

Research on the Reconstruction of Curriculum System in Vocational Undergraduate Education—A Case Study of Early Childhood Education Major

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Abstract: The curriculum system serves as the core and foundation of vocational undergraduate education, and is also the logical starting point for promoting its steady development. This study analyzes the existing problems in vocational undergraduate curriculum systems, such as insufficient integration between industry and education, vague talent development standards, and unsatisfactory integration of industry and education. Taking early childhood education as an example, this research reconstructs the curriculum system for vocational undergraduate early childhood education majors using a “platform course + modular course” approach. Ultimately, the effective implementation of the curriculum system is guaranteed by strengthening the implementation system and building up the dual-qualified teaching team, practical training equipment, and practical training bases. This study will provide a theoretical basis for the development of a unique curriculum system for vocational undergraduate education and offer ideas for the construction of curriculum systems for other vocational undergraduate majors.

1. Introduction

As an essential component of talent development programs, the curriculum system stands as the core and basis of vocational undergraduate education. The *14th Five-Year Plan and Vision 2035 for China's Economic and Social Development of the People's Republic of China* outlines the steady development of vocational undergraduate education as a critical measure for enhancing vocational and technical adaptability and thus formulating a blueprint for the future reform of vocational education. Therefore, the construction of the curriculum system is the logical starting point for the steady development of vocational undergraduate education and provides the legitimacy foundation for its existence and development. Failure to differentiate the curriculum system of vocational undergraduate majors from those of applied undergraduate and junior colleges and vocational schools will lead to inadequate support for the steady development of vocational undergraduate education and hinder its role as the “pioneer” in modern vocational education system. Therefore, reconstructing the curriculum system of vocational undergraduate majors and promoting the demonstration and leadership of experimental sites in vocational undergraduate education have become critical focal

points to address in the development process of China's vocational education in the new era.

2. The Significance of Developing Vocational Undergraduate Education

According to literature [1], the vocational education system in developed countries shares similarities with the general higher education system in China, reflecting a complete educational process from secondary vocational to graduate levels. This vertical development of vocational education has contributed significantly to high-quality economic development in developed countries. Prior to the emergence of vocational undergraduate education, vocational education in China only reached the technical college level, lacking a complete system that severely limited the development of skilled technical professionals, as noted by literature [2]. With the increasing demand for high-quality technical professionals in China's modern industries and the continuous innovation of enterprise technology, the vocational undergraduate level is now necessary to address the shortcomings of technical colleges in meeting the needs of high-end talents, as observed by literature [3]. Furthermore, national policy documents, such as the Guidelines on Promoting the High-Quality Development of Modern Vocational Education, have set a target task of "ensuring that the enrollment scale of vocational undergraduate education in 2025 is no less than 10% of the enrollment scale of higher vocational education". This reinforces the significance of the development of vocational undergraduate education.

3. Analysis of Current Situation of Vocational Undergraduate Curriculum System

The implementation of vocational undergraduate education began in 2019, and with only a four-year trial period and 32 pilot colleges, it is still in an exploratory stage in China. Therefore, it is crucial to clarify what kind of talent vocational undergraduate education aims to cultivate, how to cultivate it, and for whom to cultivate it in the development of a proper curriculum system. However, there are still some following problems in the probation period of vocational undergraduate education.

3.1. Insufficient Integration between Industry and Education

According to literature [4], the 32 pilot vocational undergraduate colleges have made progress in addressing core issues in vocational education, such as school-enterprise cooperation and industry-education integration. Measures have been taken such as the establishment of industry-oriented colleges, the hiring of enterprise mentors, and the joint development of courses by internal and external teachers. However, there is still room for further improvement in deepening the integration between schools and enterprises. For example, there is a need to explore how to unite government, schools, enterprises, and industry associations to create more successful collaboration. Issues such as how to solve the problems encountered by local industries, how to address the challenges faced by enterprises in production practices, and how to develop a curriculum system in conjunction with enterprise job tasks, all require further exploration and improvement.

