

# Research on the Training System of Excellent Vocational Education Teachers at Undergraduate Level under the Background of Integration of Production and Education

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## Abstract

The development of vocational education in China has realized the transformation from level to type, and the ability to serve the major national strategies has been significantly improved during the new era. The purpose is to build a high-quality double-qualified teaching staff, promote vocational education to achieve three docking and combination of education and training. The development of vocational education types urgently needs the support of vocational education teachers training innovation to cultivate excellent vocational education teachers who meet the development needs of new vocational education in the new era. This paper proposes to improve the training of excellent vocational education teachers from the aspects of demand-oriented goal system construction, content system construction with the times and continuous improvement evaluation system construction. The research results provide an important basis and policy support for the theoretical and practical exploration of excellent vocational education teacher education.

## Keywords

Undergraduate Level; Vocational Education; Demand Orientation; Objective Evaluation.

## 1. Introduction

The developed countries have achieved fruitful results in the research and practice of vocational education teacher education, especially in the systematic education of double-qualified teachers [1]. They have formed strict employment standards, clear qualifications, sound training system and perfect selection and employment system. Especially in Germany, where vocational education is well developed, the training of vocational education teachers has gone through dual-ability and professional training, and has moved towards a dual-industry (vocational and professional) stage. Professional standards, certification procedures, and training courses have played a supporting role, forming the characteristics of national leadership, service training, comprehensive ability, strict certification, and integrated curriculum [2].

Domestic scholars have carried out systematic and in-depth research on vocational education teacher education and formed a number of achievements. Meng Qingguo believes that to solve the new and old problems in the construction of vocational education teachers, it is necessary to strengthen the specialized training of vocational education teachers, so that teachers can become professional teachers who can not only teach professional theoretical courses, but also guide skill practice, integrating normality, professionalism and professionalism [3]. Lu Yuzheng and Liu Xiao sorted out the development process of vocational education teacher training in China, emphasizing that in the new era, China should improve the training system and

professional standards, deepen the all-round reform of training mode, and further improve the relevant system of training [4]. Looking at these studies, researchers mostly study from the macro level, and there are few empirical studies. Especially in the new era, what are the characteristics of excellent vocational education teachers, what sub-systems are included in the training system of vocational education teachers, what are the connotations of each sub-system and what are the connections between them, as well as what kind of vocational education teachers should be trained in the new era, how to train excellent vocational education teachers, how to train vocational education teachers with high quality, etc., need theoretical in-depth discussion and active exploration in practice.

## 2. Basic Characteristics of Excellent Vocational Teachers in the New Era

In the new era, the development of vocational education in China has changed from level to type, and the ability to serve major national strategies has been significantly improved [5]. Innovative vocational education teacher training is the basis for vocational education to realize the transformation from level to type development, and to create a modern vocational education system with vertical and horizontal integration [6]. Its purpose is to build a high-quality double-qualified teaching staff, and promote vocational education to achieve three docking and combination of education and training. The development of vocational education types urgently needs the support of vocational education teachers training innovation to cultivate excellent vocational education teachers who meet the development needs of new vocational education in the new era [7]. Vocational education teachers in the new era are different from traditional vocational education teachers. Vocational education teachers in the new era should have the following characteristics [8]:

Vocational teachers in the new era are service teachers. Vocational education teachers in the new era need to actively serve the society and industry, and directly contribute their talents to the community and enterprises [9]. In the new era, vocational education teachers will become an effective force to promote social and industrial progress, rather than a bystander in the pocket. Teachers' active and direct service experience will provide useful experience and environment for training qualified professionals.

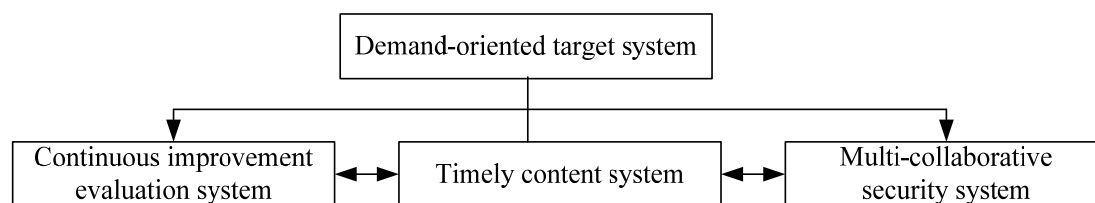
Vocational teachers in the new era are cross-boundary teachers. In order to achieve high-quality teaching, vocational education teachers will shuttle between classrooms, training centers, enterprises and communities, becoming a complex of multiple professional identities and roles. The concept of double-qualified teachers and integrated teachers will gradually lose the market, because these will become the necessary connotation of vocational education teachers [10].

