteristics and tangible and intangible value of region/city	1 most effective at larger levels of urban characteristics. 2 The purpose of improving the regions/cities. 3 Provide opportunities for policy-led localities and management.
Local identity as design tool	Reproduced products and innovation: related to the physical and visual value of places/cities	1 Provide location with manufacturing strategy 2 Improve locality, local/urban materiality, well-being and living quality	1 apply to multiple levels of urban characteristics, but more effective at medium levels. 2 Opportunities for heritage-led and culture-led approaches to regeneration.
Local identity as a kind of cognition	Condition and recognition: related to the perceived and social value of a place/city	1 Provide local/city experience 2 Enhance environmental knowledge, awareness and local figurativeness	1 More effective in smaller levels of urban identity. 2 Improve environmental information processing. 3 Contribute to the development of local/urban meaning and memory.
Identity is a condition linking regions	Emotion and sense of belonging: related to the emotional, social and behavioural value of region/city	1 Provide spatial interconnections 2 Enhance the social and environmental value of regions/cities	1 Apply to the multi-dimensional construction of urban identity. 2 Improve the relationship between urban context and local content. 3 Valid for social behavior attributes.

3.2 Local cognition and urban spatial difference

If cities as places where residents inherit and create social constructions are not critically considered, it is incomplete to understand sense of place in urban environments. Edward Soja, David Harvey (2013)

critically draw on fairness and spatial justice, Marxism, and analysis to describe cities as the material consequence arranged by specific politics and ideology under global capitalism. Critical educators (Gruenewald, 2003; Haymes, 1995)^[11-12] use critical geography to demonstrate how cities are imbued with controversial content structures of gentrification and gendered social relations, which potentially makes sense of place between residents vastly different. For example, Stephen Hymes (1995) believes that in the historical context of race relations in Eastern countries, local pedagogy must be linked to the local thinking of clans and nations in the construction of cities^[4,6-7]. Although Haymes proposed this idea 20 years ago, local applied urban education must be intertwined with national culture and locality, and the continued need of environmental educators must remain consistent with the superstructure of political reality. In individualized local perceptions, different people may resonate with different meanings of a place. The complexity of meanings around the city and people's understanding of these controversial meanings provide a powerful context for individual inquiry and collective learning (established concepts).

3.3 Thought on local landscape and research method

In the research process of local landscape and cognition, many developmental methods and research perspectives have emerged. Tzou and Bell (2012) use ethnographic method to study the thoughts on local construction of urban young people of color^[8]. Their findings illustrate the impact of environmental education on social equity and justice, for example, popular environmental education can be detrimental to communities of colored race in terms of power and positioning. In addition, Gruenewald (2015) notes that traditional assessment models, such as standardized testing, are problematic in local education^[9]. Instead, we need to redefine education and research into identifiable research forms aiming to explore local sensitivity, and offer multiple ways to define and describe people's relationships with environment. Therefore, this article will refill the gaps in this theoretical framework, conduct research with the construction of sense of place in urban environment as research theme, and find a collective framework of its theoretical composition.

3.4 Identity and regional space construction

Sense of place is inherent in many environmental learning programs (Thomashow, 2002)^[10]. The goal of these programs is to foster the definition of ecological place, and their content is to view the phenomena associated with nature including ecosystems and related activities, as a local gathering. (Kudryavtsev, Krasny, & Stedman, 2012)^[1-2]. This perspective is very common in local and other environmental education methods of material space domain, children outdoor space, community art gardens, community spatial relationship creation, and natural and historical environments. Education based on local perception is a very important goal for urban life, including local awareness improvement, identity improvement, local relationship, and incentive of how we can contribute positively to this evolving relationship. Therefore, local participants can be encouraged to develop and adapt to local transformation, and learning experience contributes to identity improvement and well-being construction of the community.

