

Research on the curriculum reform of architectural history in China and abroad with tradition as the core

Ren Xingyuan^{1,a,*}, Mao Yanhong^{1,b}

¹School of Architecture, Chengdu Textile College, Chengdu, China
^a7333792@qq.com, ^b2017712801@qq.com

Abstract: It is very important to reform the curriculum of Chinese and foreign architectural history with traditional culture as the core. Through the study of traditional culture, students can gain a deep understanding of history, culture, and thought. Through their own cultural understanding, they can promote the understanding of multiculturalism, and through these insights and understandings, promote the integration of tradition and modernity, enabling students to continuously practice modern design with traditional culture. The course includes four related topics: Chinese traditional dwellings, Chinese traditional gardens, Chinese traditional wooden mortise and tenon structures, and Chinese traditional aesthetic ideas. By incorporating case discussions on traditional architectural techniques and modernity transformation, the course aims to promote students' in-depth learning, enhance their interest, and enhance their design abilities.

Keywords: curriculum reform; architectural history in China and abroad; traditional culture

1. The importance of traditional culture in the course of Chinese and foreign architectural history

The course of Chinese and foreign architectural history is the basic course for students majoring in architecture. The course content includes typical buildings in China and foreign countries from ancient times to now. Through the study of Chinese and foreign architectural history, students can deeply understand the historical background, values and aesthetic pursuit of different cultures, thus enhancing their understanding and respect for multiculturalism. Students can also understand the impact of social systems, economic development and cultural changes on architectural style and function in different historical periods, thus providing historical basis and inspiration for architectural design, urban planning and cultural protection in real life. However, in the past teaching of Chinese and foreign architectural history, teachers often pay more attention to the shape, technology and materials of buildings, ignoring the historical and cultural background behind buildings. Moreover, because of limited class time and various contents, teachers can only talk shallowly even when they talk about culture. In the traditional teaching mode, the teaching content is divided into large and complex categories, cultural shallow talk, and systematic explanation. Under this traditional teaching mode, students have a low absorption rate of content and low design conversion rate. In order to enhance students' multicultural understanding and design conversion ability, it is necessary to understand from their own culture. For Chinese students, they first understand the traditional culture of China, and only after understanding themselves can they better understand other cultures and broaden their horizons. Students' thinking on Chinese ancient architectural culture can also provide inspiration and reference for modern architectural design, promoting the organic combination of tradition and modernity. It can be seen that traditional culture is very important in the course of Chinese and foreign architectural history. Therefore, it is imperative to strengthen the traditional culture part of the course of Chinese and foreign architectural history. This requires the reform of the course of Chinese and foreign architectural history with traditional culture as the core.

2. The reform strategy of thematic courses with traditional culture as the core

There are many contents in the course of Chinese and foreign architectural history. Under the condition of the same total class hours, it is difficult for teachers to carefully analyze the traditional culture behind every building. Therefore, teachers can change their thinking and select the most typical cases in a certain historical period and a certain style of architecture for in-depth analysis. Students can also learn by analogy, which is one of the methods of curriculum reform--setting thematic explanation. The contents of thematic explanation include comprehensive explanation of the architecture itself,

discussion of architectural ideas, and modern transformation design of traditional architecture. The ancient architecture system of China is considered to be the most ancient and most complete architecture system in the world. This reflects the enduring influence and stability of Chinese traditional culture, as well as its unique values and aesthetics. Chinese architecture takes Chinese culture as the center and Han culture as the main body. In the long process of development, it has always maintained the basic character of the system. Only by explaining the traditional architecture of China can students truly feel the relationship between traditional Chinese culture and traditional architecture. The topic of traditional Chinese architecture is divided into four parts: the topic of traditional Chinese dwellings, the topic of traditional Chinese gardens, the topic of traditional Chinese wooden structure and the topic of traditional Chinese aesthetics. The palace architecture of China is not selected as the topic of explanation in the architecture part, because the practical problems of students' future employment are considered, and the application of folk architecture in future design is more extensive. In addition to gardens and dwellings, the topic of traditional Chinese wooden structure -- tenon and tenon is added to explain. First, this technology is very important as the core of traditional Chinese wooden structure. Second, modern Chinese designers often use tenon and tenon as the main body of design to improve and design. .

