

Exploration and Example of the Bauhaus Concept of “Integration of Technology and Art” in China’s Architectural Education System

Dongjiao Zhan^{1*}, Quanzhen Song²

¹Academy of Fine Arts, Tsinghua University, Beijing 100083, China

²China Light Industry Press, Beijing 100000, China

*Corresponding author: Dongjiao Zhang, 649545574@qq.com

Copyright: © 2024 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: The Bauhaus School of Design is the most influential art school of the 20th century and the first higher design school in the world. Its unique educational model also provides a reference example for modern design education and also promotes the development of modern design to a certain extent. Since the Bauhaus design concept was introduced to China in the early 20th century, it has been widely studied and applied in China. This article mainly expounds on the different expressions of the idea of “skill integration” in the Bauhaus education concept in China’s architectural education system from the aspects of basic education and architectural design achievements. By promoting the comprehensive and open development of architectural design disciplines, and cultivating “theory and practice” and “technology and art” together, it creates an architectural design education and training system with Chinese characteristics, provides theoretical guidance for Chinese architectural education, and promotes the innovative development of China’s education system and talent training in the new era.

Keywords: Bauhaus; Design; Education; Expression

Online publication: December 31, 2024

1. Introduction

Bauhaus is the first design school in the world to propose the concept of modern design education. Its theory has a very important influence and role in art, architecture, design, and other disciplines. There are many design education concepts from Bauhaus, among which the view of “Integration of Technology and Art,” that is, “the harmonious unity of technology and art,” is very creative and historical. The teaching method of basic courses is a scientific and theoretical teaching method created by Bauhaus. There are also various art and practical courses, which are concentrated on the concept of “Integration of Technology and Art.” This concept was first proposed by Gropius and later became the core idea of the Bauhaus design education system. At the same time, it laid a solid

foundation for the establishment of the studio system and dual-track teaching model at the Bauhaus, including new teaching methods such as parallel technology and design, laboratory teaching, and art design teaching, which combine knowledge and skills with social practice, cultivate a large number of skilled talents and promote industrial development.

2. The embodiment of the concept of “integration of technology and art” of Bauhaus in the basic education of architectural design in China

2.1. Establishing a fundamental curriculum model for design education as a global paradigm for design learning

The most obvious influence of Bauhaus on Chinese architectural design began with the establishment of the Department of Architecture at St. John’s University in Shanghai. The Department of Architecture at St. John’s University was officially established in Shanghai in 1942. At its inception, it adopted the modern design education system of Bauhaus, emphasizing the combination of technology and modern aesthetics in architectural design, promoting the development of modern architectural design in China, and becoming the cornerstone of architectural design education in China^[1]. The Department of Architecture at St. John’s University not only actively cultivates students’ architectural appearance and artistry, but also focuses on training and research in architectural structure and function, to achieve the artistry and implementation of the works. The basic courses must involve the composition rules of plane, color, and three-dimensional. The specific course settings are arranged by teachers, and students can choose different teachers to teach them according to their circumstances. These courses effectively provide students with the basic knowledge involved in architectural design, and later gradually evolved into the three major composition theories, playing a very important role in the basic course of architectural design and becoming a compulsory course in design education. At the same time, in the process of architectural design training, students also need to carry out art training such as painting before formally acquiring professional knowledge, and domestic and foreign art history and art appreciation are also indispensable. This course allows students to have a deeper understanding of art while cultivating technical theories, thereby achieving the requirements of high coordination and unity between technology and art in architectural design education.

2.2. Promote the studio teaching model and the comprehensive development of talents

Based on the educational concept of “Integration of Technology and Art,” Bauhaus implemented the studio teaching system, which is also a major innovation of the Bauhaus teaching model. The studio is set up according to the needs of teaching and actual work. The graphic design major has a visual communication studio, and the architectural design major has also established a corresponding architectural design studio. Under this teaching method, the basic knowledge learned by students in school can be effectively combined with social practice and actual needs, which helps students understand technology and skills, improve students’ practical operation ability, realize the organic connection between school and society, and cultivate more practical talents^[2]. Nowadays, many domestic universities are also continuing to use the Bauhaus education model and educational philosophy, and implementing the studio system. For example, the architectural design majors in many universities, including the Central Academy of Fine Arts, have multiple majors such as architectural design studios. After entering the studio, students will not only conduct systematic learning and skill improvement of professional and theoretical courses, but also strengthen students’ social practice ability, and regularly carry out school-enterprise joint project cooperation to enable students to learn and use what they have learned. The constraints of the traditional teaching model have been broken by the current studio teaching model. The school will focus on implementing relevant

teaching models that are closer to actual projects and will use outstanding designers or people with excellent practical abilities in social enterprises as studio mentors, focusing on cultivating a group of professional design teams with strong professional skills and high practical abilities, which will be more conducive to the development of the architectural design industry and social progress.

