

Thinking on the Development Countermeasures to the Predicament of Architecture Major in Common Colleges and Universities

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Abstract. Architectural discipline construction in common colleges and universities is restricted by the multiple leadership of many departments, and is confined to the thinking and inertia of imitating famous colleges. It has been in a predicament. The reasons are analyzed, and the countermeasures with the cultivation of students' engineering practice ability as the core are put forward. To implement the countermeasures, it is necessary for China to increase the autonomy of colleges and universities, for common colleges and universities to establish a wider professional development system of Practice-study cooperation, and increase the investment to enhance the practical ability of architectural teachers.

1. Introduction

Architectural majors in Chinese common colleges and universities have neither the school advantages of “985 Project” or “211 Project” universities nor the professional foundation of “the old eight” or “the new eight” architectural colleges. However, they usually follow the cultivation plan of famous universities and always regard the authority as their first priority. But their resource conditions are quite different, they are still far behind of those in famous universities.

Here, the predicament of Architecture Specialty in common colleges and universities are analyzed, and the possible development way and countermeasures are tried to find out.

2. The Predicament of Architecture Major in Common Colleges and Universities

2.1 The General Trend of Reform in Higher Education to Promote Full Credit System

In July 2010, the Ministry of Education of the People's Republic of China issued the Outline of the National Medium and Long-term Educational Reform and Development Program (2010-2020), pointing out that higher education should take innovative talents training as the direction, and clearly put forward the task of higher education to promote and improve the credit system and implement flexible educational system. Since then, the credit system has once again become a remarkable direction and content in the reform of colleges and universities in China.

The credit system of most colleges and universities in China is with Chinese characteristics - the academic year credit system, which meets the needs of the specific historical period with its strong planning and the strict and complete classification of specialties and has trained a large number of talents for the country. [1] The full credit system is more conducive to the cultivation of innovative talents and has become the preferred choice for higher education.

However, throughout the architectural teaching reform in higher education since 2010, the promotion of full credit system in common colleges and universities is particularly difficult. There are many reasons for this, typically such as not being able to offer more high-quality courses and constantly squeezing out the minimum graduation credits for majors. Therefore, how to develop under the trend of the promotion of full credit system is a problem that has to be faced for architecture majors in common colleges and universities.

2.2 The Guidance Norm from the National College Architecture Professional Guiding Committee

In the Guiding Professional Code for Undergraduate Architecture of Institutions of Higher Learning (2013 edition), the National College Architecture Professional Guiding Committee

stipulated that the teaching content of architecture should be composed of four parts: instrumental knowledge, humanities and Social Sciences knowledge, natural science knowledge (the above three parts are combined basic knowledge) and professional knowledge. The total class hour is 2568, and the basic courses and professional courses are 768 and 1800 respectively. It can be clearly seen that the proportion of basic courses is high.

In this specification the principles for compiling was specified with broadening the professional caliber, standardizing the basic content and controlling the minimum standards, [2] which means that if we want to set up all the courses, we must increase the class hours. Besides, the specification states that schools can add specific content to reflect the characteristics of their specialties when making teaching plans. This means that in addition to meeting the minimum professional requirement of a total of 2,568 hours, equivalent to 160.5 credits (1 credits = 16 hours), a lot of credits will have to be added. This requirement is in contradiction with the complete credit system which requires to reduce the minimum credits for graduation as much as possible. Moreover, this contradiction is particularly difficult to reconcile in common universities.

2.3 Constraints on the Concept and Level of Teaching Management

The backward concept and the low level of teaching management have formed another shackle for Architecture Specialty in common colleges and universities.

For example, the traditional orientation of administrative departments in colleges and universities is not to serve but to lead teaching, which brings a lot of inconvenience to the teaching. The teaching plans are required to implement strictly and cannot be adjusted without audit. We all know that teaching should be different from person to person. If teachers has no rights to adjust the teaching content and form properly according to the specific teaching objects in teaching progress, teaching would become rigid and lose vitality.

