

## Research on Project-Oriented Teaching Mode of Interior Design Major: Take the Course Design Research and User Survey as an Example

Manjie Yang<sup>1,\*</sup>, Mengge Huo<sup>2</sup>, Hongyi Li<sup>1</sup>

1.Interior Design, Geely University of China, Chengdu 610000, Sichuan, China

2.Graphic Design, Geely University of China, Chengdu 610000, Sichuan, China

\*corresponding author

**Keywords:** Project-oriented, Design research, User research, Empathy, Interior design

**Abstract:** Design Research and User Survey is a major compulsory course of Interior Design in the School of Art and Design of Geely University. Its follow-up courses include visual communication synthesis, landscape planning and design of residential districts, commercial display design and so on. This course, mainly based on design research and investigation and user research, uses data collection method to help students to master basic concepts, methods, modes and application procedures of design research and user research. It aims to balance students' skills in drawing design solutions with their visualization skills for drawing problems and demands, to create new design tools and research methods and to design ideas, systems and methods through user research and experience in user research field. In this course, the mode of design research report writing and the mode of task card workshop driving are used to design applications for this program.

### 1. Introduction

This paper is a “project-oriented” teaching design and research on Design Research and User Survey and it shows joint learning phased results of Department of Landscape Construction and teachers and students of Interior Design major of the university. Investigation reports are made through field research and final landscape concept scheme is output. In this way, students' abilities in designing investigation and survey and using user research methods are cultivated and their ability of user research, their ability to understand users with empathy and their ability to define design problems are improved.

### 2. Introduction

Design Research and User Survey is a major compulsory course of Interior Design in the School of Art and Design of Geely University. Its follow-up courses include visual communication synthesis, landscape planning and design of residential districts and so on. This course, mainly based on design research and investigation and user research, uses data collection method to help students to master basic concepts, methods, modes and application procedures of design research and user research. It aims to balance students' skills in drawing design solutions with their visualization skills for drawing problems and demands, to create new design tools and research methods and to design ideas, systems and methods through user research and experience in user research field. In this course, the mode of design research report writing and the mode of task card workshop driving are used to design applications for this program.

The first part of this course: Design research is a basic skill to be mastered by students majoring in interior design. The first part includes two sections, which include site analysis and research method and user research and analysis method. The first part will analyze the site and the big environment (overall planning, background, limitations and opportunities), the scope of site analysis, general principles for site selection, land planning standards, site layout and function streamline analysis (social and geographical climate), analysis of natural environments (soil,

topography, climate and vegetation), infrastructure and public utilities. The second part focuses on analyzing user research and data collection methods, such as observation method, brainstorming method and so on. This part explains some commonly used research and analysis methods, such as quantitative comparison analysis, perception map, card induction method, scenario method, character role method, storyboard, usability testing, A/B testing, user click behavior analysis, big data and other research methods.

User research and experience design of the second part focuses on ideas, systems and methods in the field of user research. Besides, some cases are used to explain POEMS framework, usability evaluation, eye tracking, and other user research methods and to further introduce the experience picture, perception positioning picture, product evolution picture, image billboard and other important auxiliary design terminals and user ends for information communication.

The third part mainly includes the introduction and application of user model, user journey mapping, stakeholders, service blueprint and other design tools.

The last part includes two workshops: Campus landscape research report of Geely University and the landscape conceptual scheme designed on the basis of the task cards.

