

# Characteristics and Enlightenment of Australian Civil Vocational Education Curriculum System

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## Abstract

With the development of economic globalization and the implementation of “One Belt, One Road”, Sino-foreign cooperative education has developed rapidly. However, the relevant work of Sino-foreign cooperative education cannot keep up with the development of its scale, which leads to the low quality of running schools and becomes a bottleneck for the development of Sino-foreign cooperative education. The design of courses is the difficulty of Sino-foreign cooperation in running schools, and it is also the core of the quality of running schools. Taking the opportunity to participate in the special training of vocational education mode in TAFE NSW College in Australia, the authors studied the characteristics of the vocational qualification certificate and courses of TAFE NSW College, and proposed some suggestions for the course design of Sino-foreign cooperative education.

## Keywords

Curriculum System, Vocational Education, Cooperative Education, TAFE

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## 1. Introduction

Economic globalization and the development of China’s “One Belt and One Road” (Wu & Zhong, 2021) have accelerated the process of Sino-foreign cooperation in running schools. In 2020, the number of Sino-foreign cooperative education institutions and projects in China has been 171 and 2,010, respectively, an increase of about three times compared with 2010 (Peng, 2021).

The rapid development of Sino-foreign cooperation in running schools will

also bring about the problem of lag in the corresponding supporting construction, which will affect the quality of running schools (Yang, 2017). The setting of the curriculum system is the core link that affects the quality of running schools, and it is also the difficulty of Sino-foreign cooperation in running schools (Liu, 2017). In order to learn advanced foreign educational concepts and successful experiences, in 2019, the State Administration of Foreign Experts Affairs organized relevant colleges and universities to attend the TAFE NSW (Technical and Further Education, New South Wales) College in Australia to participate in special training on the TAFE vocational education model for the major category of civil engineering. The authors of this article were lucky to participate in this training. Based on the training, this paper studies and investigates the characteristics of the vocational qualification certificate and curriculum of TAFE NSW College, and puts forward some reference suggestions for the curriculum setting of Sino-foreign cooperative education.

## **2. The Main Problems of Course Setting for Sino-Foreign Cooperative Schools**

Due to the different cultural background, education theory, education system, education method (Wang, 2011) and evaluation standards (Wang, 2011; Chen, 2013), the setting of the curriculum system becomes the core (Wang, 2011), key (Fan, 2016) and difficulties (Chen, 2013) of Sino-foreign cooperative schools. It is also the guarantee of achieving the goal of talent training (Wu & Li, 2019). Therefore, studying the curriculum of Sino-foreign cooperative schools is of great significance to ensure the smooth progress of Sino-foreign cooperative schools and the quality of talent training. Many scholars have done a lot of research in this regard. According to the literatures investigated, there are mainly the following problems in the course setting for Sino-foreign cooperative schools at this stage:

### **1) Focus on theory instead of practice**

When we introduce foreign professional courses, we only introduce theoretical courses. We lack the teaching of practical courses (Fan, 2016; Yang, 2014), and the training conditions for hardware may not keep up (Fan, 2016). In addition, the teaching content of the course also lacks specific corporate cases (Huang & Chen, 2021). In the setting of English courses, it is still based on universal basic English (Kuang et al., 2020), and the language skills courses that improve language applications and communication skills are insufficient, resulting in difficulties in students' learning (Wu & Li, 2019; Yang, 2014; Ma, 2014; Chen, 2014).

### **2) Following Chinese tradition to set courses, low proportion of foreign courses**

Due to the poor English ability of students, there are quite a lot of difficulties in learning English textbooks. And fewer teachers can teach professional courses in English, which results in some schools becoming more cautious when intro-

ducing original English textbooks. The proportion of foreign courses in the curriculum system is low. In the course settings, it is mainly based on Chinese traditions (Chen, 2014; Gao, 2018; Zeng, 2017).

### 3) Introducing simply, no localization transformation

Simply introduce foreign curriculum standards, regulations, textbooks and other resources, and do not combine local factors, therefore, the curriculum cannot reflect the local economic development status and industrial needs (Huang & Chen, 2021), lose the Chinese characteristics and tradition of culture, increase the depending on foreign courses and cultures (Wang, 2013), cannot create regions, schools and professional characteristics (Lou, 2018).

### 4) Single course settings, lack of diversity

The curriculum setting does not take into account the diversity of students' graduation destinations, such as going abroad, college promotion and employment (Yin et al., 2011; Li, 2012), nor does it take into account the students' own interests and needs (Yang, 2013) and the differences in the basic level at the time of admission (Zhang & Zhang, 2013). Cultivation is not carried out in levels, grading (Ma, 2014), classification (Yang, 2013), and differentiation (Zhang & Zhang, 2013). The curriculum setting is of homology and lacks diversity, which increases the difficulty of teachers' teaching and students' learning (Wu & Li, 2019).