3. The expression of Bauhaus’s “Technical Integration” concept in Chinese architectural design practice

3.1. Explicit expression

The emergence of the “Greater Shanghai Metropolitan Plan” is a major manifestation of the practical application of the Bauhaus education system in the field of architectural design in China. It is the first overall urban administrative area plan carried out by Shanghai after getting rid of the history of the concession area for hundreds of years, and it is also the first complete urban master plan in modern China. The Greater Shanghai Urban Plan was established on August 24, 1946. It was led by Paulick as the technical director, and the drafters were professors including Huang Zuoshen, Zhong Yaohua, Jin Jingchang, and professionals outside the school. Most of these young elite designers were influenced by Bauhaus design education. They returned to their motherland with strong patriotic thoughts and enthusiasm for architectural design and actively invested in the architectural design and urban planning design that needed reconstruction. At the same time, foreign architectural designers represented by Paulick also brought valuable practical experience to China’s architectural design. The students trained in this project played an important role and backbone in the future urban construction of Shanghai ^[3].

The Greater Shanghai Metropolitan Plan also clearly embodies the concept of the integration of Bauhaus techniques. It not only predicts the future size and population development of Shanghai but also makes bold predictions on the development of Pudong District, ports, and urban status. This has high technical requirements and is one of the most technically difficult projects at the time. It not only has to meet various technical requirements but also has to have a certain artistry and beauty in the design process as a large-scale urban planning project. The Greater Shanghai Metropolitan Plan fully reflects the actual application of Bauhaus in China. Its design fully embodies the integration of art and technology and has very important value and far-reaching impact on Shanghai’s future urban development and planning.

3.2. Implicit expression

The modernist architectural thought represented by the Bauhaus design concept has had a wide influence on Chinese architecture during its dissemination in China. Its obvious functionalism and rational thought have set off waves in the Chinese architectural community. Its implicit expression in Chinese architectural design practice is reflected in the subtle influence of the Bauhaus design concept on modern Chinese designers, and these influences are reflected in the design works of architects. The buildings in this stage have both the Bauhaus architectural design concept and the implicit Chinese characteristics, which are the cornerstone of the rise of modern Chinese architecture. The most representative of them is the Shanghai Hongqiao Sanatorium, which is a relatively bright work among the first batch of modernist buildings designed and built independently by China. The architect of this building is Xi Fuquan, who graduated from the Department of Architecture of the German Higher Technical University ^[4]. Deeply influenced by Bauhaus education, he cleverly combined the Bauhaus architectural design concept with traditional Chinese elements when designing this building. The window design of the building cleverly uses the style of traditional Chinese furniture ^[5]. This work is the product of the combination of Chinese

elements and Western modern architectural design. It combines the artistic sense of oriental classical beauty with the exquisite technology of the Bauhaus style. It can be said to be the implicit expression and new integration of Bauhaus educational philosophy in China.

4. The innovative development path of Bauhaus's "Skill Integration" education concept under the Chinese architectural education system

4.1. Cultivating theory and practice, technology and art together

The modern Chinese architectural education system should, based on adhering to the Bauhaus education spirit, emphasize thinking, practicality, and rigor in the education process ^[6]. It is recommended that students use their brains more, apply more, and practice more ^[7]. They should learn construction skills based on paying attention to the aesthetics of the building, and summarize the experience and lessons in practice, to truly master the key points of architectural design and effectively apply them to practice in the future, forming a virtuous circle. Through the "explicit" and "implicit" learning of teaching concepts, combined with China's national conditions, the "implicit" and "explicit" expressions in design can be achieved. As for thinking, teachers and students need to pay attention to it in the teaching process. In the teaching process of architectural design, teachers should strengthen the cultivation of students' creativity and independent thinking ability, explore the correlation between design elements in the design process, and think about how to effectively integrate the artistry and technology of architectural works. Simultaneously, they should not rely solely on skills and should try to avoid the mentality of quick success and short-sighted mistakes. They should feel the design process with their hearts and pay attention to the correlation between design elements, to avoid the homogenization of design works and thus explore the soul of architectural design education.