3.2. Vague Talent Development Standards

Currently, although vocational undergraduate education has established professional introductions, a complete set of talent development standards has yet to be formed regarding the curriculum system. The vagueness of talent development standards in vocational undergraduate education is mainly due to the need to consider the vocational education properties, which differ from secondary vocational education and higher vocational education. At the undergraduate level, talent development must be in accordance with undergraduate-level training, but with a focus on applied undergraduate education.

Therefore, without a model or template for vocational undergraduate talent development, the standards for talent development can appear vague. To address this, vocational undergraduate education needs to explore suitable talent development standards according to market industry transformations or regional economic development during its trial period.

3.3. Unsatisfactory Effectiveness of Curriculum System for Integration of Industry and Education

Most vocational undergraduate colleges have been upgraded from higher vocational colleges, and therefore their curriculum systems are mostly based on the previous vocational college curriculum system with “some adjustments”. However, due to a lack of corresponding industry research or limited research, vocational undergraduate education lacks an in-depth understanding of enterprise transformation and development. Consequently, there is insufficient integration between schools and enterprises, which has led to curriculum systems being developed mainly by school-based teaching teams. These curriculum systems do not reflect the work tasks of enterprises, and therefore do not feature a strong integration between industry and education. According to Song Yafeng (2020), vocational undergraduate education needs to highlight industry-education integration and construct a curriculum system that involves the joint exploration by enterprise mentors and school teachers[5]. This requires incorporating new enterprise requirements, technologies, processes, and standards into the curriculum system, and aligning the curriculum system with job tasks, in accordance with vocational skill level standards, to ensure that course settings and job positions align. All of these require vocational undergraduate colleges to explore during their trial phases.

4. Construction of Reconstructing Framework of Vocational Undergraduate Curriculum System

The curriculum system is an overall arrangement and layout of courses aimed at achieving talent development goals and standards. For vocational undergraduate education, the curriculum system is not merely a patchwork adjustment or a combination of higher vocational and applied undergraduate curriculum systems. Instead, it requires a disruptive change, focused on employment orientation, job tasks, and reflecting undergraduate-level education and vocational education attributes, as well as clarifying the logical consistency of the curriculum system and conforming to vocational education development rules. Only in this way can the curriculum system for vocational undergraduate education be restructured, distinguished from applied undergraduate education, and meet the needs of society for high-level technological skilled personnel.

4.1. The Principle of Reconstructing Vocational Undergraduate Curriculum System

4.1.1. Attribute of vocational education

According to literature [6], the vocational attribute is an inherent attribute of vocational undergraduate education, and the education system should, therefore, “maintain the attributes and characteristics of vocational education”. Vocational undergraduate education should adhere to its vocational education positioning, deepen “school-enterprise cooperation, industry-education integration, and the combination of theory and practice”, and highlight adaptability to market demand, industrial development, and regional characteristics, starting from employment. Professional construction and talent development should correspond to local economic structural adjustments, meet the needs of local industrial upgrading, serve national and regional strategic demands, and form professional characteristics that reflect “serving the local area, connecting with the industry,

prioritizing capabilities, and coordinating with the school-enterprise”. To do this, it is essential to construct a distinctive curriculum system for vocational undergraduate education, reflecting the diverse development of high-level technological skilled personnel training standards.

4.1.2. Attribute of Higher Education

According to literature [7] the fundamental value of vocational undergraduate education is its higher education attribute. The higher education attribute of vocational undergraduate education is based on industrial demand, starting from the training of students’ ability structure, strengthening students’ innovative ability and innovation literacy, and improving students’ ability and level of solving complex problems in practical processes. Especially in the context of modern enterprise transformation and upgrading, it is essential to improve the quality of vocational undergraduate education’s technological and international teaching content.

4.2. Framework for Reconstruction of Vocational Undergraduate Curriculum System

In accordance with the introduction to vocational education majors of the Ministry of Education (revised edition 2022) and based on analysis of social needs, the requirements of enterprise employers, and professional surveys among vocational undergraduate colleges and universities, Sha Xinmei proposed in 2016 that the talent cultivation system for vocational undergraduates should adopt a “platform + module” curriculum structure. The platform courses primarily consist of public basic courses while the module courses are composed of professional basic courses, core courses, elective courses, and practical courses [8]. The utilization of the “platform + module” curriculum system design can aid in producing highly specialized and individualized talents by consolidating students’ basic knowledge through the platform courses. Subsequently, based on the responsibilities of their future positions in enterprise, different module courses can be designed to promote the professional development of the students in a student-centered manner that emphasizes the cultivation of their unique features and characteristics(As shown in Figure 1).