### 5) Simple superposition, lack of transition

Professional courses simply exclude some Chinese courses, and then introduce corresponding foreign courses to make up (Yang, 2013), resulting in an incomplete and missing course knowledge system (Zhang & Zhang, 2013). The lack of cross-cultural communication courses in English courses is not conducive to the improvement of students' English ability (Chang, 2013). The lack of transition and connection between basic English and English original professional textbooks affects students' learning effect (Wu & Li, 2019).

## 3. Australian Vocational Qualifications Framework System

In Australia's vocational qualification framework (AQF) system, there are 10 qualification levels (AQF Level). For learners who have reached a certain qualification level, the corresponding qualification documents will be issued by the corresponding institutions (see **Table 1** for details).

Statements of Attainment may be issued to trainees who attend short-term training but have not completed a course at a qualification level. When earning a certificate, the learner does not have to repeat what the proof of study has already been learned.

## 4. Australian Technical and Continuing Education Curriculum System

The curriculum system of Australia's technical and continuing education can be

**Table 1.** Australian Qualifications Framework (AQF) (TAFENSW, 2022b).

High school	TAFE NSW	University	AQF Level
		Doctoral Degree	Level 10
		Masters Degree	Level 9
		Graduate Diploma	
		Graduate Certificate	Level 8
		Bachelor Honours Degree	
		Bachelor Degree	Level 7
		Associate Degree	
		Advanced Diploma	Level 6
		Diploma	Level 5
		Certificate IV	Level 4
		Certificate III	Level 3
		Certificate II	Level 2
		Certificate I	Level 1
		Senior Secondary Certificates of Education (HSC [Higher School Certificate] in NSW)	

divided into three categories: certificate courses, diploma courses and degree courses according to the type of certificate. To earn a certificate, diploma or degree, students must complete specified courses.

#### 4.1. Certificate Courses

All industries in Australia have their own vocational qualification certificates (levels one to four), and each level of certificate has its own corresponding courses. The courses corresponding to the certificate in the field of civil construction mainly include Building Design and Drafting, Building Trades, Carpentry, Joinery and Furniture, Civil Construction and Surveying and Real Estate and Property Services five categories, each course corresponds to the corresponding certificate level. Among them, the Building Design and Drafting skills certificate courses are shown in **Table 2**.

#### 4.2. Diploma Courses

Australian diplomas are divided into diplomas and advanced diplomas, and the course types of diplomas and certificates in the field of civil construction are the same. Among them, the architectural design and drafting skills diploma courses are shown in **Table 3**.

#### 4.3. Degree Courses

Degrees in Australia include bachelor's, master's and doctorate degrees, each with its own corresponding program. TAFE College can only issue a bachelor's degree. There are two bachelor's degree courses in Interior Design and Property

**Table 2.** Australian Building Design and Drafting skills certificate levels and their corresponding courses (TAFENSW, 2022a).

serial number	course code	Course	Certificate level	Duration (months)	weekly hours	attendance	fee	Remark
1	RII40815	ivil Construction Design	IV					Not offered anymore
2	CPP40121	RESIDENTIAL DRAFTING	IV	9 - 24	6.0 - 21.0hrs	1 - 4, 7 - 8	\$10,600.00 - \$2310.00	
3	MEM40412	Engineering Drafting	IV	12 - 17	7.0 - 14.0 hrs	1 - 2, 4 - 6, 8	0 [1]	
4	MSA30208	Manufacturing Technology (CAD/drafting)	III					Not offered anymore
5	CUA40715	Design	IV	4 - 12	6.0 - 20.0 hrs	1, 2, 4	\$2310.00 [2] - \$8.14 K	
6	CUA30715	Design Fundamentals	III	4 - 9	9.0 - 20.0 hrs	1 - 2, 4 - 5	\$1580.00 [2] - \$6.88K	
7	MSF40318	Kitchen and Bathroom Design	IV	12	12.0 hrs	2, 5, 7	\$3820.00 [2] - \$13.95 K	

Note: A. attendance: 1. Full Time, 2. Part Time, 3. ONLINE, 4. CAMPUS, 5. TRAINEESHIP, 6. Variable, 7. VIRTUAL, 8. Self paced, 9. Combination. B. fee. 1. Eligible for JobTrainer, 2. Eligible for Subsidy

**Table 3.** Australian Diploma in Architectural Design and Drafting and its corresponding courses (TAFENSW, 2022a).

serial number	course code	Course	Diploma Type	Duration (months)	weekly hours	attendance	fee	Remark
1	CPP50911	Building Design	Diploma	9 - 17			0 [1]	
2	RII60515	Civil Construction Design	Advanced Diploma					Not offered anymore
3	RII50515	Civil Construction Design	Diploma					Not offered anymore
4	MSF50218	Interior Design	Diploma	17 - 24	10.0 - 24.0 hrs	1 - 2, 4	0 [1]	

Note: The notations on attendance and fee are the same as in **Table 2**.

Valuation in the field of civil architecture. Each degree course has 24 subjects (TAFENSW, 2022a).

