

DEVELOPMENT OF COOPERATIVE AND WORK-INTEGRATED EDUCATION  
OF ART DESIGN MAJOR IN HIGHER VOCATIONAL COLLEGES UNDER HENAN PROVINCE

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## ABSTRACT

The objectives of this research were: (1) to explore the components of Cooperative and Work-Integrated Education (CWIE) of Art Design Major in Higher Vocational Colleges under Henan Province; and (2) to develop guidelines for development of Cooperative and Work-Integrated Education of Art Design Major in Higher Vocational Colleges under Henan Province.

The research was a mixed methodology research, which consisted of quantitative research and qualitative research. The population of the research included 1,482 professional teachers and educational administrators of art and design majors from 39 higher vocational colleges in Henan Province, the People's Republic of China. The sample of 306 professional teachers and education administrators was obtained by stratified sampling technique. The instruments used for data collection included semi-structured interviews form, Likert's scale questionnaires, and records of focus group discussions. The statistics used for data analysis were descriptive statistics, and Exploratory Factor Analysis as well as content analysis was used.

The research findings revealed that: (1) the development of Cooperative and Work-Integrated Education in higher vocational art design in Henan Province consisted of 5 components: teaching quality management; organization management; college and enterprise development management; leadership management; social services management; and (2)

there were 11 guidelines for development of Cooperative and Work-Integrated Education in Henan Higher Vocational Colleges, which were as follows: three guidelines on strengthening teaching quality management, two guidelines on strengthening organization management, two guidelines on promoting college-enterprise cooperation development management, two guidelines on strengthening leadership management, and two guidelines on improving the level of social services.

**Keywords:** Development, Art Design Major, Higher Vocational Colleges, Henan Province

## 1. Introduction

In recent years, Cooperative And Work-Integrated Education (CWIE) in Chinese higher vocational colleges has attracted much attention. This teaching model aims to bridge the gap between theoretical knowledge and practical skills, providing students with a well-rounded education to respond to the needs of the industry. However, effective management is essential for the successful implementation and development of this combination. The researchers believe that in-depth study of the development of CWIE in Henan higher vocational colleges will not only contribute to the academic literature of CWIE in Chinese higher vocational colleges, but also provide practical suggestions for Henan higher vocational colleges. By understanding the best practices and strategies for managing this model, the College can improve its curriculum, teaching methods, and industry partnerships, ultimately increasing the employability and success of its graduates. The main objective of this research is to explore the components of CWIE management in higher vocational colleges in Henan Province, and provide valuable insights and guidelines for the development of CWIE in higher vocational colleges.

## 2. Research Questions

1. What are the components of Cooperative and Work-Integrated Education of Art Design Major in Higher Vocational Colleges under Henan Province?
2. What are the guidelines for developing Cooperative and Work-Integrated Education of Art Design Major in Higher Vocational Colleges under Henan Province?

## 3. Research Objectives

1. To explore the components of Cooperative and Work-Integrated Education of Art Design Major in Higher Vocational Colleges under Henan Province.

2. To develop guidelines for development Cooperative and Work-Integrated Education of Art Design Major in Higher Vocational Colleges under Henan Province.

#### 4. Research Methodology

The title of this research was “Development of Cooperative and Work-Integrated Education of Art Design major in Higher Vocational Colleges under Henan Province”. This research mainly discusses the components of CWIE development in Higher Vocational Colleges under Henan Province, and puts forward the guiding ideology of CWIE development in Henan higher vocational colleges. The research was mixed methodology design which were comprised of quantitative research and qualitative research. This research was mainly divided into three steps:

Step 1: Determining the variables of Cooperative and Work-Integrated Education of Art Design major in Higher Vocational Colleges under Henan Province.

Step 2: Exploring the components of Cooperative and Work-Integrated Education of Art Design Major in Higher Vocational Colleges under Henan Province.

Step 3: Developing guidelines for development Cooperative and Work-Integrated Education of Art Design Major in Higher Vocational Colleges under Henan Province.

