

# *Innovative Design of "Environmental Psychology" Based on the Linkage in and out of Class*

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**Abstract:** Based on the current situation of the course "Environmental Psychology", we analyze and summarize the painful problems in the traditional teaching, establish the idea of connecting the teaching links inside and outside the classroom and the system of theory and design courses, propose specific measures such as optimizing teaching contents, introducing project-based teaching and strengthening process evaluation, and explore the teaching mode and cultivation ways of high-quality and application-oriented talents in landscape architecture for local engineering colleges. The aim is to help students construct an interdisciplinary knowledge system, develop investigation and research ability, and form "people-oriented" values, and provide reference for landscape architecture theory course reform and teaching innovation design.

## **1. Background of the Innovative Design of "Environmental Psychology"**

As an important branch of the Habitat and Environment discipline group, the landscape architecture discipline has become increasingly rich in its outreach, with new types of urban greenways and pocket parks emerging, but its connotation has always focused on the comprehensive study of people and the environment. Landscape architecture majors always emphasize the synergy between professional knowledge system and professional practice system in talent training. However, at present, the construction of the landscape gardening practice teaching system is not perfect, and the experimental teaching in the learning stage presents fragmented and one-sided characteristics. Students generally have problems such as being good at "plane form expression" but lacking "engineering technology concept", lacking awareness of conversion between drawing design and actual engineering construction and professional innovation ability.

Environmental psychology is a science that studies the interrelationship between human beings and the material environment of various scales around them, with the goal of improving the quality of human life, and has important practical significance for today's Chinese society[1-2]. The course "Environmental Psychology" is the core theoretical course in the talent training system of landscape architecture majors, emphasizing first of all its characteristics as an applied discipline, which should apply research results to practice [3]. The traditional classroom lecture method commonly used at

present is difficult to stimulate students' spirit of exploration and innovative thinking, and the degree of students' mastery of knowledge is difficult to adapt to the development of the industry and social needs [4].

## **2. Overview of "Environmental Psychology"**

"Environmental Psychology" is a theoretical course shared by the three architectural majors of architecture, urban and rural planning, and landscape architecture. Most of the colleges and universities of landscape architecture and art have offered this course.

### **2.1. Current Status of "Environmental Psychology"**

#### **2.1.1. The Current Situation of "Environmental Psychology" in China's Landscape Architecture Talent Training**

Environmental Psychology is a basic theory course for landscape architecture majors and one of the important theoretical supports for landscape architecture education. The teaching tasks of Environmental Psychology include enabling students to grasp the basic theories and principles of the discipline, learn the methods of environmental behavior investigation and research, and emphasize the practical and comprehensive application of the discipline's knowledge, while establishing its connection with planning and design. There are many types of landscape architecture colleges in China, but colleges and universities in construction, agriculture and forestry, and art all set Environmental Psychology as an important professional foundation course in their personnel training programs. The landscape architecture program of Tongji University has also built a course cluster of "Environmental Psychology" and offered minor courses such as "Photo Collage" and "Ecological Constructs".

#### **2.1.2. The Current Situation of "Environmental Psychology" Offered By the Landscape Architecture Major in Chongqing Jiaotong University**

Since the implementation of the large class enrollment of architecture in Chongqing Jiaotong University, according to the current personnel training program and syllabus, the course "Environmental Psychology" for landscape architecture majors is offered in the third year of study, with a total of 32 hours (all theoretical hours) and 2 credits. The third year of landscape architecture is the stage of training students to understand and master the design methods of relatively complex sites, and it is the process of combining landscape architecture planning and design with engineering technology to ensure the feasibility of the program. "Environmental Psychology", as an interdisciplinary subject, is offered in the junior year and is the theoretical basis for students' design thinking to transition from putting into collection.