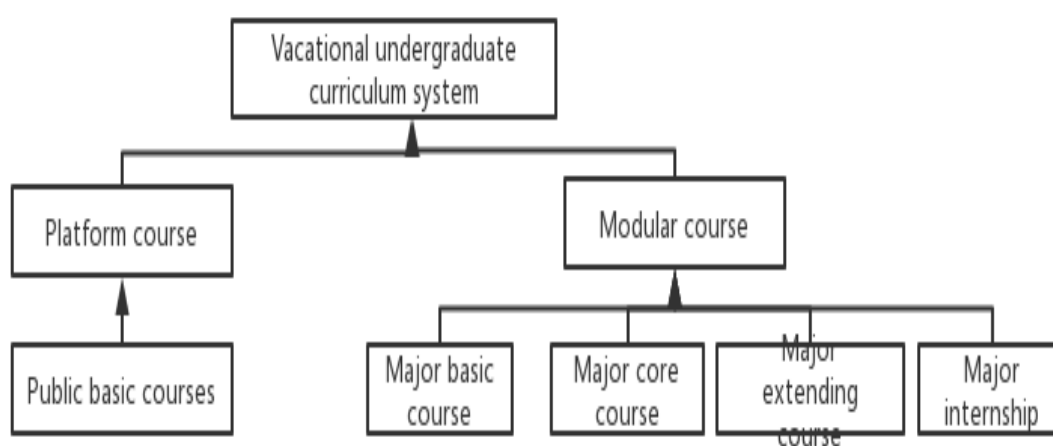


Figure 1: The reconstruction framework of vocational undergraduate curriculum system

5. Reconstructing the Curriculum System for Early Childhood Education Major for Vocational Undergraduates

Table 1: Curriculum system for early childhood education major for vocational undergraduates

		1 st semester	2 nd semester	3 rd semester	4 th semester	5 th semester	6 th semester	7 th semester	8 th semester	
Public basic courses	compulsory	<Morality and Law> <Excellent Chinese Tradition and Culture> <Military Theory>	<Essentials of Chinese Modern History> <Innovation and Entrepreneurship Foundation>	<Introduction to the Basic Principles of Marxism> <Writing and Expression>	<Introduction to the Mao Ze-dong Thought and the Theoretical System with Chinese > <Comprehensive Practice of the Ideal and Political Theory>	<Information Technology Base>				
		<Vocational Plan and Career Guidance>(up)					<Vocational Plan and Career Guidance>(down)			
		<University Physical Education>								
		<University Psychological Health Education>								
		<Situation and Policy>								
		Selective	<Excellent Chinese Tradition and Culture> <English><Writing and Expression>							
		Including Social, Humanity, Arts Science. On line study with 4 scores, off line study with 6 scores								
Major basic courses	Compulsory	<Handwriting> <Oral Expression for Kindergarten Teachers>	<Common Psychology> <Xi Jin-ping' Theory for Education> <Music Theory and Sightsinging>	<Education> <Children's Literature>	<Family and Community Education> <Chinese and Foreign Preschool Education History> <Teaching Tools and Toys Design and Creation in Kindergarten>	<Teachers' Vocational Morality and Education Policy> <Data Technology in Education> <Preschool Methodology Research>	<Preschool Confluent Education>	<Themes for Teachers' Vocational Quality>		
		<Piano(1)(2)(3)><Basic Painting (1)(2)(3)><Basic Dance(1)(2)(3)>								
					<Vocal Music Base(1)(2)>					
Major Core Courses	Compulsory		<Children's Health and Care>	<Preschool Developing Psychology>	<Introduction to Preschool Education> <Guide to Preschool Children's Health Education and Activities> <Guide to Preschool Children's Language Education and Activities>	<Introduction to Kindergarten Courses> <Guide to Preschool Social Education and Activities> <Guide to Preschool Children's Science Education and Activities (Science)> <Creativity and Usage of the Kindergarten's Educational Environment>	<Preschool Behavior Observation and Guidance> <Kindergarten Class Management> <Guide to Preschool Children's Science Education and Activities (Maths)> <Guide to Preschool Children's Arts Education Activities (Painting)> <Guide to Preschool Children's Arts Education Activities (Music)>			
Major Extending Courses	Selective			<Infant Care> <Nursery Care> <Nursery Teacher> <Organization and Management of the Early Care Structures>	<Children's Creative Drama> <Kid's Picture Book Reading> <Montessori Methodology>	<Skills of Kindergarten and Family Communication> <Children's Physical Training> <Kid's Piano Methodology and Practice> <Children's Singing Methodology>	<Positive Discipline> <Comparative Preschool Education> <Certificate of Kindergarten Teachers>(Written Test and Interview) <Training for Entrance Test of the Kindergarten Teacher>	<Fragment Teaching>		
Major Internship	Compulsory	<Teaching Practice>								
								Graduation Design		
								Internship		