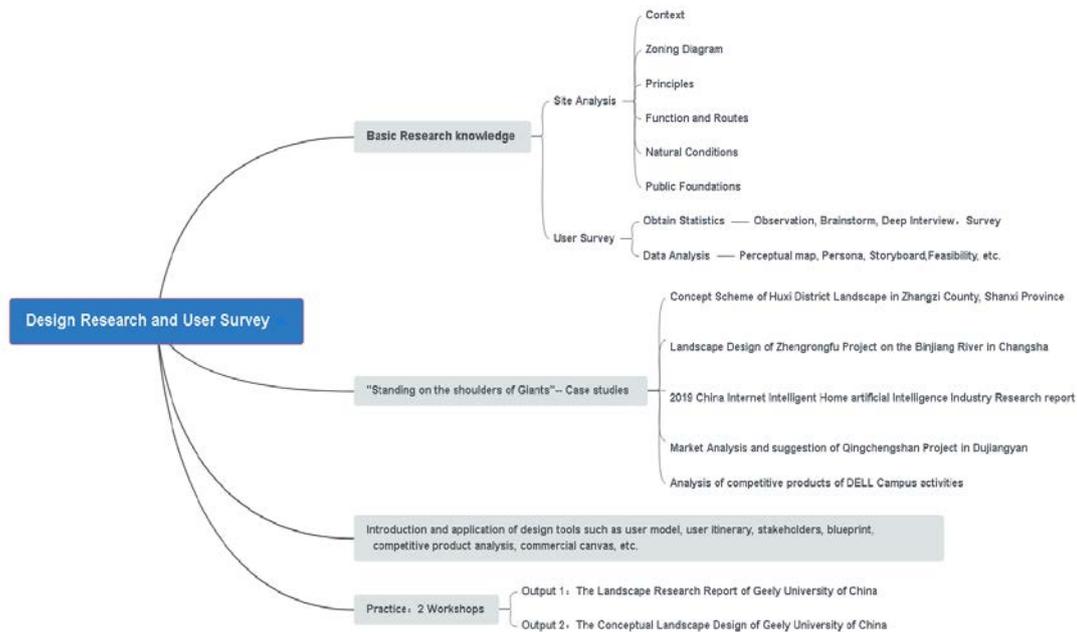


Fig.1 The Framework of Design Research and User Survey

### 3. Background

#### 3.1 Current Situations of Domestic Curriculum Teaching

There are few special courses related to Design Research and User Survey in China. Most of the courses focus on research services for business market economy or services for digital media interaction design and user experience. However, there are few studies of interior design and architectural design on this course. Throughout the interior design market of China, there is no mature education system for design process of designers. Designers rely too much on stereotyped the design software and the “copinism” cutout effect, which often leads to intermingled abilities of designers and the lack of systematic and logical designs.

Architectural design, landscape design and interior design are three major disciplines of environmental art design which can interpret space. They can reflect students' artistic accomplishment ability and can test students' logical thinking ability, their ability to find problems based on demand analysis and their ability to systematically design and solve problems. They should master all courses through a comprehensive study of all subjects. At present, many major design firms pay attention to the culture implantation in their design schemes and they gradually

confuse the boundaries between architecture, landscape and interior design. Instead, they emphasize systematicness, integrity, logic and regionalism. Conceptual scheme and preliminary research are often used as basis for respecting Party A and good designs. Broadly speaking, architecture, interior and landscape design all belong to architectural design. Therefore, it is particularly important for students majoring in interior design to combine project-based research with design so that they can improve the application quality of the survey method, explore the feasibility of the combined application of the survey method and to find more effective combination application forms of the survey methods.

### **3.2 Curriculum Research Background At Foreign Countries**

Design Research and User Survey is a common course in advanced European countries. In the top 20 universities in the UK, such as University of Sheffield, the University of Durham, the University of Newcastle and the University of Edinburgh, contents of the course Design Research and User Survey include short-term practical training content or site analysis and theoretical courses are usually carried out in the form of design research. This course, featured by interestingness and interactivity, highlights research methodology and aims to cultivate students' creativity in their problem discovery and problem solving process according to practical situations on site. The Design Research and User Survey in China is changing from focusing on changing students' thinking design states from 2D to 3D so as to seek truth from facts. In this way, students can find problems according to actual situations of the site and carry out design which can solve problems. Besides, their insight and sensitivity for materials, big environment and small environment, campus culture, user behavior and user demands and abilities to control and express things can also be improved.

Students learning interior design should not only focus on learning knowledge of units, but should have overall viewpoints and comprehensively learn architecture, planning and landscape designs. For example, APL college of Newcastle University, known as old "red brick school", offers an interdisciplinary Charlotte Week for freshmen majoring in architecture, landscape and interior design. The preliminary project aims to guide students to find problems, and design the workshops according to the task card. The output products include landscape sketch, sculpture, exhibition space design and so on.

## **4. Methodology**

This paper mainly uses such teaching methods as project-oriented learning and split class to do course design. In the class, teachers tend to lead students to make conceptual landscape design schemes according to their field research, questionnaires and research reports. Neural assessment method, which has exploratory and explanatory natures, is used to evaluate teaching effects. The research focus on the feedback of Interior Design major students under the project-oriented learning mode. It shows how students improve their ability to solve problems through design thoughts.