#### 5. Data Analysis

##### 5.1 Data analysis for research objective 1

This research adopts the method of combining qualitative research with quantitative research. The total number of participants in the research was 1,482 art design professionals from 39 higher vocational colleges in Henan Province. The sample size was determined to be 306 by using Krejcie and Morgan's Table(1970). A stratified random sampling method was used to obtain 306 samples. Through semi-structured interviews, 9 presidents of higher vocational colleges, deans of art schools and teachers who have worked in higher vocational colleges for more than 8 years were interviewed. The data were collected using semi-structured interviews and a 5-point Likert's scale. SPSS was used to analyze the collected data.

Researcher followed the following procedure for the exploring the components of Cooperative and Work-Integrated Education of Art Design major in Higher Vocational Colleges under Henan Province by Exploratory Factor Analysis. The validity of each variable was analyzed. The researcher analyzed the arithmetic mean ( $\bar{x}$ ) and the standard deviation (S.D.) to compare the resulting arithmetic mean to a Best's based criterion.

It was reviewed using test statistics, which hereby used variable statistical monitoring to be related based on KMO and Bartlett's Test values, with the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (MSA) between 0-1, and Bartlett's Test of Sphericity, test statistics testing variables to see if they were related as shown in Table 1.

Table 1 Showed KMO-Meyer-Olkin and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.973
Bartlett's Test of Sphericity	Approx.Chi-Square	36905.954
	df	2775
	Sig.	0.000

Researcher used factor extraction by Principle Component Analysis (PCA) with orthogonal rotation et.al and varimax rotation. SPSS applicatiozn software was used to analyze the collected data to obtain the total variance interpretation chart. According to Kaiser's Criterion, there are a total of 5 components with eigenvalues greater than 1, and the specific parameters are shown in Table 2.

Table 2 Showed Eigenvalues, Percentage of Variance, Percentage of Cumulative Variance of the Development of Cooperative and Work-Integrated Education of Art Design major in Higher Vocational Colleges under Henan Province.

Total variance interpretation			
Extraction method: president component analysis			
Components	Eigenvalues	Percentage of Variance	Percentage of Cumulative
1	54.06	72.08	72.08
2	2.16	2.88	74.95
3	1.48	1.98	76.93
4	1.14	1.53	78.46
5	1.00	1.34	79.79

Based on variables described in each of the main components after rotating the axis and factor loading, the researchers named the 5 components and conducted focus group expert discussions.

### 5.2 Data analysis for research objective 2

For this research, 9 vocational education experts were selected, all of whom were teachers and administrators from higher vocational colleges in Henan Province. The collection method is focus group discussions. The selection criteria for the 9 experts providers are as follows: more than 15 years of work experience in related fields, including 3 vocational school presidents, 3 deans of art colleges, and 3 professional tutors of enterprises. Finally, 11 guidelines for development of CWIE in Higher Vocational Colleges under Henan Province were obtained.

## 6. Summary

This research adopts a mixed method combining quantitative research and qualitative research, adopts EFA analysis method to research the development of CWIE in Henan higher vocational colleges, identifies the relevant variables of CWIE development in Henan higher vocational colleges, and obtains the components of CWIE development in Henan higher vocational colleges through analysis. Finally, the guiding opinions of CWIE development in higher vocational colleges in Henan Province are obtained. The specific steps are as follows:

Step 1: Determining the variables of Cooperative and Work-Integrated Education of Art Design major in Higher Vocational Colleges under Henan Province.

1) The researcher defines the conceptual framework of the research. Through the study and research of relevant literature, concepts and theories.

2) On the basis of literature review, the index framework of CWIE development in higher vocational colleges was initially constructed, and 9 experts (including 3 principals, 3 deans of art colleges and 3 teachers of art and design majors) with more than 8 years of work experience in higher vocational colleges were interviewed in the form of semi-structured interviews.

3) Through literature analysis and expert interviews, the index variables of CWIE development in higher vocational colleges in Henan Province were summarized, and a 5-point Likert scale questionnaire was designed.5 key information providers were invited to conduct a Questionnaire Validity Check (IOC), and the  $IOC \geq 0.6$  proved that the question was valid. An additional 30 questionnaires were distributed for reliability testing (Try Out), Cronbach's alpha coefficient was at 0.906 which can be used to describe the reliability of the questionnaire. This indicates that the designed questionnaire is valid and can be issued.

