

Exploring Urban Design Teaching under the Framework of the Discipline of Human Settlements

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Abstract In the new era, urban design should focus not only on traditional spatial form-making, but also on human needs, sustainable development, and culture. Therefore, the core of urban design today is the human settlements. In this context, the teaching of urban design courses in universities needs to be actively reformed to cultivate talents who better meet the demands of social development. To this end, profound changes should be made throughout the entire process of course implementation, including teaching objectives, content, and methods. This paper explores these issues, hoping to cultivate new-type urban design talents equipped with systematic thinking, humanistic care, and practical innovation capabilities through the reform of teaching objectives, content, and methods.

Key words Sciences of human settlements, Urban design, Teaching in higher education institutions, Systematic thinking, Multidisciplinary collaboration, Teaching reform

0 Introduction

At present, the goal of China's urban development has shifted from large-scale expansion to refined development, with an emphasis on improving the quality of existing stock. Accordingly, the focus of urban spatial development has moved from "whether there is" to "whether it is good." Urban design is a key point in shaping the urban spatial environment, and against this backdrop, greater attention should be paid to people's real experience. The "Sciences of Human Settlements" founded by Mr. Wu Liangyong emphasizes taking people as the core and integrating architecture, city, and landscape into a comprehensive and integrated research system, which serves as an important orientation for contemporary urban design^[1]. Exploring the reform path of urban design course teaching on this basis is of great practical significance.

1 Reconstructing the course teaching objectives

Teaching objectives are the foundation and the weather vane of course teaching. They serve as the basis for designing teaching activities and teaching evaluation.

1.1 From spatial form shaper to human settlements builder

In the sciences of human settlements, it is emphasized that urban design and environmental design should ultimately serve people and therefore should be human-centered. On this basis, the primary objective of the urban design course is to guide students to correctly understand that meeting human needs is the core of urban design. When shaping space, one must see it as a complex system that sustains survival and everyday life. The overall teaching ob-

jective is to enable students to know for whom the space is designed, how people live there, and how the space responds to their psychological and physiological needs^[2]. This objective is then refined by integrating the specific knowledge of each lesson. Through this reconstruction of objectives, students can shift their mindset and identity, recognizing themselves as builders of human settlements.

1.2 Cultivating systematic thinking A key point of the "sciences of human settlements" is the holistic view, which emphasizes attention to the interconnections among various elements. In traditional urban design course teaching, the focus often falls on meso scale blocks and squares, while connections to regional ecological patterns and building systems remain relatively weak. Therefore, teaching objectives should also emphasize cultivating students' systematic thinking, taking the five major systems of human settlements (the natural system, the human system, the social system, the residential system, and the supporting network system) as the foundation, and training students' ability to integrate these five systems in their designs.

1.3 Strengthening cultural consciousness and local cognitive ability

Human settlements embody deep historical accumulation, but many students' designs are devoid of any local distinctiveness. Therefore, the course objectives should aim to awaken cultural consciousness in students^[3]. Beyond learning how to physically shape space, students must also learn to read a site, identify the historical context, collective memory, and genius loci embedded in the human settlements of a particular area, and then translate these into design elements that can be woven into contemporary spatial design.

2 Restructuring the course teaching content

The traditional course content is organized in a linear process. However, as the "sciences of human settlements" emphasizes integration and synthesis, it is necessary to reorganize the

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course content into a modular structure.

2.1 Developing an environmental analysis module grounded in nature and ecology In urban design, different understandings of the same object lead to different treatment methods and, ultimately, different outcomes. Take natural terrain as an example: conventional urban design often regards it as an obstacle to be leveled, thus failing to fully utilize such spaces. Approaching this content with a reorganizational mindset, a front-loaded environmental analysis module can be set up, treating natural system analysis as a prerequisite for design. On this basis, the teaching content should incorporate various analytical methods, such as climate analysis and GIS spatial analysis techniques, to strengthen students' ability to interpret the environment. In addition, training in urban design strategies such as sponge city concepts and low-carbon ecological principles can be added around the theme of ecology, so that ecological design becomes deeply rooted in students' thinking.