The landscape architecture program of Chongqing Jiaotong University is based on the training model of "two years of architecture education+three years of landscape architecture education". The main courses before studying this course are: Architectural Design Foundation (1&2) and Architectural Design (1&2). Students are mainly trained in the design methods and design expression of simple architecture. The design of courtyard landscape and residential landscape in Landscape Planning and Design (1&2), which are conducted simultaneously with Environmental Psychology, already involve more complex site design. At this time, combined with the teaching of the course "Environmental Psychology", students can step out of architectural design and evaluate and reflect on the results of past designs from the perspectives of landscape architecture, psychology, and sociology.

## **2.2. Painful Issues in the Innovative Design of "Environmental Psychology"**

As a typical theoretical course in architecture, the traditional teaching method of "Environmental Psychology" is mostly accepted by students passively [5], and the achievement of course objectives is not high.

### **2.2.1. Single and Old Teaching Methods, Low Student Participation in the Classroom**

In the traditional teaching mode, the course of Environmental Psychology mainly achieves the teaching purpose through theoretical lectures and simple psychological experiments, behavioral experiments and case studies. Students mostly accept the arrangement of learning tasks passively, lacking the process of independent thinking and innovation, and are often not active and do not pay attention to the course learning, leaving a rigid and boring impression on the teaching of theoretical courses, with poor learning effect.

### **2.2.2. The Lack of Practical Teaching Links Makes It Difficult to Convert Knowledge into Application**

Limited by the number of class hours and syllabus arrangement, the existing Environmental Psychology course has no comprehensive practical sessions except for a few psychological experiments and behavioral experiments. In addition, the assessment method is the course paper, students can neither deepen their understanding of the theoretical framework through memorizing knowledge points, nor transform knowledge into professional skills through practice. The teaching effect is not satisfactory and fails to achieve the purpose of this course.

### **2.2.3. Disconnected from the Main Curriculum Makes the Capacity Development Cannot Form a Closed Loop**

Landscape garden design is the core knowledge area of landscape gardening professional education and an important content of professional ability cultivation. Environmental Psychology is an important theoretical support and supplement for the main design courses, but the existing Environmental Psychology course experiments are disconnected from other courses, and it is difficult for students to form a coherent and comprehensive application of knowledge. Most of the students still focus on the "innovation" of the form when designing, and seek for new and strange, but ignore the relevant theoretical knowledge to improve the essence of design, rarely can the theoretical knowledge and practical methods of Environmental Psychology be flexibly applied to the practical design courses.

## **3. Initiatives for the Innovative Design of "Environmental Psychology"**

Based on the learning situation and existing problems, the course team broke the restrictions inside and outside the classroom and carried out innovative design of the course.

### **3.1. The General Ideas of Curriculum Innovation Design**

Based on the above problems, the teaching of "Environmental Psychology" is generally unable to adapt to the current learning situation, and it is difficult to achieve the established teaching goals. It is urgent to optimize and innovate in terms of teaching content, classroom organization, and practical teaching methods.

### **3.1.1. Optimize the Traditional Lecture Mode**

According to the training objectives of talents in landscape architecture, combine the characteristics of the course "Environmental Psychology", take theoretical application as the guide, and introduce the experimental teaching mode of linkage inside and outside the classroom in the traditional theoretical class teaching mode. Enhance students' comprehension of complex abstract theories and mobilize their learning enthusiasm in order to obtain the best teaching effect.

### **3.1.2. Optimize Professional Teaching Content**

Improve the problems that arise in the teaching process, further integrate and optimize course content according to the requirements for competency of landscape architecture talent training program and related main courses, highlight important and difficult points, and improve teaching effectiveness.

### **3.1.3. Reform Traditional Teaching Methods**

By arranging short, interactive and highly relevant classroom experiments, classroom vitality and motivation can be enhanced.

### **3.1.4. Cultivating Students' Practical Ability**

For the characteristics of landscape architecture majors, in-class experiments and extra-curricular research are conducted in conjunction with theoretical teaching. Students learn to collect data, formulate research plans, collect and analyze data, and make judgments and decisions in real situations, focusing on cultivating students' ability to identify problems, analyze problems and solve problems, and improving their theoretical application level and innovation ability.