4. Cultivation of sense of place in urban environment

4.1 Multi-layered shaping of local perception

As the global population explodes in urban spaces, ecological urbanism requires new ways of understanding locality. How does sense of place promote human flourishing and landscape justice, and sustain the diversity of living cultures? This article proposes a corresponding theoretical framework based on the theoretical basis of the above-mentioned literature (Figure 1), in order to explore the shaping of sense of place in terms of the methods of local experience, social interaction, and identity development. In practice, urban environmental education programs will combine different methods to cultivate sense of place, and the thinking based on locality is the most noticeable perspective (Smith and Sobel, 2010). It holds that any environments including cities need to closely integrate local environment with symbiotic residents. Therefore, the following article will focus on thinking about the geographical construction of urban space, and rethinking the phenomenon of local identity in the urban education environment.

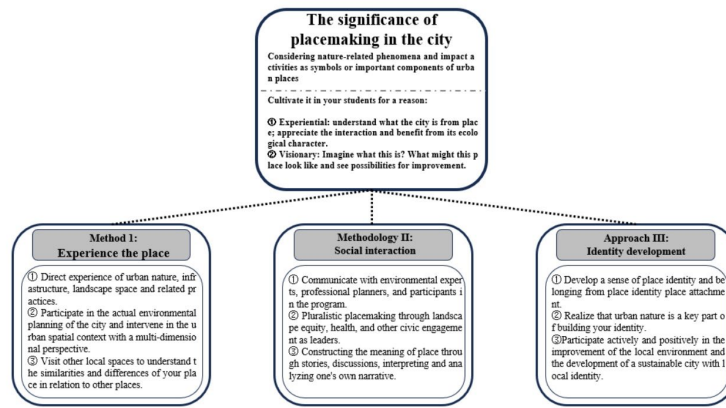


Figure 1: A theoretical framework for shaping a sense of place

4.2 Individualized urban experience output

From the perspective of environmental education, students need to realize that the places they take for granted is an important part of influencing sense of place. By focusing on the places that students frequently visit with interest, educators can ask the following questions: “What kind of place is this? (Cognition) What does this place mean to you? (Meaning) What does this place make you do? (Interactivity)” Practical activities that allow students to experience, reconstruct, and manage more natural ecosystems in cities are ways to cultivate local meaning (Russ, 2015). Another activity could use concept mapping to highlight places and networks (mapping representations) that are important to students, such as integrative information processing related to commuting, Internet information, entertainment hotspots, or general interests. Intellectual maps and drawing performance focus on phenomenal experience (sensory perception)— local impression, sound source experience, environmental smell and other factors to locate individual cognition of urban space. In the state of “addressless” description mentioned by Roland Barthes^[11], Japanese residents are good at improvisational drawings. Seeing streets, houses, ditches, railways and signboards revealed (Figure 2), they also experience more deeply the identity of sense of place and spatial cognition brought by local subjective writing. As a result, much more abstract map information has erased a large number of experiential perspectives on how to view the city. When outputting individualized urban experiences, one must rely not on books or addresses to identify directions, but on senses, walking, vision, habits and experiences. In conclusion, all discoveries are strong and fragile, and can only be reacquired through the memories of the footprints it leaves for people. One begins to write about this place when visiting a place for the first time. There is no ready-made address, the address needs to create its own writing.

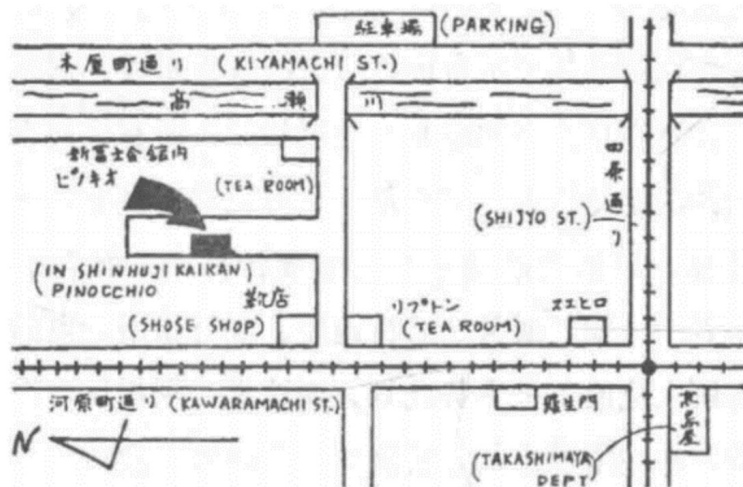


Figure 2: Urban map experience of “concrete individual” and “abstract macrocosm”