2.4 Restrictions on the Conditions of Architecture in Common Universities

First, the faculty of architecture in common colleges and universities is relatively weak. Teachers are not only insufficient in quantity, but also lack of practical experience, [3] which is very disadvantageous to the cultivation of students' practical ability.

Second, the quality of students in common colleges and universities is also poor. This is determined by the enrollment system of higher education in China. Different levels of students mean the difference of students' learning ability on learning initiative and comprehension.

Third, the common colleges and universities usually invest less in the construction of architecture.

Fourth, the social resources available to the common colleges and universities and majors are far less abundant than those of famous universities.

3. Analysis of the Reasons for the Predicament

3.1 Universities have too Little Autonomy in Running Schools

Whether it is the general trend of promoting full credit system, or the undergraduate guidance of Architectural Discipline Steering Committee to architectural specialty, ordinary colleges and universities have to comply with it, although it is difficult to meet the requirements of all parties. The reason is that the autonomy of running a university is too little.

Famous universities are more authoritative with the leading position, while common colleges and universities are generally represented as followers and the constraints object of the rules. As a result, the values of common colleges and universities are relatively single, which is always the basic survival orientation of seeking standards before seeking development.

If colleges and universities have greater autonomy, they can determine how to build and develop their majors according to their own conditions, instead of passively putting themselves into a variety of unified rules and regulations designated by the authoritative departments. The higher education will probably present a variety of features and achieve the goal of training innovative talents.

3.2 The Concept of Running Universities is Lagging behind and the Management Level is not High

In ordinary colleges and universities, the concept of running a university lags behind, and the level of management is not high. This is mainly manifested in the following aspects.

First, architectural talents training programs of common colleges and universities still mainly imitate those of famous architectural colleges. This kind of simple follow-up is very harmful to the cultivation of innovative talents. Imagine, in the circumstance of overall strength far behind, just follow, how can we run through those famous colleges?

Second, rigid management cannot meet the flexibility needs of teaching and deviates from the original intention of education. The thinking and practice of leading teaching in the management department has brought great inconvenience to the teaching.

There are lots of other situations which seem to be for the sake of students, but actually are inconvenient. All of these show that the concept of management with the thinking that teachers and students should obey all the arrangements is still crude and simple. Education is not regarded as a service industry, and the best service for students is not given priority.

3.3 The Inputs in Architecture are Less

Professional development is inseparable from the support and input of schools. As is known to all, the investment in Architecture Specialty in ordinary colleges and universities is not optimistic.

For example, in the promotion of teachers, teachers are insufficient in quantity, and the task is hard. The number of students in a teacher's class far exceeds the standard recommended by the Architectural Education Board. Especially in curriculum design, many students cannot get effective guidance timely due to the lack of tutoring. [4] The lack of teachers is also not conducive to the improvement of teachers' professional level, because teachers are bound by heavy teaching tasks and have no time and energy to participate in engineering practice. Thus Teachers are bound to fail to receive the latest developments and cutting-edge information in the current architectural in time, which will inevitably affect the cultivation of students' engineering practice ability in turn. In addition, in terms of teachers' further study and training, universities generally consider the improvement of teachers' academic ability, such as higher degree, without attaching importance to the improvement of teachers' engineering professional ability, and do not provide convenient for teachers to improve engineering ability, such as giving a certain amount of time.

4. Countermeasures and Suggestions

In view of the above analysis, this has always been recognized that architectural specialty in common colleges and universities should take students' engineering practice ability training as the core to formulate specific development strategies. And to do this, the following aspects are needed to cooperate with.

4.1 To Increase the Autonomy of Colleges and Universities

Different levels of colleges and universities play different roles in higher education. Instead of being subject to a relatively fixed model to all levels, they should have more autonomy in running a university, and can formulate a matching talent training program and teaching management mode according to their own positioning. For example, is it academic or applied? Is it an academic year credit system or a full credit system? How to determine the proportion of basic courses and professional courses, the specific curriculum, the time allocation between study and practice? Colleges and universities can adopt ways that are conducive to the goal of personnel training.

