

# Research on the Current Situation and Development Countermeasures of the "Three Education Reform" in Higher Vocational Architecture Majors

Huifang Guo\*, Jinxiu Wu, Yenan Zhang, Fangfang Yin

Zhejiang Tongji Vocational College of Science and Technology, Hangzhou, Zhejiang, 311231, China

\*Corresponding author: 32970400@qq.com

**Abstract:** After the implementation of the Vocational Education Law, the status of vocational education has been placed at an unprecedented height. Vocational education is one of the main sources of human resources in society, and promoting the high-quality development of vocational education is of great significance for social progress. Teachers, teaching methods, and textbooks are the most important elements in the development of vocational education. This article distributed a survey questionnaire to teachers majoring in architecture to investigate the main problems in the "Three Education Reform" of vocational education, identify the key directions of the "Three Education Reform", and propose countermeasures for the "Three Education Reform" of vocational education based on the survey results. The "Three Education Reform" should closely adhere to the requirements of the vocational education law and the new era, improve the comprehensive literacy of teachers' dual teachers, enhance the vocational education characteristics of textbooks, strengthen the informationization of teaching methods for teachers and the connection with the "Four New", and improve the comprehensive teaching effect of the classroom.

**Keywords:** Vocational education; Investigation and analysis; Countermeasure research; Reform of the Three Teachings; Personnel training

## 1. Introduction

After the implementation of China's Vocational Education Law, the status of vocational education has been placed at an unprecedented height. At the same time, it also puts forward some new requirements and development directions for vocational education. Vocational education is one of the main sources of human resources in society, an important driving force for social and economic development, and of great significance for China's future development. Therefore, conducting research on vocational education is of practical significance. In the development of vocational education, "teachers, textbooks, and teaching methods" are also the most important elements, so conducting research on the "three education reforms" of vocational education is of great significance[1].

On January 24, 2019, the State Council issued the "Implementation Plan for National Vocational Education Reform", proposing specific policies and measures for the reform of teachers, textbooks, and teaching methods (hereinafter referred to as the "three educations"); In May to June of the same year, the Ministry of Education issued a notice on the issuance of the speech of Vice Premier Sun Chunlan at the National Conference on Deepening Vocational Education Reform, a guiding opinion on the formulation and implementation of professional talent training plans in vocational colleges, and a national plan for the construction of teaching innovation teams for vocational college teachers, all of which proposed to deepen the "three education" reform in vocational education. On September 16, 2020, the Ministry of Education[2], the National Development and Reform Commission, the Ministry of Industry and Information Technology, the Ministry of Finance, the Ministry of Human Resources and Social Security, the Ministry of Agriculture and Rural Affairs, the State owned Assets Supervision and Administration Commission of the State Council, the State Administration of Taxation, and the Poverty Alleviation Office of the State Council jointly issued the Action Plan for Improving the Quality and Excellence of Vocational Education (2020-2023), The Action Plan proposes that the "Three Education" reform campaign is an important task for vocational education to promote and cultivate excellence. In summary, it can be seen that the "three education" reform is the "top priority of vocational education reform and development in the new era" [3], and is an important breakthrough in improving the quality of vocational education.

The construction industry is an important pillar industry for the development of China's national economy and society. In 2021, the total output value of the construction industry in China was 29.3 trillion yuan, accounting for 7% of the country's GDP; There are 52.8294 million employees, accounting for 7% of the total number of employed people in society. Students majoring in architecture in vocational education are an important component of the construction industry, and their level of professional skills is directly related to the healthy development of the construction industry. At the same time, in the context of school enterprise cooperation and industry education integration, the cooperation between construction enterprises and vocational education architecture majors is becoming increasingly broad. How to better serve the construction industry in the context of promoting high-quality development of higher vocational education by the country is an important topic worth studying. The "teachers, textbooks, and teaching methods" are directly related to students' knowledge acquisition and skill improvement [4]. It is of great practical significance and value to carry out the "three education" reform of architecture majors that is in line with the development of the times, and to improve their quality and excellence[5].