Neurology evaluates design ability indicators of students majoring in indoor design through qualitative and quantitative researches. This paper collects sample data of 33 top-up students majoring in indoor design and 35 junior undergraduate students and carries out in-depth interview and observation to ensure the content validity of observation tools according to different sources. The reliability index is as high as 0.993 and the research paradigm is shown in the figure.

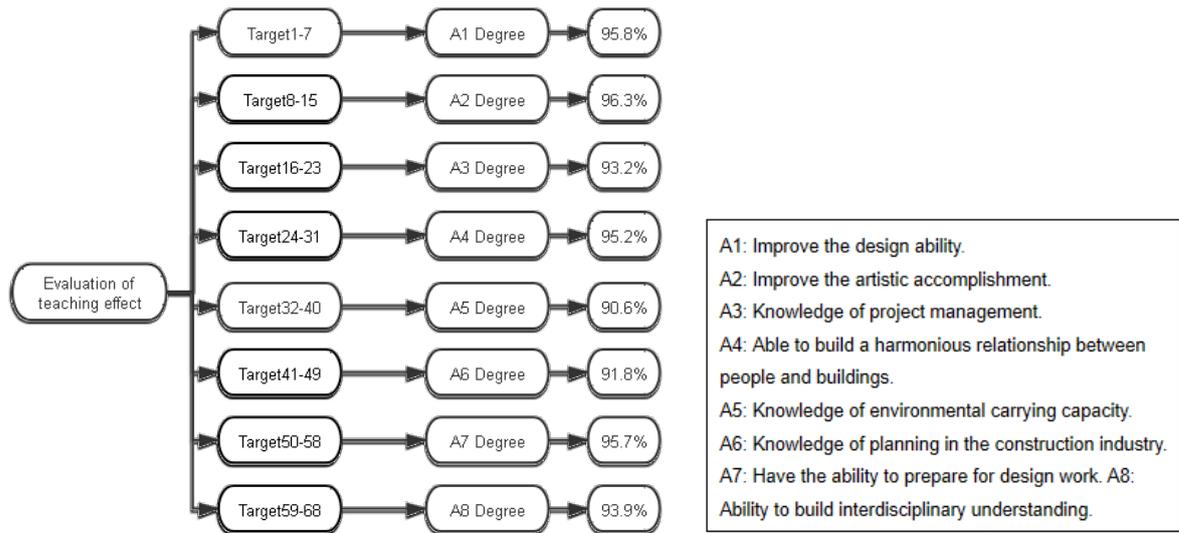


Fig.2 The Judgement of Design Research and User Survey

This research will be used as an important reference source for environmental art students in their realizing collaboration when they design courses. This paper aims to improve students' artistic accomplishment, knowledge accomplishment, data processing ability, logical thinking ability, creativity and other abilities and to analyze teaching views on team building and course researches. According to research results, students still have relatively weak abilities (less than 95%) in terms of project management knowledge, environmental carrying capacity knowledge and architectural planning knowledge. Besides, their abilities to deal with the harmonious relationship between people and the environment, the ability to prepare for the design and their artistic design abilities have all been significantly improved (for more than 95%).

## 5. Teaching Tasks and Achievements

### 5.1 Teaching Tasks

This course is mainly researched through the expository method, the discussion method, field research, questionnaire survey, bipartition classes and workshop with the aid of challenging learning, group learning, modular learning, distributed and integrated mode and other teaching methods. It based on multidisciplinary teamwork model, uses open innovative tools to realize interior design concepts.

| week | Arrangement   | Task cards:   |
|------|---|---|
| 1    | Analysis and research of building / interior site and explanation of user research methods. | ① Art installation design (environmental behavior).               |
| 2    | Workshop1: Site Analysis Research Report of University                                      | ② one street, one perspective (emotional architecture).           |
| 3    | Workshop2: Landscape Conceptual Design based on task cards.                                 | ③ Landscape planning (natural science).                           |
| 4    | Outputs and Final Review  | ④ Traffic and ramp design (barrier-free design).                  |
|      |   | ⑤ Wisdom guide card (Smart facility).                             |
|      |   | ⑥ Public space (shared space design).                             |
|      |   | ⑦ Discussion on cultural regionality and typology (citizen life). |