Step 2: Exploring the components of Cooperative and Work-Integrated Education of Art Design Major in Higher Vocational Colleges under Henan Province.

1) Stratified collection method was adopted to conduct a questionnaire survey on administrators and teachers of 39 higher vocational colleges in Henan Province, and KMO test was conducted on the collected data.

2) Through principal component analysis (PCA), five components of CWIE development in higher vocational colleges in Henan Province were obtained.



Figure 1 Shows the Components of Cooperative and Work-Integrated Education of Art Design major in Higher Vocational Colleges under Henan Province

Step 3: Developing guidelines for development Cooperative and Work-Integrated Education of Art Design Major in Higher Vocational Colleges under Henan Province, and invite 9 experts to evaluate.

1) Focus group discussion, inviting 9 experts with more than 15 years of work experience (including 3 principals, 3 deans of the School of Art and 3 business mentors) to discuss the 5 components of this research, and put forward 11 guidelines on the development of CWIE in Henan higher vocational colleges.

2) Focus group experts evaluate the guidance. Experts believe that the 11 guidelines are targeted and accurate for the development of CWIE in higher vocational colleges in Henan Province, and are practical and feasible, and can be used for practical promotion and application.

3) According to the guidelines for the development of CWIE in higher vocational colleges in Henan Province, through focus group discussions and researchers' conclusions, the framework for the development of CWIE in higher vocational colleges in Henan Province was preliminarily formulated.

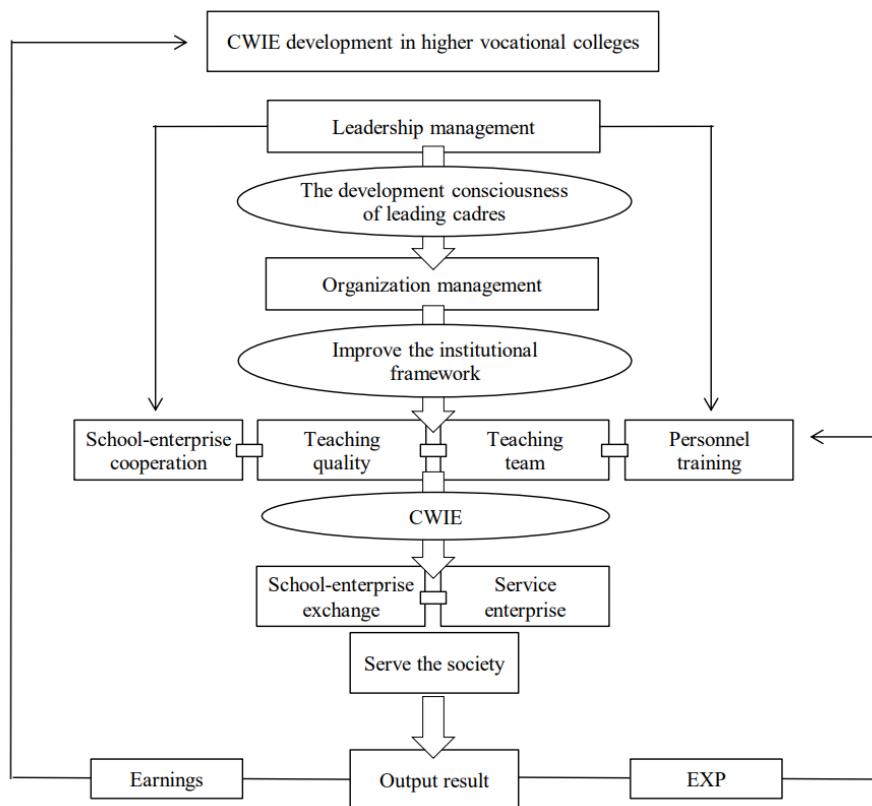


Figure 2 CWIE development framework explored by researcher

## 7. Discussion

Based on the research objectives, the discussion will be presented as follows:

In the components of CWIE in higher vocational colleges in Henan Province were composed of five parts, respectively : teaching quality management; organization management; college and enterprise development management; leadership management and social services management.