In response to the call to vigorously supplement the shortcomings of early childhood education at the national and provincial levels, we have designed the curriculum system for early childhood education majors in accordance with the overall talent cultivation plan for vocational undergraduate colleges and universities. Drawing from the introduction to vocational education majors (updated in 2022), we consider the curriculum to be the fundamental unit within the talent cultivation system, and

adopt a modular approach that adheres to high standards and a high starting point. Our curriculum system for early childhood education integrates a variety of elements, including teacher education, family education, children’s physical fitness training, Montessori education, and inclusive education, to create a distinctively unique and effective approach to talent cultivation, as noted by [9]. To restructure the curriculum, we have employed a “platform + modular” approach, which has helped us to forge a new and distinctive curriculum system that emphasizes the cultivation of student’s information literacy and global perspective. Our program curriculum nurtures students with outstanding practical skills in early childhood education, strong occupational adaptability, and sustainable development capabilities. Graduates of the program are well prepared to work as high-quality, highly skilled kindergarten teachers who are capable of addressing complex issues in their professional practice, such as childcare education, daily life organization and management, and educational research and guidance (As shown in Table 1).

5.1. Public Platform Courses

The public platform courses, which include both required and elective components, constitute an important part of the public basic courses. The required courses encompass 18 different subjects, such as Military Training and Introduction to Marxist Principles, covering moral and legal education, as well as military training. At the same time, to meet the unyielding requirement of maintaining the quantity and study hours of public courses, students can fulfill the 10-credit requirement through the selection of elective courses from the four categories of humanities, art, and natural science, using both online and offline formats.

5.2. Modular Courses

The modular courses consist of professional basic courses, core courses, elective courses, and practical courses. The vocational undergraduate program for early childhood education comprises both theoretical and practical basic courses, with 11 courses, such as Teacher’s Professional Ethics and Educational Policy Laws and Regulations, General Psychology, and Principles of Education, forming the theoretical foundation and 15 courses like Piano Fundamentals, Vocal Fundamentals, Basic Fine Arts, and Dance Fundamentals comprising the practical foundational courses. The core courses aim to reform traditional “three trainings and six methods” education by combining educational content and methods with the characteristics of early childhood development. Students majoring in early childhood education can therefore develop a rational understanding of teaching content and learn effective organizing and planning of kindergarten education activities through these courses. The core courses include Early Childhood Health and Health Care, Early Childhood Developmental Psychology, Introduction to Kindergarten Curriculum, and Early Childhood Health Education and Activity Guidance, among others. The elective courses feature specialized subjects and are designed to provide students with a platform for personalized development. These courses include Creative Children’s Drama, Maternal and Child Care, Positive Discipline, and others, with students required to complete six of the sixteen courses in total. Meanwhile, the “1+X” vocational qualification certificate is integrated with the course certificate in the elective course to achieve an organic fusion. The practical courses are comprised of three main components: educational observation and practice, graduation design, and on-the-job training. Educational observation and practice takes place between the first and sixth semesters, with students conducting off-campus observations and practice in kindergartens for a day, a week, or two weeks through campus cooperation. Graduation design takes place in the seventh semester, and on-the-job training occurs between the seventh and eighth semesters, which are combined with graduation design.