## 2. Current research status at home and abroad

In March 2019, Wang Zhongming proposed that "teachers", "textbooks", and "teaching methods" should run through the entire process of talent cultivation, which is related to "who will teach", "what to teach", and "how to teach" in vocational education. It directly affects the quality of education and teaching, and is the top priority of vocational education reform and development in the new era; And propose the "three education" reform measures to improve the overall quality of teachers, improve the quality of course materials, and innovate teaching methods with the participation of all staff. In June 2019, Wang Chengrong and Long Yang proposed the urgent reform of the "three education" in vocational education, and conducted research on how the "three education" reform can improve the quality of talent cultivation in vocational colleges from the perspectives of "empowering" teachers, reforming and innovating curriculum and textbooks, the "three classrooms" teaching mode, and the teaching evaluation and feedback of the "three education" reform. In September 2019, Sun Jin [6] proposed that promoting teacher reform in the "three education" reform should focus on "guiding, training, evaluating, and stimulating" multiple efforts; Promoting textbook reform should be based on "who to cultivate, how to cultivate people, and for whom to cultivate people", to enhance teachers' abilities; Promoting teaching method reform should be based on "creating scenarios, creating forms, and transforming methods", and make good use of information technology. In October 2019, Liang Kedong and Wang Yanan analyzed the current problems in the cultivation and evaluation of vocational education talents in China, and proposed measures to improve the quality of vocational education talent cultivation, such as building a "dual teacher" quality teacher team professional development system with the "three education reform" as the core, forming a new form of textbook development mechanism with vocational education characteristics, and creating a new classroom teaching model with competency as the core. In November 2019, Qin Huawei and Chen Guang proposed that the "three education" reform is a key link in achieving high-quality development of vocational education. Fully understanding the connotation and significance of "teachers, textbooks, and teaching methods", grasping the goals, principles, and paths of the "three education" reform, can help achieve high-quality development of higher vocational education. In February 2020, Wei Xiaoyang. In August 2020, Sun Can [7] proposed to continuously optimize and improve the proportion structure of teachers in the team, enhance their professional literacy and professional abilities, and create a high-level teacher teaching innovation team that meets the actual needs of education and teaching in the context of the "Three Education Reform". In August 2020, Song Liangyu proposed measures for the "three education" reform of vocational education from the perspective of the spirit of craftsmanship in the new era: at the teacher level[8], the "one in, one open, and one paired" professional teacher training project for craftsmanship can be implemented to create a professional teacher team of craftsmanship; At the textbook level, an integrated textbook development team of "craftsmen+professional teachers" can be established to reconstruct the explicit curriculum system based on the cultivation of craftsmanship spirit in the new era; At the teaching method level, actively promote the teaching reform of "enterprise classroom+practical classroom+office style classroom", and cultivate students' craftsmanship awareness through real-life teaching. In September 2019, Yao Yafeng and Xu Guangshu proposed that the construction of professional groups under the "Double High Plan" should focus on establishing a dynamic adjustment mechanism for professional group construction, restructuring the competency based curriculum system of professional groups, deepening the "three education" reform, and building a platform for industry education integration[9].

### 3. Investigation on the Problems Existing in the "Three Education Reform"

The "teachers, textbooks, and teaching methods" (referred to as the "three educations") are the three major teaching elements of vocational colleges regarding "who will teach", "what to teach", and "how to teach". They are also the most direct and important factors that affect the quality of teaching in vocational colleges. At present, vocational education itself is not strong and of low quality. One important reason is that there are problems with the "three educations", especially in professional teaching, where the professional and professional characteristics of the "three educations" are not reflected enough. Specifically, there is a shortage of "dual teacher" teachers; The update of textbook content is slow and disconnected from the actual production of enterprises; The teaching method is too rigid and still focuses on classroom teaching, which is no longer suitable for the requirements of educational development[10].

This survey questionnaire is distributed to teachers majoring in architecture to investigate the problems they believe exist in the "Three Education Reform". The main recipients of this distribution are school teachers, part-time teachers, and enterprise personnel. The proportion of respondents filling out the questionnaire is 91.67% for full-time teachers, 4.17% for part-time teachers, and 4.17% for others. This is shown in table1.

Table 1: Proportion of Various Teachers in the Survey.

Option	proportion
A. On campus full-time teachers	91.67%
B. On campus part-time teachers	4.17%
C. Internship position teacher	0%
D. Other	4.17%

Among them, double teacher teachers account for 70.83%..This is shown in table2.

Table 2: Proportion of Double Teacher Teachers in the Survey

Option	proportion
Yes	70.83%
No	29.17%

50% of teachers use national planning textbooks and self-compiled school-based textbooks, accounting for 25%. New loose leaf and work manual textbooks developed through school enterprise cooperation account for 8.33%. This is shown in Table 3.

Table 3: Types of Teaching Materials Used by Teachers.

Option	proportion
National planning textbooks	50%
Self-compiled school-based textbooks	25%
New type of loose leaf and work manual textbooks developed through cooperation between schools and enterprises	8.33%
other	16.67%

75% of teachers believe that the current knowledge system in textbooks can better showcase the modernity, 16.67% of teachers believe that textbooks exhibit mediocrity, and 8.33% of teachers believe that existing textbooks cannot showcase the modernity. This is shown in Table 4.

Table 4: Is the era characteristic of the textbook good.

Option	proportion
A. Very good	0%
B. Better	75%
C. General	16.67%
D. No	8.33%

54.17% of teachers use blended online and offline teaching methods, 41.67% occasionally use blended teaching methods, and 4.17% have never used blended teaching methods. This is shown in Table 5.