4.2. Combining educational theory with practical projects to create an architectural design education and training system with Chinese characteristics

In the past few decades since China introduced the Bauhaus education concept, the Bauhaus training system has been fully absorbed in architectural design education. However, based on the background of modern China, it is far from enough to refer to the Bauhaus education system alone. On the contrary, the current domestic design colleges and design majors have unified teaching syllabi and teaching methods, and the course content and teaching time are too consistent, which is not easy to reflect the characteristics of each school and region ^[8]. Based on teaching professional knowledge, the characteristics of regional education should be integrated, and regional characteristics and policy changes should be studied to provide targeted education with regional characteristics. In terms of teacher allocation, many schools now give priority to students trained by the school or teachers who graduated from the school when recruiting teachers, which also hinders the diversified development of the school to a certain extent. Looking at the international situation, many first-class universities are recruiting talents ^[9]. For example, Harvard University has 90% of its teachers who are not graduates of the school, and its teacher recruitment and absorption methods are international and diversified. Modern China's architectural design education and training should be more abundant, which requires schools to absorb various types and disciplines of teachers and enrich the teaching staff to provide possibilities for the diversified development of the school. Only when the teaching staff is enriched and diverse can the teaching quality and content be improved and changed.

5. Conclusion

Looking back at the history of Chinese architectural development, it is not difficult to find that the development of modern architectural design is not only the development of technology but also the development of ideology and culture. Schools have played a very important role in cultivating generations of architects with unique ideas who can promote the development of the construction industry. The form and development of architectural design education should also be diverse rather than single and self-willed. For China, which was significantly behind in the past, Western culture offers valuable lessons worth learning. However, after the development of modern society, China has become a technological power ^[10]. The field of architectural design should also have its characteristics rather than blindly copying Western culture. Chinese educators should draw from the nation's unique cultural background to explore modern design thinking concepts inherent in both the "implicit" and "explicit" expressions of "skill integration." This approach can create a design method that balances "implicit" and "explicit" elements, highlighting the integration of Chinese culture, art, and technology in design. By doing so, Chinese design can make a more profound impact on the global design landscape.

Acknowledgments

We extend our heartfelt gratitude to our mentors, Liu Xiaobo and Wu Qiong, as well as to the other esteemed teachers who provided invaluable guidance during the writing of this article. We also wish to thank the organizers for offering us the opportunity to participate in this publication.

Disclosure statement

The authors declare no conflict of interest.

References

- [1] He Y, 2024, The Influence of Bauhaus on the Design of Chinese Modern Arts and Crafts. *Daguan* 2024(07): 12–14.
- [2] Yin Y, 2019, Research on the Influence of Bauhaus' Design Education Thought on Design Education in China. *Creative Design Source* 2019(02): 39–44.
- [3] Goetzmann L, 2020, Shock and Objectivity in Modern Times: Some Thoughts about Bauhaus Architecture. *British Journal of Psychotherapy*, 36(4): 534–547.
- [4] Thwaites JA, 1950, The Bauhaus Painters in Munich. *The Burlington Magazine*, 92(569): 237–236.
- [5] Schoenenberger H, 2024, The Bauhaus Approach to Innovation in Learning and Creativity. *Connected Learning: Origins, Opportunities, and Perspectives of Contemporary Educational Design: A Machine-Generated Literature Overview*. Cham: Springer Nature Switzerland, 2024: 183–212.
- [6] Zhou Y, Zhao S, 2021, Transnationality, Socialism, Modernity: Text Spread of the Bauhaus and Emergence of Modern Design in China. *Advances in Creativity, Innovation, Entrepreneurship and Communication of Design: Proceedings of the AHFE 2021 Virtual Conferences on Creativity, Innovation and Entrepreneurship, and Human Factors in Communication of Design*, July 25–29, Springer International Publishing, USA, 2021: 547–553.
- [7] Liu J, Nah K, 2020, The Reform Situation of Chinese Design Education in the 21st Century. *Archives of Design Research*, 33(3): 109–125.
- [8] White-Hancock L, 2023, Insights from Bauhaus Innovation for Education and Workplaces in a Post-Pandemic

World. *International Journal of Technology and Design Education*, 33(1): 261–279.

[9] Kaplan A, 2022, *Designing Bauhaus Education. Schools*, 19(2): 408–419.

[10] Almasi F, Pourmahabadian E, 2023, *Educational Indicators in Bauhaus School for Enhancing the Quality of Architectural Education. Journal of Iranian Architecture & Urbanism (JIAU)*, 14(2): 177–197.

Publisher's note

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.