6. Effective Guarantee Measures for the Implementation of Vocational Undergraduate Curriculum System

6.1. Strengthening the Guarantee of Curriculum System Implementation System

According to (Peng, 2019) [10] as part of the measures to strengthen implementation of the vocational undergraduate curriculum system, a crucial step is to refine and enhance relevant regulations. Effective rules and regulations serve as a key driver towards ensuring the successful execution of the curriculum system, consistent advancement in the quality of teaching, and the realization of talent development objectives. Thus, vocational undergraduate institutions must establish a sound system for the quality assurance of teaching, develop mechanisms that provide incentive for and accountability with respect to teaching quality, constitute teaching guidance committees, design regulatory frameworks for teaching management, and develop comprehensive criteria for the evaluation and assessment of teaching performance.

6.2. Strengthening the Guarantee of the Construction of Dual-Qualified Teachers

In order to guarantee the quality and effectiveness of the implementation of a vocational undergraduate curriculum system, it is critical to cultivate a double-qualified teaching workforce that can effectively combine theoretical knowledge with practical skills. As laid out in the Management Measures for the Professional Settings of Undergraduate Professional Education (Trial Implementation), vocational undergraduate programs ought to ensure that at least 50% of their full-time faculty are double-qualified teachers. Furthermore, teachers from front-line enterprises should have substantive teaching responsibilities. Therefore, vocational undergraduate institutions can deepen human resource management system reforms, establish and improve mixed teaching faculties, and improve teacher skills in a variety of ways, such as using “external recruitment and internal training” to strengthen the teaching abilities of teachers. Additionally, vocational undergraduate institutions can utilize policies designed to attract high-level talent from local governments to bring high-level skilled workers to academia, as well as establishing mechanisms for personnel exchange between vocational undergraduate institutions and industry enterprises. By doing so, high-level skilled workers from industry can become part of the teaching staff at vocational undergraduate institutions, ultimately enhancing the quality of the dual-qualified teaching workforce.

6.3. Strengthening the Guarantee of Teaching and Training Equipment and Off-campus Training Base Construction

In order to cultivate skilled technical professionals at the vocational undergraduate level, it is essential to strengthen practical training facilities and equipment, particularly in light of the current status of practical training conditions at such institutions. To this end, vocational undergraduate institutions should invest more heavily in the acquisition and maintenance of cutting-edge equipment and facilities in accordance with the principle of at least 10,000 RMB in teaching and researching equipment per student. Additionally, these institutions must work closely with industry partners in order to acquire the latest technology and training resources that will enable students to gain the practical skills necessary to excel in their chosen professions. Chen proposed that reconstructing the vocational undergraduate curriculum system with a focus on developing students’ vocational abilities is a key aspect of the integration of industry and education [11]. Stable and well-equipped off-campus training centers serve as a critical material foundation for school-enterprise cooperation and a crucial guarantee for the implementation of the curriculum. In light of regional industrial development needs, vocational undergraduate institutions should establish off-campus training centers with multiple

dimensions, including off-campus course training, on-the-job practical training, teacher practice, student competitions, and student training, tailored to the specific requirements of different majors.

7. Conclusions

In conclusion, there is no clear template for the reconstruction of vocational undergraduate curriculum systems, as this is a relatively new area of focus in higher education. Nonetheless, by drawing on the experiences and lessons learned from vocational education at the college and applied undergraduate levels, we can continue to research, innovate, explore, and improve the curricula that will best serve the needs of vocational undergraduate students. In this paper, we have explored the reconstruction of the curriculum system for the Early Childhood Education major at Quanzhou Vocational and Technical University. Although we have gained some insights into the law of curriculum reconstruction, many questions remain that require further research and exploration. Therefore, we look forward to the shared experiences of other vocational undergraduate institutions in their teaching and practices for more effectively cultivating the vocational undergraduate skills needed by regional industry, businesses, and enterprises.

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