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# Experience and Enlightenment: Practical Training of Applied Talents in Environmental Design Based on the "Sandwich" Model in the United Kingdom: Taking the Curriculum Implementation Outline of the Square Design Course at Sichuan Normal University as an example

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(Received 4 November 2023; revised 6 November 2023; accepted 8 November 2023; first published online 1 December 2023)

## Abstract

The British "Sandwich" model plays an important role in the development of higher education in Commonwealth countries and even in the European and American regions. With the advancement of the great rejuvenation process of the Chinese nation and the existence of a major unprecedented transformation, sustainable development in various important fields in our country is facing varying degrees of problems. The British "Sandwich" model can effectively solve the problem of the lack of specialized talents in application innovation design during the process of coordinated urban-rural development. This paper takes the talents required and urgently needed for the great rejuvenation of the Chinese nation as the research background, guided by the British "Sandwich" education model, and takes the cultivation of talents in applied innovative design in environmental design as a practical path, with the implementation outline of "Square Design" course at Sichuan Normal University as the specific research object. Through systematic and logical deduction and induction, this paper presents experiences that can be implemented, exchanged, and promoted in similar colleges, aiming to contribute to the strategy of revitalizing the country through science and education and the great rejuvenation of the Chinese nation.

**Keywords:** British "Sandwich" Model; Environmental Design Major; Cultivation of Applied Talents; Course Implementation Outline

## 1. Introduction

The rural revitalization strategy and the urbanization construction with county towns as important carriers are important judgments made by the Party Central Committee and the State Council in the dimensions of comprehensive development of urban-rural economy and society and integration of urban and rural areas. They are also important practical paths and specific means to achieve the great rejuvenation of the Chinese nation. In the more than 70 years since the founding of New China, we have experienced a difficult process from standing up to becoming prosperous. In the unprecedented major changes of the century, various regions across the country are in a key period of realizing the great rejuvenation of the Chinese nation and face many risks and challenges in various fields, such as core issues like chip technology that urgently need to be tackled. The strategy of rejuvenating the country through science and education is a strategy for building a strong nation. As educators, we should not only stay on the surface, but also enhance our sense of ownership, play the role of main builders, and do our own work well. In addition, expanding our horizons and learning from the British "Sandwich" education model to apply it to the construction of teaching quality engineering should be the direction for us to practice.

## 2. British "Sandwich" education model

The "Sandwich" model is a common mode of cooperation between vocational education institutions and enterprises in the UK. This model originated from Sunderland Technical College (now known as the University of Sunderland) and has gradually developed and formed unique characteristics over the past century. It was not until 1958 when Birmingham College of Advanced Technology became the first university to award a "Sandwich" educational technology diploma that the issue of degree accreditation for this model was resolved. The reason why it is called the "Sandwich" education is essentially due to the division of undergraduate degree studies into two stages: theoretical learning in school and practical training in enterprises, with the obvious characteristic of "theory + practice + theory". The duration of higher vocational education in the UK is divided into three years and four years, so the "Sandwich" model also varies in depth. It can be said that the "Sandwich" model has a long history and was established to meet the urgent demand for vocational skilled talents for the economic recovery and social development in the UK. It shares many similarities with modern apprenticeship and engineering education models.

The success of higher vocational education in the UK is not only due to the support from the royal family and the government but also relies on the collaboration of multiple parties such as industries, enterprises, and schools. This collaboration has achieved the maximum integration of industry and education development and, by law, handed over the monitoring authority of educational quality to the regulatory body, the Education Standards Agency. The "Common Evaluation Framework" developed by the Education Standards Agency has become the standard for the internal and external evaluation of teaching quality in higher vocational education and has promoted the formation of a new phase of higher vocational education based on the important principles of "teaching and governing according to law, integrating law and science, and scientific development". This experience has also benefited the vocational education sectors in various countries worldwide.

### 3. The current status of talent cultivation and development in the field of environmental design in our country

According to incomplete statistics, the environmental design profession was originally part of the art category. Currently, the number of students in this major exceeds 100,000, while the number of graduates is close to 30,000. However, there are doubts about whether the industry market needs such a large number of talents, whether these talents can be fully utilized, and whether the professional talent cultivation is sustainable. As for the interior design industry, after more than 30 years of development, the environmental design profession has certain competitive advantages. This advantage is both the result of strength competition and the abandonment of other strong disciplines such as architecture and landscape architecture. In addition, the environmental design profession faces multiple challenges such as low industry barriers, lack of standards, and low public demand. Among the major industries such as architecture and landscape architecture, graduates of the environmental design profession are generally at a disadvantage in the competition process, with relatively low employment rates and poor long-term prospects. Therefore, it is necessary for us to discuss what core competencies environmental design students should possess, which areas of development should be grasped, and in which specific aspects their training should be strengthened.