Vocational education teachers in the new era is innovative teachers. Vocational education teachers in the new era will be more creative to enrich the curriculum content, innovative to participate in production process research and workflow research, and guide students to carry out creative and innovative activities [11]. In the new era, due to the huge demand for innovation of the whole society, the teaching and social service activities of vocational teachers will be full of innovation and artistry, not just the reappearance of teaching technology.

Vocational teachers in the new era are international teachers. Vocational education teachers in the new era will take the initiative to respond to the call of firm cultural self-confidence and entering the center of the world stage, re-examine students and daily teaching with an international perspective, and promote the repositioning of Chinese vocational education in the world vocational education system [12].

### 3. Overall Framework of Excellent Vocational Teacher Training System

According to the system theory, the structure of the system determines the function, and the function reacts on the structure. Therefore, from the perspective of the coordination of structure and function, we have constructed a vocational teacher training system consisting of four systems, including target system, content system, guarantee system and evaluation system, as shown in Figure 1.



**Figure 1.** General Framework of Vocational Teacher Training System

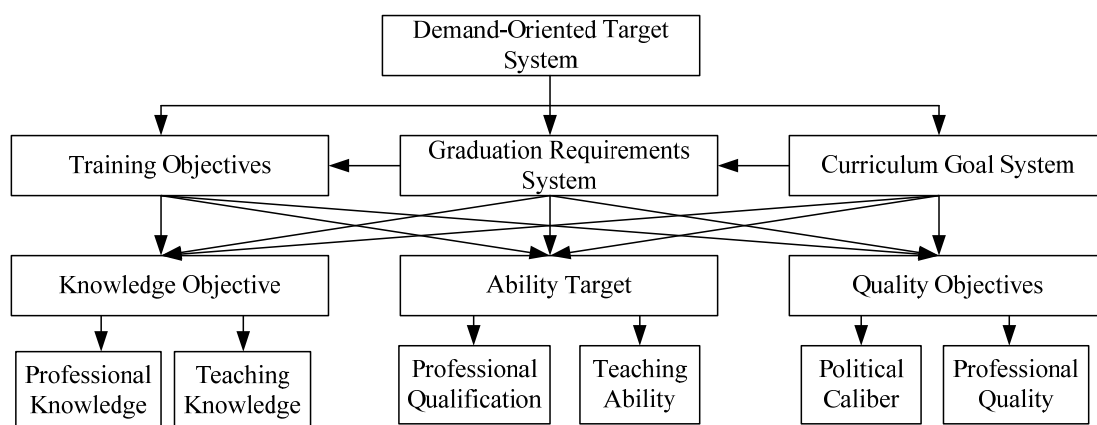
The target system is a system that stipulates the starting point, direction and foothold of the whole vocational education teacher training system. Is what kind of people to train, how to train people, for whom to train people the fundamental problem of higher education specific. The construction of the target system is demand-oriented, and must be based on in-depth investigation and systematic analysis of talent needs, combined with the school and professional talent training positioning for system design; the content system is the core system that stipulates the main training content and organizational implementation methods of the entire vocational education teacher training system, and is the basic guarantee for achieving the training objectives. With the progress of technology and the development of society, the demand for talents in all walks of life changes rapidly, so the construction of the content system of vocational education teachers training must keep pace with the times; guarantee system is the basic system to ensure the smooth operation of the entire vocational teacher training system. Without this system, the training content will not be implemented, and the training objectives will be difficult to achieve. As an open system, the training of vocational education teachers cannot be undertaken by the school alone, but a multi-coordinated guarantee system should be established. The evaluation system is responsible for regulating the control system of the whole vocational education teacher training system to ensure the healthy operation of the whole system. With the iterative update of the target system, the advancement of the content system, and the collaborative optimization of the security system, the evaluation system also needs to be continuously improved and continuously improved.

Because we mainly stand in the perspective of institutions of higher learning as the main body to study and construct vocational education teacher training system, so the system is a limited system, not all-encompassing. Especially about the macro-level vocational teacher education management regulations and policies, although it has an important impact on vocational teacher training, but not included. For example, the recent executive meeting of the State Council decided to promote the reform of teacher qualification for normal graduates and establish a system for assessing the teaching ability of normal students in teacher education colleges. Accelerate the promotion of education master 's degree and above graduates, free normal students exempted from examination to identify teacher qualifications. Carry out the quality audit of teacher education institutions, and the normal graduates who pass the audit can be exempted from the examination to determine the qualification of teachers. These policies and measures are not only good for teacher education institutions, but also put forward higher requirements for teacher education institutions. In most cases, they are not controlled by local education administrative departments, normal colleges, secondary and higher vocational schools, so they are not included in the system.