## **3.2. The Specific Measures of Curriculum Innovation Design**

Starting from the internal and external aspects of the course, connecting the theoretical and design courses externally, and carrying out comprehensive reforms in terms of content, organization and implementation, and assessment internally.

### **3.2.1. Establishing the Experimental Teaching Mechanism of Linkage in and Out Of Class**

Adding student-teacher interaction to classroom teaching, i.e., transforming some of the course content lectures into behavioral experiments and psychological tests for students in the classroom, so as to promote students' autonomy and participation and transform them from passive receptive learning

### **3.2.2. Reconstructing the Teaching Content System**

According to the research content of the discipline of environmental psychology, the teaching content of the course "Environmental Psychology" offered by landscape architecture majors is mainly composed of two parts: basic theory and applied practice [6]. The theoretical part includes the basic theory of human-environment relationship, environmental perception, cognition and behavior, etc. The practical part includes environmental psychology research methods and their applications, mainly through the comprehensive application of questionnaire interviews, behavioral observation, spatial analysis and other research methods to explore the interaction between environment-human-behavior, cognitive architecture and urban environment and establish

connections with design practice, strengthen students' ability to understand and design from the environmental perspective, and cultivate independent thinking, problem identification and problem solving skills. The main purpose of the course is to explore the environment-people-behavior interaction, to recognize the architectural and urban environment, and to establish a connection with design practice, to strengthen students' ability to understand and design space from an environmental perspective, and to develop the ability to think independently, identify problems and solve them [7].

### 3.2.3. Forming a Closed Loop of Competence through the Main Design Courses

Combined with the main courses such as Landscape Garden Planning and Design, it provides a theoretical basis for the design course and forms a teaching mode based on theoretical research and oriented to practical application. At the same time, the extra-curricular practice session takes students' landscape garden types in the design course as the research object, and uses the knowledge learned to conduct case selection-data collection-site research-discussion and analysis-summary and evaluation, so as to realize site perception, evaluation and design feedback. Through the reform of experimental teaching mode, the teaching content of Environmental Psychology course is integrated and coherent with the simultaneous series of courses on landscape garden planning and design (Figure 1), so that students can directly apply the relevant principles of Environmental Psychology to the course design.

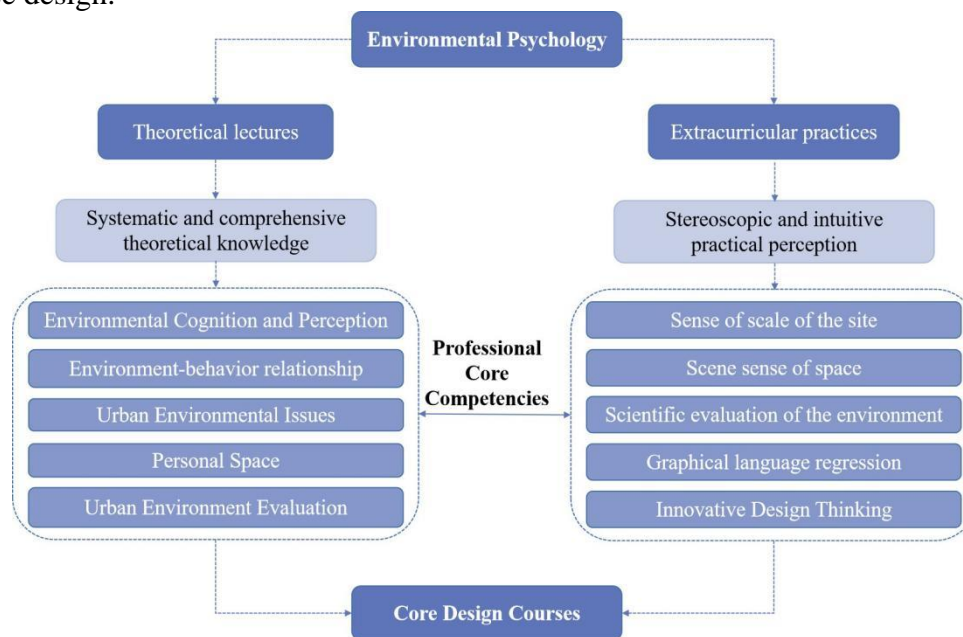


Figure 1: Reconfiguration of the knowledge framework of the coherent main design course