Fig.3 The Arrangement and Tasks of Design Research and User Survey

### 5.2 Part of Teaching Results

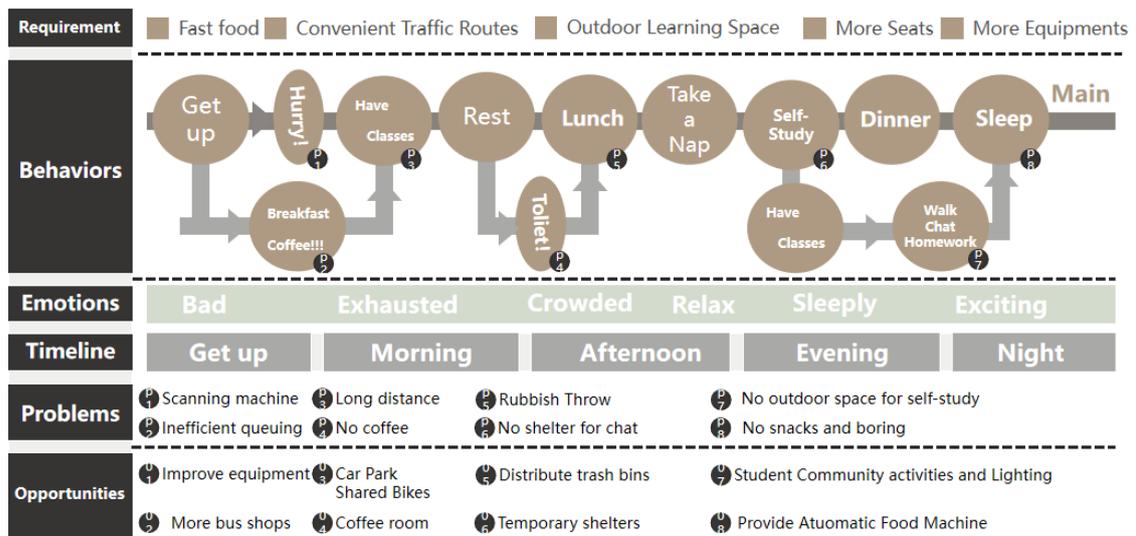
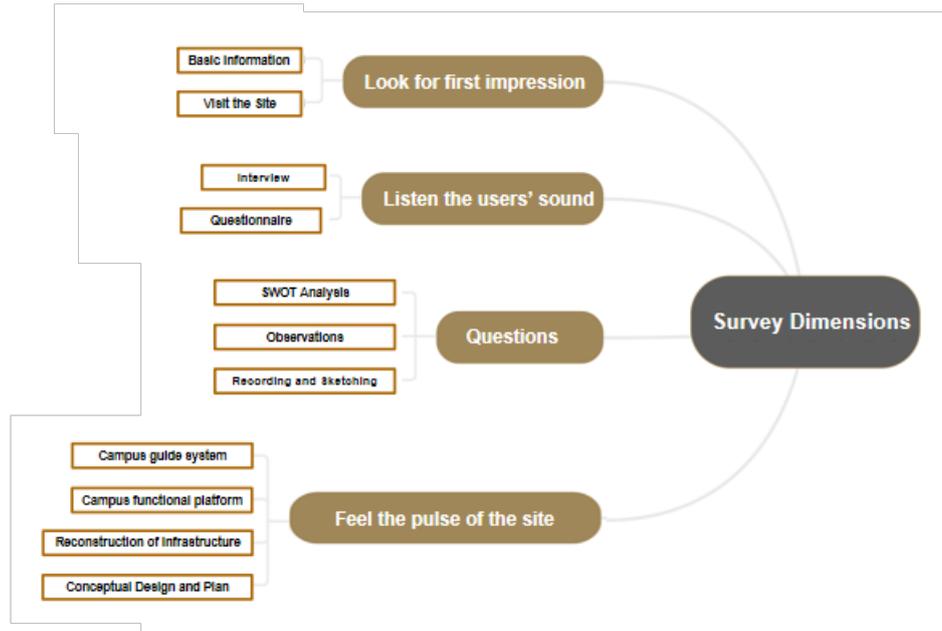