### 3.1. Demand-oriented Target System Construction

In essence, the training and education of vocational education teachers is different from ordinary normal education and general professional education. It is an organic combination of normal education and professional education. It is a kind of higher normal education with professional, professional and normal integration characteristics. The goal is to train professional courses, practice instructors and teaching management personnel for secondary vocational schools. The training goal is a general description of the career and professional achievements expected to be achieved about 5 years after graduation from school education. The Professional Accreditation Standards for Vocational and Technical Teacher Education " issued by the Teacher Work Division of the Ministry of Education sets the general training objectives for outstanding vocational education teachers as follows: implementing the Party's educational policy, adhering to the socialist direction of running schools, facing the strategic needs of national and regional vocational education reform and development and industrial transformation and upgrading, implementing the national vocational education reform implementation plan and teacher education-related policy requirements, cultivating high-quality professional double-qualified teachers, and implementing the academic certificate and several vocational skills level certificate system (1+X certificate system ) and the national qualification framework reserve teachers.

Although different scholars have different emphases in constructing the talent training target system, some are from the perspective of education level, some are from the macro and micro perspective of the training system, and some are from the boundary of the system. However, considering the external needs and internal requirements of the construction of the target system, we intend to construct the target system of vocational education teacher training from the three levels of training objectives, graduation requirements and curriculum objectives. At the same time, whether it is training objectives, graduation requirements, or curriculum objectives, their specific specifications can be analyzed from the three dimensions of knowledge, ability and quality, as shown in Figure 2.



**Figure 2.** Goal system of vocational education teacher training

In fact, the target system includes not only specific training objectives, but also specific graduation requirements and curriculum objectives. Therefore, it is necessary to refine and design several graduation requirements that can be evaluated under the system of knowledge, ability and quality objectives. According to the certification standards of vocational education teachers and the requirements of ability objectives, it can be divided into four parts: practicing teachers morality, learning to educate people, learning to develop and learning to teach. It formulates clear graduation requirements from 14 aspects: teachers ' moral norms, educational

feelings, craftsman spirit, professional knowledge and ability, professional practice ability, teaching ability, integration and innovation, class management, comprehensive education, vocational guidance, independent learning, reflective research, international vision and exchange and cooperation. Furthermore, for each course, it is necessary to formulate scientific and reasonable curriculum objectives that can be evaluated and measured in the syllabus, and to support the graduation requirements in a clear way.

### **3.2. Construction of Content System Keeping Pace with the Times**

Goals determine content, and content serves goals. As mentioned earlier, the content system is the core of the talent training system, and there is no content to talk about the cultivation of talents. In order to achieve the training objectives of excellent double-qualified vocational education teachers with all-round development of morality, intelligence, physique, aesthetics and labor, the graduation requirements of 'having teachers' morality, teaching, educating and developing and the specific requirements of curriculum objectives, it is necessary to scientifically design the content system that keeps pace with the times

The essence of advancing with the times is that with the rapid progress of science and technology, especially the rapid development and in-depth application of new technologies such as big data, intelligence, mobile Internet, cloud computing, Internet of Things, and block chain, new industries, new formats, and new models are constantly emerging. Although the training goal of vocational education teachers is not directly industry-oriented, it is to cultivate high-quality skilled talents needed for industrial development. This requires that the training content of vocational education teachers must keep up with the development of industry and technology and keep pace with the times.

The content system of vocational education teacher training is mainly composed of curriculum system, teaching material system and method system. The curriculum system is in the core position, which stipulates the main training content, determines the problem of what to teach and what to learn, and is the basic guarantee to achieve the goal of education and teaching. Textbook system is an important carrier of containerization and formalization of curriculum standards and curriculum content, and is the main reference for teachers teaching and students learning. Method system is how to more effectively achieve the course objectives means to determine the how to teach and how to learn problem.

