

The Strategic Conception of Implementing Co-op Education in Architecture Major —Take Wuhan Polytechnic University as an Example

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Abstract. Architecture is a discipline from practice to practice. Compared with China's traditional education model, which emphasizes theory rather than practice, the cooperative education, which combines study and work, is more suitable for the teaching characteristics of architecture. Taking Wuhan Polytechnic University as an example, the paper briefly outlines the current situation of architecture specialty, analyses the feasibility of implementing Co-op education, and puts forward the strategic conception of implementing Co-op education.

1. Introduction

Cooperative education (Hereinafter referred to as Co-op) is one of the most famous teaching modes in the world. It is welcomed by students and employers because it combines study with work to cultivate talents with strong practical ability. Graduates majoring in architecture need to have strong practical ability, while the traditional teaching mode of emphasizing theory over practice in Chinese universities has been unable to meet the requirements. Implementing Co-op education may be a way. This paper briefly introduces Co-op education and the current situation of architecture specialty in Wuhan Polytechnic University, analyses the feasibility of implementing Co-op education, and puts forward the strategic conception of implementing Co-op education in architecture specialty.

2. Overview of Co-op education

Cooperative education originated from the paid internship project proposed by the University of Cincinnati in 1906. In 1957, the University of Waterloo in Canada introduced it and made it an important mode of training high-quality talents in the world. ^[1] The core of Co-op education is to combine study in school with off-campus work to cultivate talents needed by employers.

At the University of Waterloo, co-op programs arrange study terms for on-campus learning and work terms for off-campus practice, usually alternate each other. Co-op students will complete between 4 and 6 work terms (4 months in length) throughout the duration of their co-op degree, which usually takes about five academic years to complete. This means co-op students graduate with up to two years of relevant, paid work experience learning how to navigate the hiring process, applying one's skills to real-life problems and learning about himself along the way. ^[2] After years of development, Co-op education has become more and more popular with students and employers.

3. The present situation of architectural education in China

The undergraduate students majoring in architecture in Chinese universities generally have a five-year academic system and two semesters a year, totaling 10 semesters. Taking Wuhan Polytechnic University as an example, as shown in Table 1, there are 45 credits in centralized practice teaching, but only 14 (12 + 2) credits are really arranged for students to participate in practice outside school (similar to the work terms of Co-op). Generally, they are set in the 9th semester, while the others are all teaching practices led by teachers in school. Despite the emphasis on practice, and the total credits of practice link are quite large, in fact, the chance and time for students to take in off-campus practice account for a small proportion of the total time, and the educational model still tends to emphasize

the traditional teaching mode of theory over practice.

Table 1. Arrangement of Centralized Practical Teaching Links ^[3]

Serial number	Course title	Course nature	weeks	credits	Perform term	Note
1	Practice of Building Environment Recognition I	Required	1	1	2	
2	Practice of Building Model Making	Required	1	1	3	
3	Architectural design I curriculum design	Required	1	1	3	
4	Course design of architectural structure	Required	1	1	4	
5	Art Sketching Practice	Required	2	2	4	Summer
6	Course design of Architectural Structure and Selection	Required	2	2	5	
7	Surveying practice	Required	1	1	5	
8	Course Design of Architectural Physics	Required	1	1	5	
9	Architectural Cognition Practice II	Required	1	1	6	
10	Surveying and Mapping Practice of Historical Architecture	Required	2	2	6	Summer
11	Architectural Research	Required	1	1	7	
12	Training of Rapid Architectural Design	Required	1	1	8	
13	Training of Digital Architectural Design	Required	2	2	9	
14	Engineering Practice/Architectural Design Institute Practice	Required	12	12	9	
15	Graduation practice	Required	2	2	10	
16	Graduation project	Required	14	14	10	
	Total		Five-year undergraduate course		45	

4. Feasibility of Co-op education in architecture major

In fact, on the basis of the existing teaching arrangements, it is completely feasible to realize the full implementation of Co-op through reasonable adjustment.

4.1 Timing is possible

From Table 1, we can see that 45 practice credits have been decentralized and implemented many times. As can be seen from Table 2, the proportion of practical credit in total credit, about 1/4-1/5, is not too small. Specifically, the total number of centralized practice teaching credits (45) accounts for about 22% of the total number of charging credits (205), and the total number of centralized practice teaching credits (45+15=60) accounts for about 26% of the total number of 230. If we integrate multiple decentralized teaching practices with holidays, we can arrange several centralized off-campus practices, that is, it is feasible to optimize the work terms in Co-op in time.