In recent years, common colleges and universities have been trying to explore the way of Architectural Specialty to meet the needs of the times. Gao Changzheng explored the practical teaching system of architectural vocational education according to the professional needs of registered architects. Yin Ying explored the reform practice of "Project Task Driven" teaching mode for Architecture Majors in local universities. Guan Binjun discussed the practice teaching mode of high grade architecture based on school-enterprise cooperation. ...However, most of these reforms

and explorations are still carried out within a limited range of adjustments, and have not completely shaken off the guiding framework of various departments.

If the autonomy of universities is increased, more distinctive architectural education will be seen.

4.2 To Establish a Wider Professional Development System of “Practice-Study Cooperation”

Unlike the attempt of “practice-learning cooperation” in senior practical courses explored by some colleges and universities, the professional development system of “Practice-Study Cooperation” in architecture refers to the infiltration of “ practice-study cooperation” in the whole process of learning with “ practice-study “ as an alternative teaching link.

The traditional architecture “4 + 1” talent training program is generally to practice outside school for half a year after finished the four years study in schools. The advantage of this model is that students have learned the main theories and design methods when they go out to practice. The disadvantage is that the learning effect is not ideal due to students are separated from practice and lack a strong sense of learning in schools for years.

The core idea of a broader “Practice-Study cooperation” is to increase the proportion of production practice in academic accomplishment. Through the alternate implementation of study in-school and practice out-of-school, the practice and theoretical learning can promote each other, and it also will give students opportunities to find their interests and directions in jobs. This can be referred to the “CO-OP” project of the University of Waterloo, Canada. Students participate in production practice throughout their studies. The following is the three models of the CO- OP project (Table 1).

Table 1. Three Typical Plans on Study/Work [5]

Time Mode	First academic year			Second academic year			Third academic year		
	Autumn	Winter	Spring	Autumn	Winter	Spring	Autumn	Winter	Spring
1	study	study	work	study	work	study	work	study	work
2	study	work	study	work	study	work	study	work	study
3	study	study	Vacation	study	work	study	work	study	work
Time Mode	Forth academic year			Fifth academic year					
	Autumn	Winter	Spring	Autumn	Winter	Spring			
1	study	work	study	work	study				
2	work	study	work	study	study				
3	study	work	study	work	study				

Each Academic year is divided into three semesters with four months each. The study and the work time are comparatively average, both have the credit request, and are equally important. Work must be related to the major, such as cleaning dishes cannot be calculated credits on Architecture, which is distinguish with part-time work. [5,6]

4.3 To Increase the Support on Enhancing the Engineering Practice Ability of Architecture Teachers

Teachers are the most basic resources of teaching. Compared with increasing the investment in architecture, it is relatively easy for colleges and universities to improve the teaching ability to the greatest extent by changing the management mode.

For example, the following can be done to enhance the engineering practice experience of teachers. Firstly, from the aspect of performance assessment, teachers of architecture can be guided to take part in engineering practice, while weakening the scientific research assessment standards. Secondly, from the time arrangement, teachers of architecture may have time to participate in engineering practice by introducing teachers which can take turns to participate in practice, or by allowing teachers to participate in engineering projects during the time students go out to practice. When teachers keep pace with the times and master more practical engineering experience, teaching

can be better integrated with the market.

In a word, common colleges and universities should clearly recognize the differences among different majors, and adopt flexible and targeted training methods in talent cultivation on teaching management, curriculum arrangement, teacher's teaching ability promotion.

5. Conclusions

Architecture major in common colleges and universities occupies a large proportion in all colleges and universities. How to seek development is a topic we have been thinking about for years. Architecture is a discipline that is learned from practice. As an application-oriented university, the direction of reform in architectural specialty should be to increase the proportion of practice in the study. As for how to increase the proportion of practice, the establishment of a wider “practice-study cooperation” professional development system will fundamentally benefit students' engineering practice ability.

The implementation of this idea still needs greater autonomy for universities to not subject to unified norms designated by various departments. It also needs colleges and universities to update the concept and improve the level of management, and to build a new teaching management pattern based on providing the best service for students. And it is also necessary to increase professional investment, especially to establish the correct training patterns for the development of professional teachers, and break the “one-size-fits-all” assessment method based on scientific research achievements.

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