After several generations of scholars' construction and efforts, our country has achieved remarkable results in the cultivation of environmental design professionals, making important contributions to various fields of economic and social development in New China. So far, the talent cultivation mode closely related to environmental design has been basically formed, with different emphases at different levels of study such as diploma, undergraduate, and master's degree. Nearly a thousand colleges and universities at all levels across the country have opened environmental design majors or related courses, but due to various factors such as the level and location of schools, quality of students, and faculty qualifications, there are differences in talent cultivation mode, curriculum design, classroom teaching, practical training, curriculum assessment, and talent cultivation quality evaluation. Overall, in recent years, significant progress and development have been made in the talent cultivation mode, curriculum system, curriculum construction, and evaluation mechanism of the environmental design profession, making significant and concrete contributions to the construction of socialist modernization since the reform and opening up. Of course, while making progress and achieving success, as educators, we still need to have a clear understanding of ourselves and be aware that the future development prospects of the profession we are engaged in still face many challenges and aspects that need optimization and improvement.

### 4. Applied talents are the important cornerstone of economic and social development

The "Thirteenth Five-Year Plan for the Development of National Education" clearly points out that education in the world today is undergoing significant changes, with a closer integration between education and economic and social development. The modes, forms, contents, and learning methods of education are undergoing profound transformations, such as the lack of a collaborative training mechanism for the integration of production and education, and the need to strengthen the cultivation of students' innovation and entrepreneurship abilities. In addition, talents and human resources are the most precious

resources of the country, and education must assume the historical mission of realizing the great rejuvenation of the Chinese nation. According to investigations on domestic and foreign related industries and higher education, high-quality enterprises in developed countries have close ties with universities and industry associations, and even directly establish laboratories for universities, encouraging and supporting active participation of college students in practical exercises on the production line of enterprises. With the advancement of the "Made in China 2025" and "One Belt, One Road" initiatives, various industries and sectors are in urgent need of universities to tap their potential and conduct open-minded education, and it is necessary to accelerate the cultivation of application-oriented and technologically skilled talents.

From a national perspective, different provinces have their main pillar industries. However, in order to achieve the transformation from "Made in China" to "Created in China," a complete transformation from quantitative change to qualitative change must be carried out. This transformation must be based on a high-quality and solid foundation. Therefore, under the premise of national integration, every industry and field should cultivate outstanding talents. We can compare regional economies to chess pieces. The iterative upgrading of regional economic and social development and industrial transformation cannot be separated from the support of excellent talents in applied innovation. In order to cultivate qualified and excellent applied talents, the responsibility lies with schools, and specific measures need to be implemented in feasible and controllable quality engineering construction. Through scientifically standardized systems, as long as strict execution is followed, respecting science and minimizing the subjective will of relevant personnel, the construction and use of curriculum implementation guidelines can be implemented safely. Therefore, the curriculum implementation guidelines are the optimal, best, and most suitable starting point.

## **5. The development of a curriculum implementation outline is an important guarantee for improving the quality of teaching**

The curriculum implementation outline is an institutional guiding document that ensures the smooth implementation of curriculum teaching. It has been reported that the curriculum implementation outline and teaching system are more mature in the United States. American universities consider the curriculum implementation outline as a basic teaching standard and system, characterized by fundamentality and meticulousness. After years of construction, development, and optimization, the construction and use of the curriculum implementation outline have indeed effectively safeguarded the position of American higher education in terms of quality. Undoubtedly, the United States is a country with sound and strictly implemented legal systems, and its citizens have a strong awareness of legal systems. Most American universities are private and rely mainly on social donations, technology transfer, and tuition fees for their operating funds. It can be considered that each expenditure they use will be subject to multiple supervision and generate maximum value, which is also an important cornerstone for the United States to become a world power. Research has found that the curriculum implementation outline in American universities, as a necessary teaching document for teachers before starting classes, reflects a strong sense of contract between teachers and students and serves as a constraint on teaching and learning behaviors. The

implementation outline is also the carrier of standardized management of teaching and the basis of teaching evaluation. Therefore, the monitoring of teaching quality runs through the whole process of teaching and learning, fundamentally ensuring the overall quality of teaching.

Tailoring teaching to individual students is an irrefutable truth, where "materials" not only refers to the basic conditions, levels, and aptitude of the learners but also can refer to instructional materials used in activities. Due to different school conditions and characteristics, the design and writing of curriculum implementation outlines should also conform to the actual situations of each university. I believe that education should have regularity and must follow objective laws. Under the guidance of seeking truth from facts and being practical, appropriately enhancing or emphasizing certain aspects is also part of tailoring teaching to individual students. However, in order to achieve high-quality teaching, we must ensure that the curriculum implementation outline has the overall framework for teaching, guidelines for instruction, a contract between teachers and students, a bridge for communication, and a tool for evaluation. Only when the entire school community attaches great importance to this system can it be implemented concretely and fully play its role, thereby achieving the educational goal of teaching as no teaching and learning as creation.