### 3.2.4. A Flipped Approach to Classroom Instruction that Promotes Student Engagement

The traditional classroom lecture mode is changed, and the experimental teaching sessions are arranged according to the chapter content, such as environmental cognition, Gestalt interpretation of classical architecture, behavioral scene experiment, and personal space experiment [8]. The experimental purpose is achieved by using students' group experiments, role play and scene observation to achieve better teaching effect. Experiential learning guides students to become personally aware of the changing patterns of design content and user behavior in environmental spaces, enabling them to more effectively grasp design methods that enhance the quality of the environment and understand its value [9].

### 3.2.5. Extracurricular Experimental Teaching Mode Relying on Integrated Cognition

Due to the very limited 32 hours of classroom teaching and the complicated theoretical knowledge system, comprehensive cognitive maps, research and analysis experiments are arranged for students to conduct in class. Students are guided through the experimental process of "case selection - data collection - field research - discussion and analysis - summary and evaluation". The class is divided into groups of 3-4 students, who choose an urban built environment or campus built environment of interest (the teacher gives a range first) to conduct thematic research, based on the knowledge taught in class, the research methods and experimental skills taught in the classroom mini-lab, and the theories of landscape architecture and other related disciplines as references, so that students can truly master the cognitive and evaluation skills of landscape architecture sites [10]. The course is based on the research methods and experimental skills taught in the classroom mini-experiments, and the theories of landscape architecture and other related disciplines (Table 1).

Table 1: This caption has one line so it is centered

Built environment of the campus	Urban Built Environment
Comprehensive research type	Square/Park/Street side green space
Comprehensive research type	Street pedestrian environment
Applied Technology Type	Railway stations
Specialized colleges and universities	Affiliated Green Space (Hospital/Residential area)

### 3.2.6. Assessment and Evaluation System Emphasizing Process Evaluation

Traditionally, the course of Environmental Psychology is assessed in the form of a paper, and the students mainly take the approach of reviewing literature and collecting data without leaving home, but they do not really go out to perceive and analyze the environment and sites in the field.

On the one hand, change the way of examination to the cognition and evaluation of the actual site, and the requirements of the results include cognitive maps, mapping drawings, design drawings and other forms. On the other hand, the composition and percentage of the usual grades (40% of the total grade) are adjusted. 25% of the usual grade is attendance and classroom performance, 25% is the completion of the classroom experiment accompanying report, and 50% is the observation and reporting of the campus outdoor environment (to test students' observation, recording and presentation skills).

## 4. Conclusion

The course has achieved certain results through innovative design, but the course reform cannot be achieved overnight. Through student feedback and teaching reflection, the course still has the following problems to be improved, which will also become an important driving force for the continuous optimization of the course.

### 4.1. Student Feedback on Courses and Sample Size Needs to Be Increased

During the two-year study period, the Environmental Psychology course was offered twice, with a total of 63 students taught. Although certain suggestions and opinions were collected through the feedback from two consecutive classes of landscape architecture students in 2016 and 2017, corresponding improvements were made. However, the overall sample size is small and cannot reflect the problem comprehensively.

## 4.2. The Evaluation of Individual Results in the Assessment Method Needs to Be Optimized

The site required to be researched for the course synthesis report covers a large area and has many experimental contents that students cannot complete independently, so they are assigned in groups of 3-4 students. However, some problems were revealed in the process of dividing the work to be completed. Although students were required to clearly indicate the workload of each student at the end, it could only be used as a reference for grading and could not be fully followed.

## 4.3. The Coherence with Other Main Courses Still Needs to Be Strengthened

By taking this course, students' performance in subsequent design courses has improved significantly, especially in site research and analysis, and in grasping the needs and preferences of the people who use them. However, in general, the courses are still compartmentalized and not very coherent.

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