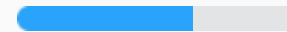
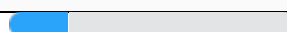
Table 5: Proportion of adopting mixed online and offline teaching methods.

Option	proportion
Widely used	54.17%
Occasional use	41.67%
Never used	4.17%

16.67% of teachers have a good grasp of modern educational technology, 62.5% of teachers are able

to master modern educational technology, and 20.83% of teachers have a poor grasp of modern educational technology. This is shown in Table 6.

*Table 6: Degree of Teacher Mastery of Modern Educational Technology.*

Option	proportion
A. Mastering very well	 16.67%
B. Able to master commonly used technical means	 62.5%
C. Poor mastery	 20.83%

#### 4. Development Strategies for the "Three Education Reform" of Architecture Majors

The construction industry is an important pillar industry for the development of China's national economy, with over 50 million employees currently employed. At present, vocational education students are mainly engaged in construction, supervision, cost control, and other personnel in the construction industry. These types of work require high technical operability and practical engineering cognition. The implementation of these requirements is closely related to the teachers, textbooks, and teaching methods of vocational education. In order to improve the adaptability of students majoring in architecture after work and enhance their skills, the following path of "three education reform" for architecture majors is proposed[11].

##### 4.1. Improving the "dual teacher" literacy of the teaching staff

The characteristics of vocational education require that teachers in school possess both knowledge literacy and professional skills, and the "dual teacher" literacy is a comprehensive experience of these two aspects. Vocational education universities should design detailed standards for the qualification recognition of "dual teacher" teachers that are suitable for architectural majors and operable based on their own educational characteristics. Determine the dual teacher level and existing deficiencies of teachers in school through the dual teacher standard. In addition, we will introduce dual qualified talents who meet the standards through the dual qualification standard. In addition, it is necessary to establish a platform for school enterprise cooperation, improve teachers' professional skills through training and exercise in enterprises[12], and continuously stabilize and improve teachers' dual teacher abilities. LinkedIn can establish a "two-way" employment system, which can improve the quality of both teachers and enhance communication and cooperation between schools and enterprises through the system of full-time teachers being hired by enterprises and enterprise teachers coming to teach on campus. In order to ensure the smooth implementation of this two-way mutual employment system, it is necessary to establish mechanisms such as mutual recognition of professional titles, workload, and assessment. In addition, the reward system can also be upgraded, and certain policy preferences can be given in the evaluation and appointment of professional titles based on the performance of teachers in the enterprise, and certain honorary titles can be given based on the performance of industry teachers in school teaching[13].

##### 4.2. Improving the vocational education characteristics of textbooks

In the process of compiling vocational education textbooks, attention should be paid to the development needs of the "four new" industries [14], especially the new technologies, processes, standards, and methods for industry development. Based on the characteristics of architecture majors, develop loose leaf teaching materials and work manual teaching materials. At the same time, in the process of textbook writing, it is necessary to fully introduce enterprise staff and industry experts, and through communication and collaboration with them, ensure that the textbook truly meets the requirements of industry personnel. Especially in the process of textbook writing, attention should be paid to the training of students' practical abilities, integrating theoretical knowledge and practical knowledge, integrating professional knowledge and skill knowledge, and integrating textbooks with job requirements. In addition, the textbook should fully integrate the content of "curriculum ideological and political education", integrate moral education and talent cultivation into the textbook, fully leverage the value leading role of the textbook, enhance students' love for the architecture profession, enhance their professional identification with the architecture profession, and enhance students' motivation to learn professional knowledge during holidays to enhance the actual effectiveness of the textbook[15].

#### 4.3. Improving Teachers' Informatization Teaching Level

With the rapid development of modern information technology and equipment, the forms and methods of vocational education have undergone significant changes. The teaching methods of vocational education teachers should be aligned with the perspectives and means of students' information reception, and introduce new technologies and teaching methods that students love into classroom teaching. Teachers should adopt a mixed online and offline teaching approach, especially focusing on VR technology and digital resources that are popular with students to enhance their love for the classroom and create a lively, interesting, and high-quality smart classroom. In addition, in the process of classroom teaching, attention should be paid to strengthening exemplary teaching. The positions of construction workers, supervisors, cost controllers, and other positions held by students majoring in architecture are highly hands-on, which requires them to be able to master practical operation skills during the classroom learning process. This requires teachers to provide more exemplary teaching and enable students to master professional skills more accurately. In addition, teachers should pay attention to the subtle integration of ideological and political education in the classroom teaching process, so that students' knowledge and skills can be improved while their ideological level can also be improved[16].