## **6. Implementation Outline Construction Practice of the 'Squire Design' Course at Sichuan Normal University**

Strict and detailed teaching basic norms and management systems based on the course implementation syllabus are the key to ensuring the quality of teaching in American universities. The course implementation syllabus in American universities reflects the teaching concept of learning centers and teaching contracts. It is not only a teaching contract between teachers and students and a learning tool for students but also a bridge for communication between teachers and students and an evaluation tool for teaching. Each university has unified requirements for the format, composition, and content of the course implementation syllabus. Chinese universities need to learn from this system in American universities to accelerate the standardized construction of teaching during further teaching reforms.

Sichuan Normal University is a key university under the administration of Sichuan Province and one of the demonstration schools for the implementation of the national project "Basic Capacity Building for Universities in Central and Western China" and deepening innovation and entrepreneurship education reform nationwide. It is one of the universities in Sichuan Province with a long history of normal education. Through the efforts of generations of teachers and students, the university has developed into a comprehensive normal university with a characteristic focus on teacher education and the coordinated development of multiple disciplines, enjoying a high reputation nationwide. In 2021, the Environmental Design major of the university was recognized as a first-class undergraduate major in Sichuan Province and is also one of the key construction majors of the College of Fine Arts. According to the document "Opinions on the Implementation of Curriculum Implementation Syllabus (Trial)" issued by Sichuan Normal University, it states that "the course implementation syllabus is an important guide for course learning and one of the

basic documents provided by teachers to students before the start of the course. It is not only a teaching contract between teachers and students and a learning tool for students but also a bridge for communication between teachers and students and the basis for teaching evaluation. It is of great significance to strengthen curriculum teaching standards, improve the quality of curriculum teaching, and promote student autonomous learning. It also plays an important role in standardizing teachers' and students' teaching behavior, mobilizing students' learning initiative and consciousness, and ultimately achieving curriculum teaching objectives and tasks."

The course implementation syllabus of "Squire Design" at Sichuan Normal University is guided by the specific principles of socialist education and refers to national planning textbooks. It has undergone design, writing, application, practice, and reflection of the implementation syllabus. Some of the contents are as follows:

### **6.1 Implementation status**

"The course "Squire Design" is one of the core compulsory courses for the Environmental Design major. It serves as an important bridge and link between designing for specific places and comprehensive site design, and its importance is self-evident. Especially in the context of rural revitalization and integration of urban and rural development, the positioning of the course and the standards and requirements for curriculum quality construction should keep up with the times."

### **6.2 Implementation outline includes content**

Teaching Philosophy; Course Overview; Teacher Introduction; Prerequisite Courses; Course Objectives; Course Content; Course Implementation; Course Requirements; Course Assessment; Course Resources; Classroom Norms; Academic Integrity; Teaching Contract; Additional Instructions.

### **6.3 Summary of Usage**

The syllabus for the course "Squire Design" is designed according to the guidelines, policies, and suggestions of the Party and the country on socialist education in the new era. It is also based on the school's educational positioning and the actual teaching conditions of the college. In the past two years of curriculum teaching practice, combined with feedback from teachers and students, this syllabus has been continuously refined and optimized. The specific utilization is summarized as follows:

In terms of teaching inspection, two weeks before the start of each semester, the person in charge of writing the syllabus will send the latest optimized course implementation syllabus to the teachers, and submit it to the academic affairs system according to the requirements of the school's academic affairs office. The deputy dean of teaching, together with the director of the academic affairs office and the department head, personally inspects and signs the confirmation. There has been no case of being sent back for adjustment or modification. The dean personally teaches the course and has given attention, care, and suggestions for the writing of the syllabus.

In terms of frequency of use, a total of nearly 120 students from four classes of the landscape design direction of the Environmental Design major in 2018 and 2019 have used this syllabus. Two classes of the 2018 level are taught by associate professors, and two classes of the 2019 level are taught by the dean and the director of the teaching and research office (both are master's supervisors).