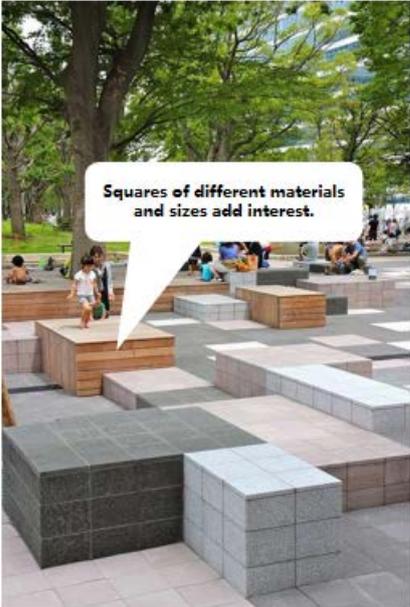
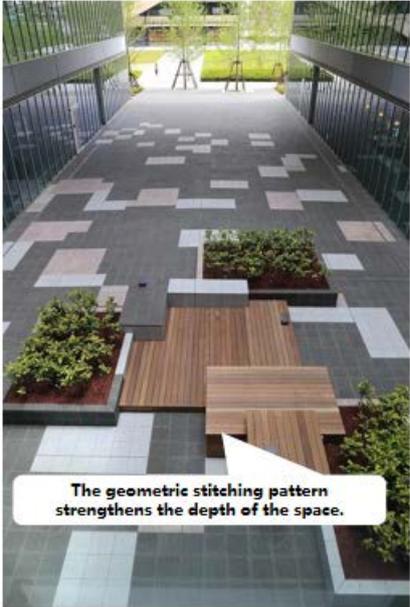
Fig.4 The Mind Map and Journey Map from the Student

Figure 4 shows the mind map and user journey map made by students through Design Research and User Survey in the stage of user survey. It has ingenious designs and systematic and logical thoughts and collects data through investigation method of traditional Chinese medicine of “look, listen, question and feel the pulse”. The data collected during field investigation are analyzed. Figure 5 shows the plant arrangement map and important landscape node location map designed by students according to field investigation results and vegetation conditions. It is featured by strong standardization and reasonable spatial arrangement. Figure 6 shows some participatory design and conceptual design scheme carried out by students based on the actual research results. It reveals that students have a stronger understanding of the construction of campus culture and the space for human activities.

- 1 Main entrance
- 2 Entrance view sculpture
- 3 Sunken square
- 4 Coffee
- 5 Car Park
- 6 Shelter
- 7 Sculptures
- 8 Cultural wall



Fig.5 The Planning Map from the Student





*Fig. 6 The Concept Perspectives from the student*

## 6. Conclusion

After learning 32-class Design Research and User Survey, students majoring in environmental arts have improved their abilities from three aspects through project-oriented learning. First, students can participate in the construction and have a deeper understanding of campus culture and can master and apply data collection methods, such as observation method and brainstorming method. Besides, commonly used research and analysis methods and design processes are described so that students can be familiar with user behaviors and improve their empathy. Second, through making research reports, such as site analysis, customer analysis, project feasibility analysis, students are able to use comparative analysis, perception map, card induction, scenario method, persona method, storyboard, usability testing, A/B testing, user click behavior analysis, big data and other research methods. Third, through making landscape conceptual design schemes, including landscape intention figure, analysis figure, node positioning figure, plant configuration figure, outdoor furniture spot figure, laying and conception of temporary structures, students can understand the most important contents of preliminary projects of environmental art design. The application of Participatory design can help students better understand logicity and systematicness of the design. Therefore, we can see that project-oriented learning mode can effectively improve students' ability in designing preliminary site, analyzing user demands and controlling the overall situation. In the teaching design process in colleges and universities, the analysis of feasibility of designs and the guidance of design methodology mean both responsibilities and tests for teachers.

## References

- [1] Hertzberger, H., Lessons for Students in Architecture. Rotterdam: 010 Publishers, pp.20-28, 2009.
- [2] Gehl, J., Cities for People. Denmark: ISLAND PRESS, pp.50-72, 2010.
- [3] Baeli, M., Residential Retrofit : 20 Case Studies. London: Technology Strategy Board, pp.20-28, 2013.
- [4] Lucas, R., Research Methods for Architecture. London: Laurence King Publishing Ltd, pp.75-92, 2016.