(1) Improving teaching quality has a very important impact on the management and development of CWIE. The core task of higher vocational colleges is always to cultivate talents, and improving teaching quality is the eternal core of the development of higher vocational colleges. This is consistent with the research direction of Zhou Huiwen (2021). He believes that the primary task of strengthening CWIE in vocational colleges is to improve the teaching quality of vocational colleges, and improve the teaching quality of schools from various aspects such as school regulations, leadership management, teacher management, and student management.

(2) Strengthening organizational management has a great impact on CWIE. Organizational management is the process of establishing organizational structure, specifying

positions or positions, and clarifying the relationship of responsibilities and rights, so that members of the organization can cooperate with each other and work together to effectively achieve organizational goals. In the face of each activity and each cooperation, it is a complicated process to organize and manage, including communication planning, overall design, technical operation, and the implementation and management of the whole process. Good organizational skills, can effectively promote and achieve the goals of school development. This is consistent with the research view of Guo Guangjun, & Zhao Xionghui (2020). They believe that good organization and management in higher vocational colleges are the guarantee for the overall development of schools, such as the skills competition for students in higher vocational colleges, activities between higher vocational colleges and enterprises, and social service activities. All of them need good organization and management to achieve high efficiency and high quality.

(3) Strengthening the cooperation between schools and enterprises is the key to CWIE. CWIE is based on college-enterprise cooperation, which is the basic mode of running higher vocational colleges. CWIE is the concrete embodiment of this "basic mode". The results and experience of college-enterprise cooperation should react on CWIE, making the way and process of CWIE more scientific and reasonable. This is in line with Norah McRae.(2016); Guo Guangjun, & Zhao Xionghui (2020) have the same research content. They believe that higher vocational colleges must take the form of enterprises as the main body and schools as the main body, so that students can combine work and study more, and realize the unification of enrollment and entry, and the docking of graduation and employment. Xu Xiangdong(2021) proposed that the spirit of artisans should be carried forward and the attitude of striving for excellence should run through the whole process of talent training, which not only requires vocational colleges to cultivate students' morality and quality, but also requires enterprises to cultivate students' skills and perseverance.

(4) Strengthening leadership management in higher vocational colleges has a certain impact on the development of CWIE. Leadership is the core strength of a school, which determines the development direction and decision-making of the school. Administrators of higher vocational colleges should enhance their sense of responsibility, clarify the needs and direction of the development of higher vocational colleges, spend more time paying attention to the relevant policies of vocational education, in the face of various work affairs, improve their judgment, understanding and execution ability, and strengthen the awareness of innovation and development and communication ability. This is consistent with Pan Jianhua's

point of view (2017) that higher vocational colleges should pay attention to the development of leadership, improve the development consciousness, organizational ability and personal charm of leaders, so as to better enhance the effectiveness of cooperation between higher vocational colleges and enterprises, clarify development goals, improve working methods and improve cooperation efficiency.

(5) Strengthening the social service management of higher vocational colleges has a certain impact on the development of CWIE. Due to the unique educational philosophy and teaching mode of CWIE, higher vocational colleges have decided to pay more attention to the needs of social and market development, and have a closer connection with the real economy, especially in the aspects of skill training and talent service. To carry out social service is not only the need of higher vocational colleges' own development, but also the objective need of local economic development. Wang Jingjing (2020) believes that the future development trend of vocational education is the cooperation between schools and enterprises, which provides human resources for the society through the training of students' vocational education. Through school-enterprise joint scientific and technological research and development, to serve the needs of social development.

The researcher believe that these findings have important implications for future development. First of all, these results can provide guidance and reference for higher vocational colleges in Henan Province to help them better implement the development strategy of CWIE. Secondly, these results can promote the cooperation and exchanges between higher vocational colleges, enterprises and society, and promote the in-depth development of CWIE. Finally, these results can also provide reference and inspiration for other regions and higher vocational colleges, and promote the development of higher vocational education in the whole country.

