The Research and Practice on Curriculum System of "Integration of Knowledge and Practice" in Teacher Education

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Keywords: Knowledge and practice, Teacher education, Curriculum system, Vocational education teachers.

Abstract: Based on the orientation of TUTE and the requirement of vocational education, this paper introduces the construction process, theoretical background and concrete curriculum structure of the curriculum system of "Integration of Knowledge and Practice" of teacher education, taking the School of Mechanical Engineering as an example. The connotation of excellent vocational education teachers is analyzed, and the concrete implementation method of curriculum system is expounded.

Introduction

Tianjin University of Technology and Education adheres to the training objectives of "normalization, professionalism and academicity", and the conception of all-round development of hand and mind, and is committed to the goal of carrying out excellent teachers for the vigorous development of vocational education. The quality and the level of training for the entire vocational education in the field of development and quality of personnel training, even the development of China's economic and social development there is a far-reaching impact.

A Study on the Mechanism of Improving the Teaching Level of Vocational Education Teachers

To improve the skill level of vocational education teachers, we need to construct the three levels of educational and teaching mechanism from the individual level, the faculty level and the school level, and explore the skills as a teacher. In order to reflect the requirements of normal characteristics, since the 2005-06 school year, Mechanical Engineering of TUTE in the professional training programs have added the normal skills training links, and mechanical discipline teaching methods, educational practice that constitutes a relatively complete teacher Skills training curriculum modules, but the courses are relatively separate between the single subjects that lack of internal relations with each other. In view of the composition and formation characteristics of teachers' professional ability, the course team integrates and re-designs the teacher's practical training course, the micro-teaching, the educational practice, the extracurricular competition and other daily education and teaching activities. Forming the whole teacher's education line of knowledge and integration curriculum chain. From the connotation of the formation of teachers on the professional competence of the curriculum content and the allocation of resources on the overall layout and the teaching model and teaching methods that applied into the team teaching, we use the flip classroom, network teaching, exchange discussion, competition and other teaching methods to refine, integrate and develop the corresponding teaching resources package for all sorts of subjects, which greatly enrich the whole Curriculum system of teaching resources and enhance the teaching level. In the replacement training program of Union school of TUTE, it's perfected by the education
practice of the relevant guidance and management mechanism step by step. The course of teaching and extracurricular activities, including teachers and students at two levels of competition and exchange, school-related activities Resources for an effective combination, further strengthen the students' practical ability.

**The Introduction of Curriculum System--Integration of Knowledge and Practice**

The curriculum system emphasizes that students should learn, think, do in the way of learning, do a high degree of unity in learning and doing things in the way of being a useful person. It does not refer to each of these courses, but the overall teaching system design that reflects the concept of unity of knowledge and practice [1][2] which is the theoretical understanding and action experience a high degree of unity. But according to the different tasks and nature of the course, in the specific implementation of the course of teaching tasks in the process, for the unity of knowledge and practice, that is, co-ordination, but also focused, the core task is to solve the problem of practical ability of teachers in vocational education when they are working.

Since 2012, the course group has set up a series of measures to improve the comprehensive practical ability of vocational education teachers on the basis of the existing curriculum of the Teachers' Skills Module of the Mechanical Engineering Institute, concentrating on the macro training objectives of "Teacher Education Practical Ability Training" Education, has constructed knowledge and integration of the curriculum system, including the curriculum to observe, teacher skills training, all aspects of practice courses, mechanical discipline teaching methods (including micro-teaching) and education practice, normal students related skills competitions. Teacher skills training in all aspects of the different accords to the nature of the professional, including writing and expression skills training, modern education and technical training, class teacher ability training. In order to ensure the effective teaching and teaching of the course group, we should, in the course of teaching research and curriculum system promotion, rely on the teachers' teaching and research department of the teaching and research platform, and arrange in a combination of regular the college teaching and research activities summary and exchange records.

**The Practical Significance of the Research and Practice of Curriculum System**

(1) Based on theoretical research, educational practice and the development of vocational education, the connotation of knowledge, ability and character of qualified vocational education teachers is defined.

Table 1 shows the different points of vocational education teachers in the teacher education curriculum system corresponding content. Normal refers mainly to the cultivation of teachers are indispensable special courses and requirements, specifically that refers to the teacher professional ethics, education related courses and some basic skills, skills and organizational management ability. The essence of the ability to cultivate their ability to work in the post, it’s still in the performance of their teachers involved in the activities of the activities of the show. Therefore, the teacher education should also do things (do education and teaching things) as the carrier, emphasizing the unity of life and work, ability training and moral development is still very important. The goal of the whole curriculum system is to cultivate vocational teachers with job competence and development ability. Its ability system includes classroom teaching ability, education writing ability, expressing ability, ability of class management, education information technology application ability, teaching and researching ability, good occupation and humanistic accomplishment. [3] In the actual teaching process, we need for knowledge and ability to combine the teaching process to carry out specific teaching design.
Table 1. Competency Training Support Course and Training Guidance.