Curriculum system mainly includes general education curriculum system, subject curriculum system, teacher education curriculum system and comprehensive development curriculum system. In addition to the traditional general education courses or public basic courses such as ideological and political theory courses, college English, and physical education, the general education curriculum system should also be guided by the all-round development of people, scientifically develop and rationally set up a general education curriculum system, and basically cover science, technology, humanities, history, culture, art and even life, health and other fields. The curriculum system of discipline specialty is a curriculum system to cultivate students' professional knowledge, ability and accomplishment, while the curriculum system of teacher education is a curriculum system to cultivate students' educational teaching knowledge, ability and accomplishment. The curriculum system of comprehensive development is a curriculum system to cultivate students' comprehensive ability based on the combination of specialty and education.

To construct the curriculum system of vocational education teacher training, we first need to deal with the proportional relationship between the four major curriculum systems and the proportional relationship within the various curriculum systems. On the basis of meeting the requirements of professional certification standard of vocational and technical teacher education, the proportional relationship can be reasonably allocated according to the specific training objectives and graduation requirements. We should also optimize the curriculum



setting within various curriculum systems. For example, to scientifically allocate the proportion of theoretical courses and practical courses, we should not blindly enlarge the practical courses because of the emphasis on the cultivation of skills and abilities. At the same time, it is necessary to do a good job in the connection and integration of the four major courses, especially the professional courses and teacher education courses. Although the subject professional courses and teacher education courses are relatively separated in the system, the setting of curriculum content must be well connected and integrated. For example, through the study of professional courses, students should not only learn technical skills, but also learn how to teach technical skills, so professional courses must be integrated into the content of teacher education. Similarly, the focus of teacher education curriculum is to cultivate students' teaching ability, but not on teaching theory teaching, but should be how to teach professional knowledge and skills into the teacher education curriculum.

The textbook system includes school-enterprise cooperation textbook construction system and school-school cooperation textbook construction system. Due to the particularity of the training of vocational education teachers, it is necessary to take the road of cooperative construction of teaching materials when constructing a teaching material system suitable for the curriculum system, especially the teaching material system suitable for the subject curriculum system and teacher education curriculum. In the construction of teaching materials for professional courses, it emphasizes the cooperation between schools and enterprises, and intends to integrate the latest technology, mode and management of enterprises into the teaching materials in time, so as to make the teaching materials and courses keep pace with the times. In the construction of teaching materials for teacher education courses, the cooperation with vocational colleges is emphasized, because the goal of vocational education teacher training is to train teachers in vocational colleges. Only by clarifying the school situation, learning situation and specific teaching and management requirements of vocational colleges and incorporating them into teaching materials can the course teaching be more targeted.

### **3.3. Construction of Continuous Improvement Evaluation System**

The purpose of evaluating the talent training system is to test the effectiveness of the implementation of the training content and the achievement of the preset goals, thus forming a closed loop of the orderly operation of the entire training system. The reason why we emphasize the characteristics of continuous improvement of the evaluation system of vocational education teacher training is that there are two considerations: first, under the premise of reasonably setting the training target system, the achievement of the goals at all levels is a gradual process. In the process of achieving the goals, it is actually a cycle of 'making plans, putting them into practice, checking the effects, and incorporating them into the system', which reflects the process of continuous improvement and improvement of the entire system. Second, whether it is the setting of training objectives, or the formulation of graduation requirements, or the determination of curriculum objectives, are not achieved overnight, will change with the change of demand, because the training content system needs to be constantly updated, the training target system needs to be constantly improved, which requires the evaluation system itself to continue to improve.

The continuously improved evaluation system of vocational education teacher training consists of internal evaluation system and external evaluation system, and forms a mechanism for the coordinated operation of internal and external evaluation systems. Internal cause is the basis of the development of things, external cause is the condition of the development of things. The internal evaluation system is the basis of the whole evaluation system and plays a decisive role. The external evaluation system works through the internal evaluation system and promotes the improvement of the internal evaluation system. The internal evaluation system is mainly composed of the evaluation system of the achievement of curriculum objectives and the

evaluation system of the achievement of graduation requirements, which is mainly the evaluation completed by students during the training period in the school. At the same time, the achievement of course objectives ensure the achievement of graduation requirements. The external evaluation system is mainly to establish a graduate tracking feedback system and a social evaluation system with the participation of relevant stakeholders outside the university, and to regularly and systematically evaluate and analyze the achievement of training objectives.

#### 4. Conclusion

Schools and governments should strengthen the transformation and upgrading of the teacher training system, standardize the training behavior of teachers, strengthen the value of school-based training for teachers' professional development, and enhance the endogenous motivation of teachers' own development, which are all important measures to promote the development of teachers in vocational colleges. Through multi-channel exploration efforts, the professional teacher development system will be more professional and mature, which can better promote the implementation of the integration of industry and education.

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