There were 11 guidelines on the development of CWIE in higher vocational colleges, which were: (1) Strengthen teaching management and curriculum construction; (2) Cultivate and improve teachers' ability; (3) Strengthen the effectiveness of personnel training; (4) Strengthen the organization and management of CWIE process; (5) Improve the management system framework based on CWIE; (6) Strengthen personnel exchanges between schools and enterprises; (7) Promote the integration of industry and education and cooperation between schools and enterprises; (8) Strengthening leadership capacity building in higher vocational colleges; (9) Improve the development consciousness of leaders in higher vocational colleges;

(10) Establish social service awareness and technical support; and (11) Improve the measures of service enterprises to ensure the development of CWIE.

1) Strengthening teaching management and curriculum construction as well as training and improving teachers' abilities are aimed at improving teaching quality and students' learning outcomes. This is in line with the research direction of Guo Guangjun (2017), who emphasizes the importance of professional competence and teaching methods of teachers in vocational colleges, as well as the impact of curriculum design and implementation on student learning.

2) To strengthen the effectiveness of personnel training and strengthen the organization and management of the process of CWIE is to ensure that students can get practical opportunities and internship opportunities, and improve their practical ability and employment competitiveness. This is consistent with the views of Dai Fei (2021) and the research content of Bruno, A, & Dell 'Aversana, G. (2018), who emphasized the importance of cooperation and communication between schools and enterprises, as well as effective organization and management for the promotion and implementation of CWIE.

3) To improve the management system framework based on the CWIE and strengthen personnel exchanges between schools and enterprises is to promote the integration of industry and education and college-enterprise cooperation. This is consistent with the research content of Guo Guangjun, & Zhao Xionghui(2020), who emphasized the importance of the standardization of management system and the communication and cooperation between college and enterprise personnel for the successful implementation of the CWIE.

4) To strengthen the construction of leadership ability in higher vocational colleges and improve the development consciousness of leading cadres in higher vocational colleges is to ensure the smooth development of the CWIE in higher vocational colleges. This is consistent with the view of Zhu Yongxin(2013), who emphasizes the importance of the role and ability of leaders for the promotion and development of CWIE.

5) Establishing social service awareness and technical support and improving service enterprise measures are to improve the social influence and service level of higher vocational colleges. This is consistent with the views of Norah McRae(2016), who believes that the contact and interaction between vocational colleges and enterprises, as well as the provision of quality services for the society, are the important goals of cooperation and development between vocational colleges and enterprises, and have a very important impact on the development of CWIE.

Researcher believe that these guidelines are of great significance to the development of higher vocational colleges in the future. They provide specific action directions and improvement measures for higher vocational colleges in Henan Province to help them better implement the development strategy of CWIE. At the same time, these guidelines can also provide reference and inspiration for other regions and higher vocational colleges, and promote the development of higher vocational education in the whole country. By following these guidelines, higher vocational colleges can improve teaching quality, cultivate outstanding talents, strengthen school-enterprise cooperation, and make greater contributions to social and economic development.

## 8. Recommendations for Policy Formulation

According to the CWIE management theory of higher vocational colleges, combined with China's educational practice, the following policy formulation suggestions are put forward:

1. Strengthen policy support for CWIE management in higher vocational colleges: The government should formulate relevant policies to encourage and support higher vocational colleges to carry out CWIE, and provide corresponding funding and resource support.
2. Establish a sound curriculum system and teaching management mechanism: Higher vocational colleges should strengthen curriculum construction to ensure that the implementation of CWIE matches the actual needs. At the same time, an effective teaching management mechanism should be established to improve teachers' teaching ability and teaching quality.
3. Strengthen cooperation and exchange between higher vocational colleges and enterprises: the government and higher vocational colleges should actively promote cooperation and exchange between higher vocational colleges and enterprises, establish stable cooperative relations, and provide practical opportunities and employment channels for students.
4. Improve the CWIE management system in higher vocational colleges: Higher vocational colleges should establish a sound CWIE management system, including personnel training, organization management, curriculum design, etc., to ensure the effective implementation and management of CWIE.
5. Improve the leadership ability of the leadership of higher vocational colleges: the leadership of higher vocational colleges should strengthen their own leadership training,

improve the awareness and understanding of CWIE, and provide strong leadership support for the development of CWIE.

6. Strengthen cooperation between higher vocational colleges and social service enterprises: Higher vocational colleges should establish close cooperative relations with social service enterprises to provide technical support and social services for the development of CWIE.

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