## 5. Curriculum Features of Australian Technical and Further Education

### 5.1. Rich Curriculum Mutual Recognition Connotation

The connotation of mutual recognition of Australian courses includes three aspects: first, the courses between high schools, TAFE colleges and universities can be recognized each other; Second, the issuing institution can recognize the courses that students have previously learned through Credit Transfer or Recognition of Prior Learning (RPL); Third, the meaning of the course knowledge can be relatively broad, which can be the skills and knowledge obtained from partic-

icipating in training, or the knowledge and skills obtained from work or participating in voluntary activities.

### **5.2. Flexible Course Study System**

The flexibility of TAFE College course study is reflected in two aspects. First, the attendance of the course are very diverse, which can be Full Time, Part Time, Online, CAMPUS, TRAINEESHIP, Variable, VIRTUAL, Self paced, Combination or other ways. Second, the course does not have a fixed learning time limit, only a fixed equivalent full-time learning time limit and credits. For example, for a degree course, no matter what kind of attendance the student adopts, as long as the equivalent full-time study time is 3 years and the credits reach 240, it would be deemed the course has been finished by the student as required.

### **5.3. Course Training Packages Are Developed by the Industry**

TAFE Australia's training package is similar to the syllabus or curriculum standard of courses in China. The syllabus or curriculum standards of Chinese courses are generally formulated following the procedures below: first, the government education authorities (Ministry of Education, Department of Education, Education Bureau, etc.) formulate guiding and programmatic documents; second, the teaching implementation departments (such as teaching and research offices) of each school will revise and refine the syllabus or curriculum standards of courses according to their own and the actual social situation. In all the procedures, few industry experts are directly involved. However, Australia's TAFE training package is not developed by the education sector (government authorities or TAFE colleges), but by the Australian Industry and Skills Committee (AISC) (AISC, 2022) in the Industry Reference Committees (IRCs). Skills Service Organizations will assist Industry Reference Committees (IRCs) in their work.

### **5.4. The Course Content Focuses on Practice**

The Australian TAFE College has built a large number of training rooms or training bases. Many trainings are mainly based on practical operations and supplemented by theory. Many courses are taught in the training rooms or training bases. There are also practice bases for real projects in cooperation with off-campus companies. For example, the training campus for civil engineering construction of TAFE NSW College has a VR training room and a training field with real construction scenes. Students can perform VR operations on the computer first, and then perform real operations. The trainees go to the real project site of the cooperative company after the training in the school training base. Their hotel catering service industry courses also have a training room with real hotel scenes. Students can operate on the spot immediately after listening to the class in the training room.

## **6. Experience and Inspiration**

### **6.1. Let Enterprises Participate More and More Directly in Curriculum Construction**

As mentioned above, the curriculum construction of vocational colleges in China is mainly completed by vocational colleges, and enterprises are rarely directly involved. China's current school-enterprise cooperation is more about the construction of laboratories, training rooms and training bases, and hiring off-campus enterprise experts to teach part-time jobs. The syllabus and teaching materials prepared by vocational colleges may place a little emphasis on theoretical knowledge, and the actual job skills knowledge will be weak, which may cause students to have difficulty adapting to the actual job when they just graduate. To change this, we can borrow the Australian practice of vocational training, where syllabuses or curriculum standards are set directly by industry committees and business experts.

### **6.2. Attendance of Courses Should Be More Flexible and Diverse**

Most of the current vocational education in China adopts the traditional collective face-to-face teaching method. Even though there are many MOOC courses in recent years, many MOOC courses are only open at specified times. This method of centralized teaching at a specified time cannot meet the diverse needs of students. Therefore, we can learn from the practice of Australian vocational education and adopt the practice of equivalent hours of credit system. No matter when students adopt what kind of learning methods, as long as they complete the prescribed credits and reach the equivalent hours, they are considered to have met the learning requirements. In this way, more people can learn the skills they want using the sporadic time they can squeeze out.

### **6.3. Establish a Virtual and Actual Training Base that Is Closer to Reality**

At present, most of the practical training projects that students in vocational colleges in China can do are written or small training projects, such as various curriculum design, engineering measurement, steel bar binding, concrete preparation, etc. For some large-scale training projects, it may use scaled or alternative models instead, such as the hoisting of fabricated components. This is mainly for financial, site and security reasons. Using a scaled model or a substitute model to replace the real prototype can only make the students understand the operation scene and operation process, and the process of adaptation to the real scene is still required. Therefore, we should increase capital investment and build as many training bases as possible in real scenarios, so that students can adapt to real working scenarios immediately after training. In order to avoid safety accidents caused by operation mistakes, a virtual training room can be built at the same time, so that students can operate in the virtual training room before conducting field operations, familiarize themselves with the operation process and

procedures, and try to prevent operation mistakes from causing safety accidents. Another advantage of building a virtual training room is that it can greatly shorten the training time and save training costs, so students can repeat the training many times.

### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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