<table>
<thead>
<tr>
<th>No</th>
<th>competency project</th>
<th>corresponding course</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>writing ability</td>
<td>writing and expressing ability training, skill competition</td>
</tr>
<tr>
<td>2</td>
<td>writing and expressing ability</td>
<td>writing and expressing ability, modern education technology training, subject teaching method (including micro-teaching), education practice, skills competition, daily counseling</td>
</tr>
<tr>
<td>3</td>
<td>application ability of modern education technology</td>
<td>subject teaching method, education practice, skills competition</td>
</tr>
<tr>
<td>4</td>
<td>class management ability</td>
<td>teaching observation, writing and expression ability training, class teacher ability training, education practice</td>
</tr>
<tr>
<td>5</td>
<td>classroom teaching comprehensive ability</td>
<td>teaching observation, writing and expression ability training, modern education technology training, class teacher ability training, subject teaching method, education practice, skill competition</td>
</tr>
<tr>
<td>6</td>
<td>teaching research ability</td>
<td>subject teaching method, education practice, skill competition, participation in teacher activities</td>
</tr>
<tr>
<td>7</td>
<td>Professional ethics and humanistic accomplishment</td>
<td>education teaching</td>
</tr>
</tbody>
</table>

(2) Deeply grasp the connotation and characteristics of excellent vocational education teachers, construct a complete curriculum system which is progressive, knowledge, practice, design and match the implementation strategy. Starting from the inherent law of education and teaching. It had better form an organic whole between the relatively isolated courses, and ensure the dynamic operation and gradual adjustment of the curriculum through continuous monitoring, evaluation communication and feedback. Before 2012, although all courses are part of the curriculum skills modules, they are relatively independent. Such as the normal skills training 3-1 (writing and expression skills training) as a practical link to directly complete the task of practice-based, explaining the content and training content is for writing, reading and speaking, which is obvious to the development of express ability. In addition, there is lack of correspondence between other competency points for teachers' practical skills. Mechanical science teaching method is given in micro-grid and the form of comments, teaching content and knowledge points is also rich, but the theoretical knowledge and before and after micro-teaching there are still out of touch that need to be further improved. On the whole analysis, each course has its own emphasis, because of its single and the continuity of the corresponding ability point, that is, the lack of curriculum and curriculum between the internal association and unity, from the understanding of the law and the formation of capacity, which is still a relatively large room for improvement. The teacher's normal skill competition has a great effect on the improvement of students' ability and comprehensive exercise.

(3) We should advance to carry out education, teaching reform, innovation, actively and steadily from a single course and the overall system, from the depth and breadth, including the teaching organization and the reform of teaching mechanism. Relying on the curriculum to carry out standardized Chinese characters writing, Mandarin, and applied writing training, can train skills of student basic teaching. Relying on classroom teaching, the second class, teacher and student competition emphasizes comprehensive, abundant, and full of skills training. Relying on educational practice for comprehensive training starts skills guidance, training, assessment of integration methods, to build a comprehensive and professional characteristics of the teacher vocational skills training system. Through the optimization of the curriculum portfolio, we make the "theory to practice, class to extracurricular, practice to practice, observe to reflection, training to the assessment" combination of teaching system.
The ability to cultivate teachers’ practical ability and life-long learning requires the in-depth study of the standard of vocational education teachers and the needs of vocational schools. This work should be with the vocational schools to maintain frequent and good communication and mutual assistance, such as in-depth understanding of vocational school teachers and the actual needs of the work level, analysis of various vocational schools to explore an effective way to vocational schools to carry out relevant training and publicity, for the training measures of the teachers and students in our school and the promotion of the reform of the training mode.

(4) For new standards of education and teaching of Integration of Knowledge and Practice, we make good use of the network teaching, flip the classroom, project training, skills competitions, traditional teaching, extracurricular activities and other educational methods effectively for taking to the various courses of teaching. Because of their own characteristics, students often lack the correct understanding of the importance of teachers' professional competence before they are not employed, and the energy of the interest and investment is limited. Only when they come to the education practice, the students realize the importance of teachers' professional ability and their own shortcomings. Facing the continuous development of vocational education, teaching teams in response to the effective development of vocational education on the actual requirements of vocational education teachers, constantly promote the education and teaching to effectively stimulate student interest in the direction of development, and guide students to lay the foundation for capacity.

(5) Expanding the channel of the education and teaching activities between teachers and students advances the growth of teachers and students of the interaction, for the development of pre-cultivating and post-training. Solving the linkage between internal activities and extracurricular activities makes formation of long-term curriculum mechanism.

Summary
"Integration of Knowledge and Practice" the integration of teacher education curriculum system in the curriculum and teaching level, to better solve the "emphasis on cognition, ignorance of action" and "Separation of cognition and action" and "Emphasis on personal efforts, ignorance of teamwork" and "Emphasis on knowledge heredity, ignorance of the pioneering cultivation" and other issues. In the aspect of curriculum construction, the scientific, normative and effective development and implementation of the integrated curriculum of knowing and doing are improved, and team teaching and collaborative education are emphasized. It has some enlightenment to the reform of teacher education.

Acknowledgement
Relying on the project: the common project of Research on Teaching Reform and Quality Construction in TUTE (Project Number JGY2015-04); The major project of Research on Teaching Reform and Quality Construction in TUTE--Research on the Reform of Talents Training Mode of Mechanical Application Undergraduate (Project Number. JGZ2015-01).

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