In terms of effectiveness of use, although the national planning textbooks for design majors were selected when writing the course implementation syllabus, and some relevant cases with excellent traditional Chinese culture and cutting-edge features were included, due to the author's situation of pursuing a doctoral degree while working, the syllabus has not been personally used for classroom teaching in the past two years. Therefore, it is difficult to timely and accurately grasp its specific usage in actual course teaching and the areas that need optimization. It can only be understood through frequent communication with the teaching staff. The final projects of some students in the two grades participated in discipline competitions and achieved good results at the national and provincial levels. The writing of the syllabus focuses on the analysis of landscape design cases from the perspectives of the development history of Eastern and Western landscapes and the different functions and positioning of urban and rural areas. Its aim is to seek truth from facts, be practical and realistic, cultivate environmental design professionals with core competitiveness, and support the construction of urbanization as an important carrier of county-level economy. From the perspective of the process and effectiveness of the syllabus usage, as well as the adaptability of students to employment positions, initial results have been seen.

In terms of student feedback, the majority of students believe that the course implementation syllabus bridges the gap between over-reliance on a single planning textbook, the difficulties in practical application, and the individualized teaching based on students' abilities. Although excellent design cases in planning textbooks can broaden students' horizons, for students majoring in environmental design at a normal university's School of Fine Arts, it is still necessary to accurately determine goals and engage in practice. Students believe that this syllabus integrates the classical theories and excellent cases from planning textbooks with the teachers' learning experiences, design practices, design research, and educational research. In particular, the teachers' design research papers and complete process practical cases are systematically processed, making it easier for students to accept, understand, comprehend, and apply this course.

In summary, the course implementation syllabus for the course "Squire Design" is an important path to cultivate applied and innovative talents in the field of environmental design and achieve the integration of industry and education. The integration of industry and education can guide students to better perceive the working environment and adapt to job positions in advance, facilitating sustainable momentum and effectively responding to employers' concerns about the use of university graduates. It can be said that the attitude, concepts, abilities, and levels of teachers towards the writing of the course implementation syllabus directly influence the academic performance and future development of many students. If teachers only focus on classroom teaching and do not actively participate in industry development and project practices, the improvement of graduates' core competitiveness in employment will remain only in words.

Since 2017, the connotation construction and peripheral expansion of the Environmental



Design major have achieved satisfactory results. This includes the approval and implementation of national social science projects, Ministry of Education humanities and social science projects, Ministry of Education industry-university cooperation and collaboration in education projects, Ministry of Education supply-demand matching employment and education projects, publication of high-level journal papers, and repeated achievements of national gold, silver, and bronze awards in discipline competitions. Horizontal topics have also been introduced into the classroom. The achievement of these results is closely related to the recognition from academia and the industry. From the perspective of curriculum construction, the construction of the course implementation syllabus has played an indispensable role. It can be seen that the construction of the course implementation syllabus can effectively regulate the main aspects of teaching activities and maximize the quality of teaching.

## **7. Conclusion**

In summary, the "Sandwich" model has played a vital role as a ballast and stabilizer in the critical stage of economic recovery and comprehensive development of the economy and society in the United Kingdom and even in Commonwealth countries. Since the pilot class of the "Sandwich" model was launched at Shanghai Institute of Technology (now Shanghai University) in 1955, China has been exploring educational reform experiences. In order to contribute to the great rejuvenation of the Chinese nation, relevant government departments have issued a series of policy, guidance, and advisory documents, policies, and regulations. The Ministry of Education has successively implemented projects such as the Ministry of Education's cooperation between industry and academia to cultivate talents, and the Ministry of Education's supply-demand employment-oriented education project, aiming to cultivate valuable talents and pillars for the great rejuvenation of the Chinese nation. It can be seen that the Ministry of Education's implementation of cooperation between industry and academia to cultivate talents, and supply-demand employment-oriented education project, has made up for the shortcomings of humanities and social science research, and has become a specific practice of the supply-side reform supported by scientific research support programs. These projects not only possess the characteristics of socialist education but also integrate the integration of industry and education and the paradigm of scientific development from abroad. Although Sichuan Normal University is a local normal university, based on its pioneering spirit of reform, the university has continuously explored educational reform practices and steadily promoted the construction of curriculum implementation guidelines. After five years of practice and accumulation, it has achieved remarkable results in discipline competitions and has a certain demonstrative leading role among similar institutions, nurturing a large number of talent with application and innovation abilities for local economic development. I firmly believe that as long as we adhere to the principles of openness and inclusiveness, self-improvement and benefiting others, truth-seeking and pragmatic spirit, and the strategy of identifying and overcoming weaknesses, we will be able to achieve distinctive outcomes for ourselves, our students, and the future.

(edited by Qiang SUN)



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**Cite This Article** Jing WANG, Xiaodong WANG. Experience and Enlightenment: Practical Training of Applied Talents in Environmental Design Based on the “Sandwich” Model in the United Kingdom: Taking the Curriculum Implementation Outline of the Square Design Course at Sichuan Normal University as an example[J]. *Costume and Culture Studies*, 2023, 1(1):10-18, DOI: <https://doi.org/10.6914/ccs.010102>

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