2.1. The topic of traditional Chinese gardens

The four major gardens in China are the Summer Palace, Chengde Summer Resort, Humble Administrator's Garden and Liu Garden. Among them, the Summer Palace and Chengde Summer Resort are both former royal gardens. The royal gardens are too large, and students will have less application in future design work. The Garden belongs to the private garden in Suzhou, and its spatial organization is very exquisite, but the space area is small. The layout, spatial organization, aesthetic style of the garden are more comprehensive. Therefore, the topic of traditional Chinese garden is chosen by the Humble Administrator's Garden, which includes the layout method, spatial organization, aesthetic method of traditional garden, and plant configuration. The focus of the topic is the explanation and analysis of the Humble Administrator's Garden plane, which takes the Humble Administrator's Garden as the case to clearly explain the principles of the ancient garden's plane layout. The difficulty of the topic explanation is the transformation of learning content and practical design, as well as the transformation of traditional garden aesthetics and specific design methods. The final teaching goal is not only to enable students to appreciate traditional Chinese gardens, but to analyze the cases in depth, understand the inherent design points, and let students design the first draft of traditional Chinese gardens. The teaching process is divided into three parts: before class, during class, and after class. Before class, the task is assigned to students to find interesting cases in traditional Chinese gardens. During class, it is divided into introduction, historical background and overall overview of the Humble Administrator's Garden, spatial layout, ponds, rockeries, buildings, plant configuration scheme, several aesthetic methods including framing, suppressing, adding, missing, borrowing, etc., plan, small scene node design draft. After class, continue to improve the homework. The whole process is no longer classified and systematized by complex architectural history teaching, which is easier for students to understand. In addition, the combination of practice and theory allows students to step by step understand the specific design process of traditional Chinese gardens. The teaching effect is obviously improved, and students have a higher interest in the course.

2.2. Thematic Teaching of Traditional Chinese Dwellings

Traditional Chinese architecture is divided into many types, including traditional official architecture, traditional dwellings, and architecture of different regions and different ethnic groups. Regardless of the diversified architecture of ethnic minorities, the dwelling architecture of Chinese Han people presents different cultures and characteristics in different regions. Here, the local dwelling architecture of Ba Shu area is selected as the explanation, and the content that may be involved in the future design work is also selected. In terms of culture, Chinese official architecture pays more attention to the hierarchy system, and many rules are limited, which is not conducive to the adoption of cultural ideas or the modern transformation of design. The dwelling culture is more easily combined with modern cultural ideas. The course content includes the structure, decorative components, color, materials and so on of traditional Chinese dwellings. The focus of thematic teaching is the structural characteristics of the building. The difficulty lies in how to design the building with the meaning of traditional Chinese dwellings, and how to transform it into a building with modernity. The teaching process is also a combination of theory and practice. Students can find design inspiration from a single case, which drives students' interest in learning.

2.3. Special Topics on Chinese Traditional Wooden Structures mortise and tenon joints

Chinese architecture is often made of wooden structures, without the use of a single nail. The wooden structure connects the various components of the building, which is known as the mortise and tenon structure. In the thousands of years of Chinese civilization, mortise and tenon joints are one of the unique styles that distinguish them from other civilizations. As early as the Hemudu period, the use of mortise and tenon structures had already been discovered on site buildings, and this structure has continued to this day. The mortise and tenon structure is not only a simple wooden functional structure, but also an aesthetic and cultural symbol representing history and culture. So in order to understand the culture of traditional Chinese architecture, the most important technology - mortise and tenon structure - is one of the key points of teaching. The course specifically establishes a practical training studio for mortise and tenon models, which includes dozens of different mortise and tenon models, traditional building wood structure models, and traditional building wood structure grass frame models. In this thematic course, students will assemble mortise and tenon models by hand. In this course, students assemble tenon and mortise models in groups, starting with the simplest arch of wooden architecture model, then the grass frame in the structure, and finally the pure wood structure assembly of the whole building. From simple to complex, students gradually understand the specific construction methods of traditional Chinese wooden structures in this process. In this section, students learned about the spirit of craftsmanship in traditional Chinese culture and also learned about the exquisite traditional architectural skills. The focus of the course is to understand the mortise and tenon structure, while the difficulty lies in the assembly of the entire building. In terms of course effectiveness, students can improve their hands-on abilities and even assemble buildings, which can lead to a high sense of achievement.