Such cartographic experiences can help students learn about specific communities and investigate the relationships between communities, and the geospatial connections between their home networks. In addition, map drawing can help students realize how their daily activities are related to the daily

activity network of urban spaces, and ask them to reflect on the equity phenomena related to the environment (such as corner greening, abandoned spaces, spatial emissions, etc.) and development issues of sustainability space. Through a systematic understanding of the early local cognitive map style represented by Appleyard (1969), as shown in Figure 3, this article combines and organizes eight different expression styles of cognitive map based on the individual perceptions and spatial map understanding of different groups of people. This kind of cognition, once again widely recognized through a network of relational attributes, provides an opportunity to determine what local spatial sense appears important in the mind. How are they represented? And by which ways we respond to the constitution of sense of place through the power of intellectual mapping.

4.3 Diversified local space research

Local space research activities can provide new meaning and identity to local development that people are familiar with or not. This article divides the research into four parts (see Table 2): observation and experience (urban elements), retrieval and collection (framework development), comparison and analysis (spatial intention), and practice and interaction (local creation).

Table 2: Thinking on diversified local space construction

research method	activity content	presetting outcome
Observation and experience	Explore urban boundaries and grey, unused spaces.	Activate space vitality reuse.
	Look for central places and gathering Spaces.	Understand the construction of urban settlements of interest.
	Track pedestrian movement track and compare with urban expansion development.	Clarify the comprehensive relationship between crowd activities and urban space development.
Retrieval and collection	Observe the differentiation and spatio-temporal changes of community migration routes and urban community space.	Enumerate the relationship between population industrial structure, community and green space function.
	Track the movement of other city workers in the city, such as garbage removal, administrative service track.	Analyze the trends and influencing factors of urban government intervention in urban development.
	Observe the change of facade form and color between urban structures, blocks, neighborhoods, and regional Spaces.	Construct color intention and genetic map of urban architecture.
comparison and analysis	Observe building construction and demolition patterns within buildings, neighborhoods, neighborhoods, and urban areas.	Understand the relationship between urban renewal trend and space industry development.
	Observe cultural buildings, blocks related features.	Understand the genetic features of architectural space.
Practice and interaction	Cooperate with artists to create urban murals, structures and other urban intention space construction and output.	Empower regional culture and activate the influence and radiation of spatial formats and industries.
	Organize cultural activities of urban settlements to understand the interactive thinking of crowd agglomeration and interest.	Gather local soft culture, innovate local activity and new era collective activity memory.

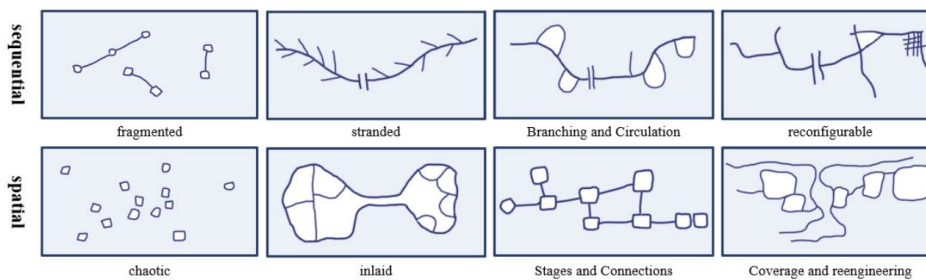


Figure 3: Style differences of cognitive maps

The above-mentioned contents builds these activities on seminal works related to urban design, such as: Christopher Alexander’s “Pattern language” (Urban dynamic construction) [10], Randolph T. Hexter’s “Ecological democracy design” (Activity’s trajectory radiation) [9], Jane Jacobs’s “The death

and life of great American cities” (Spatial core of culture), and Jan Gehl and Birgitte Svarre’s “Life research of public human settlements” (Creation of locality) ^[6,10]. Combinative thinking between these works aims to establish a framework of hierarchical strategies by proposing local space research.