Table 2. Credit Schedule for Architecture Major ^[3]

	Credits charged		Free credits
	Required course	General Education Course	35
Basic Subject Course		43	
Specialized course		34	
Centralized Practice Teaching		45	15 ^②
Elective course ^④	General Education Course	4	
	Basic Subject Course and specialized course	44	
Subtotal		205	25
Total		230	

Note: Graduation Credit Requirements: 230 credits.

②Comprehensive quality development credits.

4.2 No lack of internships.

Many companies and departments are willing to provide internship positions for students majoring

in architecture. Some companies even regard student internship as a necessary process and an important channel to retain future employees. And students can find internship positions related to the major even if they only depend on themselves. That is to say, it is guaranteed for architecture specialty to find the jobs off-campus required by Co-op.

4.3 The direction of architectural reform is to pay more and more attention to practice.

In view of the teaching reform led by the National Architecture Undergraduate Teaching Professional Steering Committee in the past 20 years, the direction of the reform of architecture is to require fewer and fewer total credits. In other words, the total class hours are getting less and less while the five-year school system remains unchanged. The main direction of the reform is to reduce the proportion of theoretical teaching and hope students have more time to improve their innovative and practical ability.

In a word, the architecture specialty is able to implement Co-op, but more measures are still needed to realize the mode which is welcomed by students, enterprises and society.

5. Strategic conception of implementing Co-op in architecture specialty

The implementation of Co-op education in architecture major can be started from two aspects. One is to create conditions at the strategic level, and the other is to promote the work of specialty, school and government gradually in the specific implementation.

5.1 Strategic focus

5.1.1 Giving universities more right to run schools independently

The right to run a university independently is very important for exploring the educational mode suitable for the orientation of the University itself, and is also a necessary condition for the continuous innovation and development of the university. [4] Although colleges and universities have certain autonomy, it is undeniable that the scope of autonomy is very limited. For example, the architecture specialty is not only the curriculum, but also the content of each course are clearly defined in the documents of the National Architecture Undergraduate Teaching Steering Committee. For the school educational administration departments which always adhere to the simple implementation policy of "no innovation, but no mistakes", it is often used as a standard to audit the talent training program of architecture specialty. In this way, the running of architecture specialty is limited in many similar "guidance".

Every university and major is seeking development. They should be given greater freedom to make new attempts. If the attempt succeeds, they will get better. If it fails, they will bear the corresponding consequences, such as the most common difficulty in recruiting students because of bad reputation. In a word, the development law of market economy can also be appropriately applied to the running of colleges and universities, so as to stimulate the initiative of college groups in the development to the greatest extent.

5.1.2 School leaders should have a broader vision and greater courage

In the power structure of Chinese universities, the power of the administrative party committee is dominant. [5] For the development and operation of schools, the rights and influence of leaders, such as secretaries and principals, exceed almost that of any organization. Therefore, the leaders need to have a broader vision to understand the current education and the educational characteristics of the various disciplines of the universities. On this basis, they need more courage, so that they may not follow the old-fashioned and creatively design the operation model suitable for the various disciplines of the university itself.

5.2 Specific implementation recommendations

5.2.1 Formulate a personnel training program that is close to Co-op education in terms of time arrangement.

5.2.2 Universities should establish and improve the guarantee system for the implementation of Co-op education.

5.2.3 Establish support policies for Co-op education at the social and national levels.

References

- [1] DING Li-dong, etc, Co-operative education in North America and its enlightenments to talent cultivation of Higher Vocational Colleges in China. *Vocational and Technical Education*, vol. 29, pp. 91-95. 2012.
- [2] <https://uwaterloo.ca/co-operative-education/about-co-op>
- [3] Guiding Teaching Plan for Architecture Undergraduate Major of Wuhan Polytechnic University in 2018
- [4] Wang Xin, School-running autonomy and academic freedom are prerequisites for the development of innovative universities, *Journal of Suzhou University (Educational Science Edition)*, vol. 2, pp. 111-115.2015.
- [5] <https://www.douban.com/note/535776244/?type=like>