2.4. Add a special lecture on traditional Chinese aesthetic cultural ideas

In addition to specific case studies, students who want to understand traditional architectural culture must also have a basic understanding of traditional thinking. However, in this ideological topic, the teaching objective is not to achieve logical and meticulous philosophical thinking. The focus of teaching is to make students feel traditional aesthetics and be able to identify the specific application of aesthetic ideas and traditional culture in traditional specific cases.

In the topic of traditional Chinese aesthetic culture, the teaching content includes the feeling of "spirit", "feelings", "Dao" and other concepts in traditional aesthetic ideas. Throughout the ancient painting theory, the painter Shi Tao explained that the construction of everything has "spirit", which is a kind of vivid spirit, so everything has this thinking. From the perspective of art, the literati realized that "god" or "vivid spirit" was the highest realm of artistic value they pursued. In addition, they also pursued "feeling", or the unity of spiritual and material things. Chinese art needs to express emotion in landscapes, "the mountain is my feeling"^[1], feeling is the inner temperament, self-emotion. Painters are interested in painting and believe that Tao is in mountains and rivers. They have been closely connected with mountains and rivers from the very beginning, and they are eager to return to the source of "Tao" through wisdom and art. Su Dongpo also expressed his similar viewpoint: "People, birds, palaces, utensils all have a constant shape", but "mountains, flowers, trees, water, waves, smoke and clouds, although they have no constant shape, they have a common sense"^[2]. Ancient Chinese aesthetics believed that figures, buildings, utensils and so on have constant forms so that there would not be such a "Dao". In ancient painting theory, the literati believed that the noblest thing was not the things that could be seen directly and constantly, but the shapes that were not fixed, such as mountains, flowers, trees, water, waves, smoke and clouds. Because they had various shapes, the literati could only draw the "li" that was the origin of the things. Such art is the "Tao" that contains the inexhaustible and unpredictable changes of everything. The art that can touch the origin of the world is the noblest art, and it is also the art that the literati value. In this topic, students will learn the aesthetic logic behind the design of traditional Chinese composition. Teachers will add or subtract this topic according to the absorption of students.

3. Exploring the Possibility of Modernity Transformation in Traditional Chinese Culture

Students studying traditional Chinese culture is not only about understanding itself, but more importantly, learning how to combine traditional culture with modern culture, modern technology, and modern materials to design new works that are in line with modern society. So, the course of Chinese architectural history will constantly emphasize the integration of traditional and modern thinking. This integration includes two aspects: one is the improvement and modern application of traditional Chinese wooden structure mortise and tenon joints, and the other is the practical integration method of Chinese

tradition and modernity in design cases.