4.4 Polysemous social construction of place

Activities through which people explore and understand a region help develop a collective sense of place and corresponding local meaning. Participatory research increases young people’s awareness of critical reflection, influences how they see the relationship between them and region, and builds collective understanding in dynamically developing cities. For example, in participatory urban environment course, the use of local photographs, recordings of resident conversations, and mental drawing allows students (many from marginalized ethnic groups) to experience the transformation of neighborhoods from fixed locations to dynamic construction space of society, and describe how they experience and understand urban phenomena (Bellino and Adams, 2014) ^[12]. These activities enable students to expand their construction of urban creation, and push them to transform their identities from the sustainability perspectives of environment, economy and culture.

In addition, local meaning can encourage dialogue, and reflect on local meaning and how to maintain local identity through storytelling, exchanges with environmental professionals, learning from community members and sharing individual memories of a place, and through graphics, music, poetry, photographs or other forms (Wattchow, Brown, 2011) ^[13]. Participation in urban identity construction through social activities, such as collective art creation, protection of local natural ecology, and creation of community gardens, may contribute to forming important green space and collective sense of place of local ecology. On the contrary, local meaning of social construction can feed back and promote community’s participation, protection, transformation or creation of place and space with unique meaning, and create opportunities to maintain the vitality of these places (residents’s participation in community design injects crowd vitality). By interacting with communities over time, environmental educators can see these measures taking root and growing in a place, and forming complex regional identities and imprints, and can observe similarities, differences, and changes in individual and collective sense of place.

4.5 The development of participatory ecological identity

Environmental educators promote awareness of urban ecology by cultivating a sense of identity. Place attachment is composed of local memory, local change, and community action. Local memory is the prerequisite for attachment, and community action (construction) is an important part of establishing a long-term mechanism of attachment (Roberto Falanga, 2022) ^[14]. Humans have multiple identities, including ecological identities, which reflect their ecological perspective on the world. Ecological identity is not only limited to the appearance of green environmental protection, but also focuses people’s vision on environmental activities, sustainable infrastructure, ecosystems, and the construction of urban areas with biodiversity. The urban ecological identity is reflected in the responsibility of individual to the urban sustainable development and improving the local environment through one’s abilities and thinking^[15]. Urban environmental education programs can influence ecological identity. For example, we should let students participate in long-term environmental restoration projects, make them serve as environmental experts (role participation and planning participation), value young people’s contributions and thinking on environmental planning, respect their views on future urban development, and admit young people’s efforts as ambassadors of local environment and environmental organizations (work/volunteer, tags on t-shirts, workshops, certificates for community events, etc.).

Involving students in the development of ecological identity can make them more familiar with community projects from an ecological perspective and integrate local thinking. It can also help add thinking about ecological identity to their identity and perception of the city (Bellino, Adams, 2014) ^[3,12]. A research team from the Macau Polytechnic University puts forward some thoughts on the existing phenomenon in a multi-ethnic community environment. This new American community composed of multiple populations, multiple languages, and multiple cultures has formed the conflict between community cognition and spatial order under the long-term squeeze of historical time. The research team realizes that community residents lack consensus and place identity, and their lifestyles are staggered and disordered (see Figure 4). They hope to strengthen the connection between community residents and the community environment through active intervention. Activities such as neighborhood visiting, community canteens, and volunteer cleaning, enhance the community’s place

vitality, and provide communication and awareness for community residents.

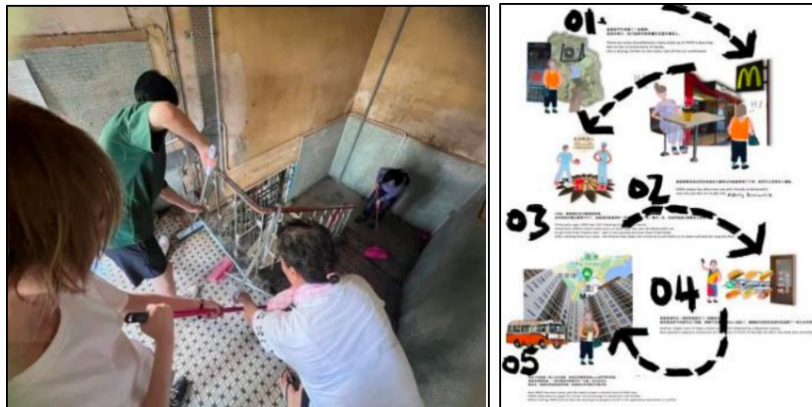


Figure 4: Residents of new American community and research team in Macao jointly participate in the governance activities and construction planning of community space