2.2 Designing a community survey module grounded in society and behavior A major shortcoming of many student designs today is their disconnection from social reality, prioritizing surface-level aesthetics. Yet, the very essence of human settlements is the gathering and interaction of people, meaning their actual needs must be at the forefront, thus the importance of a module on social and behavioral investigation. The emphasis here is on taking students beyond the classroom to carry out real-life surveys, focusing on specific groups, such as the elderly or children, and examining their movement patterns, points of pause, and social desires within a space. Using authentic survey data as a basis and springboard for design, this course content deepens students' grasp of "people's real needs."

2.3 Designing an implementation mechanism module grounded in time and operation In classroom learning, students are ultimately expected to produce an outcome, which serves as the primary basis for teachers to assess their mastery of the course content. However, traditional teaching often requires students to submit a final-state blueprint, preventing the teacher from seeing the students' learning process. Human settlements are not static; they are a dynamically evolving organism. Therefore, a module that can reflect the entire design process, namely the "implementation mechanism module", needs to be added to the course content. Before designing, students must carry out, step by step, urban renewal needs analysis, timeline planning, clarification of property rights boundaries, and public participation work. The final deliverables include both a "spatial blueprint" and an implementation plan. Such course content can train students' process design ability.

3 Innovating the course teaching methods

With a scientific content system in place, it is also necessary to adopt innovative teaching methods that allow students to "learn by doing" and hone their human settlements construction capabilities in real and complex situations.

3.1 Creating authentic situations In traditional teaching, students are confronted with "fake bases" featuring flat terrain and favorable conditions. Their design ideas may appear sound, but they are often difficult to implement in a real environment^[4]. Based on the requirements of the "sciences of human settlements," teachers should select real human settlements areas for students, especially problem areas such as old residential communities and the fringe zones of urban villages. These areas are extremely complex: when designing, students must consider factors such as elevation constraints, sunlight obstruction, and the conflict between preserving and demolishing existing buildings. Such authentic situations force students to design with a down-to-earth approach and strengthen their ability to solve real human settlements problems.

3.2 Introducing multidisciplinary backgrounds and joint teaching Urban design courses are generally based on architecture, urban and rural planning, and landscape architecture. However, human settlements are highly complex, involving knowledge that extends far beyond these three fields, including sociology and psychology. In teaching, teachers can adopt interdisciplinary integrated teaching methods, organize cross-disciplinary joint workshops, and mix students from different majors into groups to leverage their respective strengths. In interdisciplinary integration, the conventional approach is to integrate engineering disciplines with one another. Yet, given the complexity of human settlements, teachers can introduce faculty and students from non-engineering backgrounds, such as sociology, economics, and even psychology, and invite them to participate in design drawing analysis activities or to co-teach with the instructors. Through such integrated teaching methods, students will broaden their knowledge and, when confronted with spatial problems, will be able to think from multiple angles to find optimal solutions.

3.3 Simulating multi-stakeholder interest gaming to carry out deduction-based teaching Urban design is essentially the redistribution of spatial interests. In order to help students understand the complexity of human settlements, role-playing and gaming deduction methods should be introduced into teaching. At the scheme formation stage, the teacher can divide students into groups to play different stakeholders, such as government planning managers, developers, elderly indigenous residents, and young migrant tenants. By organizing simulated public hearings or community roundtable discussions, each party can question and debate the preliminary plan from their own standpoint. This teaching method greatly hones students' communication skills and empathy, enhancing their ability to solve complex problems.

4 Conclusions

In summary, examining the teaching of urban design courses in universities against the backdrop of "human settlements" requires teachers to correctly understand the essence of urban design and to truly integrate the complex elements of natural ecology,

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ments and participate in discussions^[3]. In addition, online platforms can be utilized for after class tutoring, assignment distribution, and evaluation feedback, thereby extending the time and space of classroom teaching. Blended learning emphasizes student autonomy and personalized learning, allowing students to independently choose learning content and methods according to their own progress and needs.