3.1. Modernity Transformation of Traditional Chinese Architecture in Structural Technology

Traditional Chinese architecture is a mortise and tenon structure made of wooden materials. The mortise and tenon structure is very complex and has a rigorous regulatory system. The production process is exquisite and complex, time-consuming, and requires high technical skills. In the era of industrial machinery production, the complex and difficult to standardize mortise and tenon structure made it an obstacle to machinery production. With the arrival of modern society, new technologies and materials have begun to be used. In fields such as architecture and furniture, reinforced concrete and plywood have gradually replaced the use of mortise and tenon structures. However, these materials do not meet the requirements of green design in the new era, and the use of mortise and tenon structures presents a thriving scene. Therefore, the modern transformation of mortise and tenon structures explained in the course content has contemporary significance, which is also the rebirth of traditional culture. Students will consider issues such as green design and environmental protection design in this section. Nowadays, wooden furniture often uses adhesives, while traditional Chinese furniture is fixed with mortise and tenon structures. In the teaching of traditional Chinese architectural culture, it is also necessary to consider the modern innovative design of mortise and tenon structures. Students attempt to think and design new mortise and tenon structures, which not only have the characteristics of green environmental protection, but also integrate the meaning of Chinese culture, and adapt to the requirements of industrial mass production. The difficulty of this chapter is that students need to pay attention to formalism in the transformation of wooden structures. The focus of the course is to explain the improved version of mortise and tenon structures that can be mechanically produced, which can help students apply mortise and tenon structures in future design. This type of tenon and mortise structure suitable for mechanized production includes: straight tenons suitable for mass production, traditional dovetail tenons improved by Hoffmann in Germany, and improved zongzi angle tenons with added metal components. Using existing designer cases to explain, students can learn traditional structural design thinking methods from practical cases of modern Chinese design. For example, Fu Junmin's "Mortise and tenon Armchair", Hou Zhenguang's "Table by the South Mountain", Hong Wei's furniture works "Xi", and Chun Zai's "Ode to Bamboo" series of furniture. These works are more like three-dimensional wooden structures, representing traditional culture in an abstract way and expressing the designer's respect for ancient mortise and tenon craftsmanship. Some designers have made partial modifications to the mortise and tenon process and have effectively utilized it in terms of functionality. The course objective is to enable students to understand the exquisite craftsmanship of mortise and tenon structures, appreciate the beauty of structural form, and be able to engage in their own design thinking and create initial drafts.

3.2. Modern Transformation Design in the Aesthetic of Traditional Chinese Architecture

The uniqueness of traditional Chinese architecture is not only reflected in its structure, but also in its aesthetic appearance. Traditional Chinese architecture has beautiful flying eaves, beautiful decorations, and various color combinations and graphic compositions. The transformation of traditional Chinese architecture into modernity is not just a simple combination, but requires identifying the patterns within it. In fact, the combination of traditional Chinese aesthetics and modern aesthetics may not lie in the architecture itself, but in Chinese calligraphy, painting, or the handicrafts within it. This teaching content analyzes specific designer cases, including the design works of architectural designers from different eras such as Liang Sicheng and Wang Shu. From the perspective of aesthetic methods, planes, structures, and construction techniques, it aims to find exterior design methods that are both conducive to modern technology and in line with traditional modern two-way aesthetics. The focus of teaching lies in the guidance of student analysis, and the difficulty lies in the fact that after analyzing the key points, students need to design their own initial draft that combines tradition and modernity.

4. Conclusions

This article addresses the issues that have arisen in the teaching of Chinese and foreign architectural history courses in the past, such as knowledge points being too ordinary, insufficient topics in aesthetic education and traditional culture, lack of practical operation, and failure to deepen design abilities. In addition, design and traditional culture are very important in the teaching of Chinese and foreign architectural history courses. Reforming the curriculum with traditional culture as the core is not just about simply increasing class hours, but should be analyzed and explained in depth by adding topics,

Students can only gain a profound understanding of the vastness and profoundness of traditional Chinese culture through material understanding, in-depth learning through technology, and cultural appreciation of the excellent aspects. This curriculum reform can solve the problems that appeared in previous teaching, such as knowledge points being too ordinary, insufficient topics in aesthetic education and traditional culture, lack of practical operation, and failure to deepen design ability. By integrating teaching content, effectively utilizing practical training, and deeply learning traditional culture, while promoting culture, we can find ways to integrate tradition and modernity, and build a teaching and education system that synchronizes traditional culture and modern innovation, Enhance students' grasp and design abilities, and find ways to cope with the development of modern society.

Acknowledgements

Project source: Quality Engineering Project of Chengdu Textile College in 2021: Curriculum Reform of "Chinese and Foreign Architectural History" Based on Aesthetic Education and Cultural Heritage, project code: CDFZZLGC-00121160.

References

- [1] Tang Zhiqi, *Painting Small Things*, in Zhou Xian, *Basic Literature on Art Theory - Ancient China Volume[M]*, Beijing: Life · Reading · New Knowledge Sanlian Bookstore, 2014:263.
- [2] Su Shi, *Paintings in Jingyinyuan*, in Zhou Xian, *Basic Literature on Art Theory - Ancient China Volume[M]*, Beijing: Life · Reading · New Knowledge Sanlian Bookstore, 2014:162 .