#### 5. Conclusions

After the implementation of the Vocational Education Law, higher requirements have been put forward for "teachers, textbooks, and teaching methods". Studying the problems existing in the "three education reforms" is conducive to ensuring the high-quality development of vocational education. This article found through the distribution of survey questionnaires to teachers majoring in architecture that there are currently problems in vocational education, such as a lack of dual teacher quality, insufficient timeliness and professional characteristics of textbooks, and a lack of skill demonstration in teaching methods. Based on this, this article proposes the direction of the three education reforms, including improving teachers' "dual teacher" cultivation, improving the vocational education characteristics of textbooks, and enhancing teachers' information technology level. The research results of this article can provide countermeasures for the "three education reforms" in vocational education.

#### Acknowledgements

This article is a phased achievement of the 2021 Education Research Project of Zhejiang Tongji Vocational College of Science and Technology, titled "Practice and Research on the Implementation of the Three Education Reforms in Architecture Majors under the Background of Improving Quality and Optimizing Vocational Education" (Project No. jy202101), and the 2021 Zhejiang Province China Vocational Education Research Project, titled "Investigation and Analysis of the Current Situation and Effective Countermeasures for the Cultivation of Craftsmanship Spirit in Architecture Majors" (Project No. ZJCV2021E44).

#### References

- [1] Anonymity. *Action Plan for Improving the Quality of Vocational Education (2020-2023)* [J]. *Education Science Forum*, 2020.2020(33):3-11
- [2] The Ministry of Education's *Action Plan for Improving the Quality and Excellence of Vocational Education* [Z]. (2020-2023).[http://www.gov.cn/zhengce/content/2019-02/13/content\\_5365341.htm](http://www.gov.cn/zhengce/content/2019-02/13/content_5365341.htm).
- [3] Wang Bin. *The Practical Significance and Strategy of Improving the Quality and Excellence of Higher Vocational Education* [J]. *Journal of Wuhu Vocational and Technical College*, 2021, 23(01):1-4.
- [4] Tao Hong, Jiang Xueer. *Exploring the Path of the "Three Education" Reform in Higher Vocational Education from the Perspective of Game Theory* [J]. *Vocational Education Forum*, 2021, 37(02):61-66.
- [5] Wang Zhongming. *Deepening the Reform of "Three Education" and Improving the Quality of Technical and Skilled Talent Training* [J]. *China Vocational and Technical Education*, 2019(07): 108-110.
- [6] Wang Chengrong, Long Yang. *Deepening the "Three Education" Reform and Improving the Quality of Talent Training in Vocational Colleges* [J]. *China Vocational and Technical Education*, 2019(17): 26-29.
- [7] Sun Jin. *Exploration of Comprehensively Deepening the "Three Teachings" Reform in Higher Vocational Colleges - Taking Jiangsu Vocational and Technical College of Architecture as an Example*

- [J]. *Coal Higher Education*, 2019, 37(04):59-62.
- [8] Liang Kedong, Wang Yanan. *Innovative Path of Vocational Education Talent Training and Evaluation Reform Based on the "Three Education Reform"* [J]. *China Vocational and Technical Education*, 2019(28): 28-34+41.
- [9] Qin Huawei, Chen Guang. *Under the background of the implementation of the "Double High Plan", the "Three Education" reform* [J]. *China Vocational and Technical Education*, 2019(33):35-38.
- [10] Wei Xiaoyang. *Practice and Exploration of Deepening the Construction of Textbooks in the New Era of the "Three Education" Reform* [J]. *China Vocational and Technical Education*, 2020(05):84-87.
- [11] Sun Can. *Research on the Construction of Teaching Innovation Teams for Vocational College Teachers under the Background of the "Three Education Reform"* [J]. *Industrial Innovation Research*, 2020(15): 132-133.
- [12] Song Liangyu. *Analysis of the Reform Path of the "Three Teachings" in Vocational Education from the Perspective of the Craftsman Spirit in the New Era* [J]. *China Vocational and Technical Education*, 2020(23):94-96.
- [13] Yao Yafeng, Xu Guangshu. *Exploring the Construction of Professional Groups under the Perspective of the "Double High Plan" - Taking the Architectural Engineering Technology Professional Group of Nantong Vocational University as an Example* [J]. *Vocational and Technical Education*, 2020, 41(26): 23-27.
- [14] Li Jing. *Research on the Improvement and Optimization Path of the "Double Teacher" Teaching Team in Higher Vocational Colleges* [J]. *Journal of Hubei Vocational and Technical College*, 2021, 24(03): 33-38.
- [15] Ding Xin. *Research on the Construction of "Loose-leaf" Textbooks in Vocational Colleges under the Action Plan for Improving Quality and Excellence* [J]. *Education and Vocational*, 2022(02):108-112.
- [16] Huang Yizhou, Hu Xiaotao. *Strategic Thinking on the Professional Development of Teachers in Vocational Colleges in the New Stage of Improving Quality and Training* [J]. *Big Vision*, 2022(01): 49-54.