5. Conclusion

5.1 Urban environmental education and local synergetic development

Urban environmental education should embed deeper local meaning and identity in dynamic urban environments. Urban environment tends to show diversity across multiple elements. Therefore, there are countless ways to advance urban local shaping from typologies of green space and infrastructure to globalized designs of local regionalism. Furthermore, while environmental educators can design and facilitate experiences to capture and influence people's acquisition of sense of place, educators need to have an independent cognitive concept of their own sense of place, which is especially important for environmental educators who did not spend their formative years in cities. People gain a greater sense of place through frequent interactions with local spaces, perceiving local changes in urban diversity and the closeness and diversity of populations in urban environments.

5.2 Reflection on the locality of urban development

It is important for all urban environmental educators to participate in local reflection activities of cities. These activities allow them to understand the dual local perception of places and individuals, including their evaluation of the nature, human and architecture environment.^[16] Through multi-layered perception shaping, individual urban experience, diversified local research, polysemic place construction and participatory ecological identity, this article summarizes the shaping of urban local perception from five aspects of conceptual framework, embodied perception, content division, scene creation, and expansion of viewing method, which will greatly help other scholars cultivate sense of place in different urban environments. By sharing their experiences with place, all learners can deepen our awareness and sensitivity to our environment and each other. This awareness and acceptance of place contributes to the creation of a collective consciousness of sustainable cities and the production of positive impact on individual actions.

References

- [1] Kudryavtsev, A, Krasny, etal. *The impact of environmental education on sense of place among urban youth*[J]. *Ecosphere*, 2010(4):29-34.
- [2] Kudryavtsev, A, Stedman, etal. *Sense of place in environmental education*[J]. *Environmental education research*, 2012, 18(2):229-250.
- [3] Adams, JD. *Theorizing a sense of place in transnational community*[J]. *Children, youth and environments*, 2013, 23(3):43-65.
- [4] Yi-Fu Tuan. *Space and place: an empirical perspective* [M]. Beijing: Renmin University of China Press, 2017.
- [5] Yifu Tuan. *Topophilia: a study of environmental perceptions, attitudes, and values* [M]. Beijing: Commercial Press, 2019.
- [6] Julien. *Between mountains and waters: the unthinking of life and ideals* [M]. Shanghai: East China

Normal University Press, 2017.

[7] Edward Relf. *Place and non-place* [M]. Beijing: Commercial Press, 2022.

[8] Tzou, Bell C A, P. *The role of borders in environmental education: Positioning, power and marginality.*[J]. *Ethnography and Education*, 2012, 7(2):265-282.

[9] Gruenewald, DA. *Accountability and collaboration: Institutional barriers and strategic pathways for place-based education.*[J]. *Ethics, Place and Environment*, 2015, 8(3):261-283.

[10] Thomashow, M. *Bringing the biosphere home: Learning to perceive global environmental change* [M]. Cambridge: Massachusetts: The MIT Press, 2002: 34-44.

[11] Roland Barthes. *The empire of symbols* [M]. Beijing: Renmin University of China Press, 2018: 33-64.

[12] Bellino, Adams M A, JD. *Reimagining environmental education: Urban youths' perceptions and investigations of their communities*[J]. *Revista Brasileira de Pesquisa em Educação de Ciências*, 2014, 14(2):27-38.

[13] Wattachow, Brown B A, M. *A pedagogy of place: Outdoor education for a changing world* [M]. Monash, Australia: Monash University Publishing, 2011: 23-26.

[14] Pan, Yiyang, Cobbinah A P B. "Embedding place attachment: Residents' lived experiences of urban regeneration in Zhuanghe, China."[J]. *Habitat International*, 2023, 135(1):102796.

[15] Yao Yuanwei and Huang Yuhao. *Inheritance and renewal: a study on in situ design of ribbon landscape space based on industrial heritage* [J]. *Zhejiang Garden*, 2023(2):25-30.

[16] Huang Yuhao. *On the Return Journey to the Picturesqueness* [J]. *Arts Studies and Criticism*, 2022(2): 47-49.