2.4.2 Implementing interdisciplinary collaboration. Teachers can organize interdisciplinary experimental projects, grouping students from different academic backgrounds to complete comprehensive experiments together. During project implementation, students must apply multidisciplinary knowledge and methods, communicate effectively, and collaborate to solve problems collectively^[4]. Instructors from various disciplines can be invited to participate in experimental teaching, jointly designing experiment content and teaching plans to provide students with interdisciplinary guidance. Additionally, academic lectures, seminars, and other cross disciplinary exchange activities can be held, helping students understand different research approaches and stay updated on cutting edge developments, thereby broadening their academic perspectives.

2.4.3 Enhancing field practice. The duration and frequency of field practice should be increased to encourage students to step out of the laboratory and immerse themselves in natural environments, where they can personally experience and observe ecological phenomena. During field practice, emphasis should be placed on cultivating students' abilities to observe, analyze, and solve problems. Instructors should guide students in applying acquired knowledge and methods to investigate, monitor, and analyze natural ecosystems, thereby enriching the content and forms of field practice. In addition to traditional field surveys and sampling, activities such as ecological restoration, environmental

monitoring, and science popularization can be organized. These experiences enable students to understand the importance of ecological and environmental protection and enhance their sense of social responsibility.

3 Conclusions

Ecological experiment teaching reform is a systematic project that requires coordinated advancement across multiple dimensions, including content design, skill training, resource support, and model innovation. Optimizing the experiment structure and introducing project-based learning can stimulate students' inquiry motivation. Implementing modular skill training and diversified assessment can solidify students' practical foundation. Upgrading hardware and expanding off-campus resources can broaden students' learning boundaries. Conducting blended teaching, interdisciplinary collaboration, and field practice can enhance students' ability to solve complex problems.

References

- [1] YANG HF. Teaching practice and exploration of experimental courses in colleges and universities under the background of new national standard: Taking ecology experiments as an example[J]. *Journal of Suzhou University*, 2023, 38(6): 73 – 76. (in Chinese).
- [2] ZENG WL, MA WQ, CHEN CH, *et al.* Teaching reform of "basic experiment of ecology" [J]. *Laboratory Science*, 2019, 22(5): 119 – 121, 125. (in Chinese).
- [3] WANG ZJ. Discussion on the situation, problems and countermeasures of GIS experimental teaching for ecology majors [J]. *Laboratory Science*, 2019, 22(2): 102 – 105. (in Chinese).
- [4] LI TX. Speeding up the reform of experimental courses and cultivating innovative talents: Taking the reform of ecological experimental courses as an example[J]. *Education Exploration*, 2012(10): 32 – 36. (in Chinese).

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social humanities, and economic operations into every aspect of teaching. Only by elevating the conceptual dimension of objectives, systematically reorganizing content, and achieving cross-disciplinary synergy of methods can we guide students to enhance their design capabilities within the intricate real urban system. In this way, we can cultivate versatile and innovative urban design talents who possess profound humanistic sentiments and a grand ecological vision, while being down-to-earth and capable of effectively solving the human settlements pain points faced by ordinary people.

References

- [1] YANG JY, DU J. Teaching reform and practice of "blended course of ur-

ban design theory and method" [J]. *Modern Vocational Education*, 2025 (12):81 – 84. (in Chinese).

- [2] SUN CS, ZHANG CY. Research on the teaching reform of urban design courses in the context of digital education[J]. *Journal of Nanning Normal University (Natural Science Edition)*, 2025, 42(2):103 – 108. (in Chinese).
- [3] CHEN JH, DENG YY, YIN ZN, *et al.* Research on ideological and political teaching of Urban Design course in ordinary colleges and university [J]. *Shanxi Architecture*, 2025, 51(6):182 – 185. (in Chinese).
- [4] YANG LC, PENG YA, CHEN CD, *et al.* Empowering Urban Design course teaching with AIGC[J]. *Journal of Urban Sciences*, 2025, 3(1): 111 – 116. (in Chinese).