

## Research on Improving Teaching Ability of Automobile Engineering

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**Abstract.** Teachers' teaching ability is an important factor influencing the quality of teaching. During the teaching which aims at skills training, teachers' ability is the bottleneck of restricting the personnel quality of higher vocational colleges. This paper analyzes the current situation of teachers' teaching ability in vocational colleges and the demand of teachers' teaching ability in skills teaching, combines with the actual situation of vocational colleges, thus puts forward the ways and strategies to enhance teaching ability of teachers in the teaching of skills.

### Introduction

In recent years, with the transformation and upgrading of the industrial structure of the automobile industry, the demand for talents in the automobile industry is constantly changing. Higher vocational education shoulders the important task of cultivating skilled talents in industrial transformation. Higher vocational education takes employment as the orientation, aims at cultivating the application and technical talents of producing and managing first-line service, and highlights the practicality and occupation of teaching. The School of Automotive Engineering has adhered to the concept of "school-enterprise cooperation, combination of work and study" for many years, not only forms a "school-enterprise integration" talent-training mode, but also continuously explores and researches the ways and strategies to enhance teachers' teaching ability in skills teaching, to promote the improvement of teaching quality, and form "double-qualified teacher" team with practical skills and core competitiveness.

### Analysis of Teachers' Necessary Ability in Skill Teaching

**The Structure and Characteristics of Teachers in Higher Vocational Colleges.** From the composition of the faculty, the professional structure of the professional institutions is: some young teachers who graduated from engineering universities go directly into school without business experience or teaching experience; some young teachers who graduated from the higher vocational and technical college have certain production Practice and teaching basis, but on the curriculum development and practical integration teaching, it is difficult for them to work independently; other teacher come from enterprises to school, they have production practice skills, understand production process, and master production technology skills; the number of this part of the teachers are less in vocational colleges, and even difficult to introduce, but it is indeed wanted teachers in vocational colleges.

Vocational education has clear "professional" characteristics, that is to cultivate the high-skilled personnel, pay more attention to the cultivation of skills. The teaching ability of teachers in vocational education is characterized by the universality of teachers, they have the basic teaching ability of teachers, and also they have the particularity of vocational education--they master production technology and practical skills.

**Analysis of Teacher 's Necessary Ability in Skill Teaching.** China 's modern vocational education proposed three dockings of "professional settings and industrial needs, curriculum content and professional standards, teaching process and production process". Modern vocational education not only

puts forward the requirements of professional setting and school management policy, but also puts forward new requirements for the teaching ability of professional teachers who participate in the curriculum reform and finish the skill teaching work.

The docking of curriculum content and professional standards has requirements towards teachers' practice teaching and curriculum development capabilities. It requires that teachers should understand the industry dynamics and professional standards, and incorporate the enterprise standards into teaching content. From the perspective of curriculum development, teachers are required to develop courses according to the standards of enterprises, and integrate the skills and knowledge points which enterprises' need into the teaching content. Teachers are required to transform the work situation into learning situations and learning tasks.

Docking of teaching process and production process has requirements towards the teacher's production management and teaching design, teachers are required to have capabilities of production guidance and on-site management, be familiar with the product's production process and processing technology; operate equipments for process testing, technology development and technology Innovation; based on the needs of professional competence, they can integrate teaching content and design teaching process and learning tasks, to achieve integration teaching of teaching, learning, training, practice, and making. To have a strong professional and technical application ability, vocational skills and practical experience is the most basic requirements of vocational college teachers.

### **Methods to Promote Teachers to Enhance Teaching Ability**

**Enhance The Philosophy of Skills Teaching.** The teaching team of school-enterprise cooperation is based on the teaching work of school-enterprise cooperation class, and the teaching team is composed with school teachers and business trainers and experts, they develop teaching plans, curriculum, complete the teaching tasks, and complete teaching evaluation of teaching team. During this teaching mode, school-enterprise cooperation team can not only complement each other in teaching, but also play a catalytic role in improving teachers' teaching methods. This kind of cooperation teaching mode in which both school and enterprise can participate in teaching, can make the school teachers understand the corporate culture quickly, learn the combination of teaching and working, quickly grasp the teaching methods suitable for vocational skills teaching, and practice in the usual teaching.

**Promote Curriculum Development Capabilities.** Modern vocational education requires that school teaching should determine the teaching content and training process from the employment standards of enterprises, in teaching a comprehensive teaching project is used as the carrier, multi-courses are integrated, the theoretical teaching content and practice training are combined to achieve teaching of integration of theory and practice. Developing project teaching carrier is that, through teachers' research in enterprise, first-line technicians of enterprises demonstration courses. Teachers should consider many aspects from the course content to knowledge needs of enterprises, from the practical training of course to the work scene of enterprises, from the process assessment of courses to the enterprise's work standards, etc. combining with the project carrier, develop teaching materials and design curriculum, to realize teaching materials and skills docking, curriculum and post docking. The development of courses not only makes the teachers grasp the curriculum in their field, but also gradually forms the teacher's individual teaching style and characteristics in the development process, and improves effect of skills teaching ability and the teacher's curriculum development ability The

**Enhance the Production Practice Ability.** In fact, teachers' practice in enterprises is that schools make use of school-enterprise cooperation units, and arrange first-line professional teachers to go to enterprises to participate in production practice, production management and business training. This kind of teachers' practice in enterprise is different from the teachers' visit in enterprises; through the teachers' long-time practice in production, teachers not only improve their practical skills, but also deep into the line to understand production organization form of enterprises, observe and summarize key points of operational skills, expand teaching ideas, so that production line and teaching and research can be linked.

**Develop Scientific Research Capacity.** Skills research studio is a project which takes enterprises as main body and is based on vocational colleges to enhance scientific research skills, and it's also a scientific research cooperation model on the purpose of develop high-quality and highly skilled personnel for enterprises and schools. Skills research studio which is established by enterprises and vocational institutions, will create conditions to carry out technical training, technical research, technical skills innovation and impart skills to apprentice for highly skilled personnel, and speed up inheriting and promoting experience of scientific research and results of technical skills innovation.

Scientific research studio establish a resource-sharing platform for the two sides; first, teachers start being trained, then schools and enterprises form a technical team together, driving teachers to participate in technological innovation and improve practical skills while completing technology research of enterprises; teachers share part of the technician project, participate in technical research, and gradually form a school science and technology research and development team.

### Identification and Discussion of Skilled Teachers

Modern economic development put forward a suggestion for vocational education, " integration of production and education, school-enterprise cooperation", it is not only an objective requirement, but also the internal needs of development of vocational colleges. The teaching ability of teachers will be the bottleneck of the development and promotion of vocational education. The vocational colleges are actively guiding and cultivating the skilled teachers, but how to identify the skilled teachers and how to make the skilled teachers play their real role are the subject of the study in vocational colleges.

There are no national standards or more mature research results about how to identify the skilled teachers. According to the needs of vocational education for personnel training, professional construction, curriculum construction, course teaching and skills training, the identification of skilled teachers is reflected in the three aspects of qualifications, professional skills and teaching qualifications. First of all, as a skilled teacher, he should have complete knowledge reserve of a discipline, seen from the academic education of our country, he should at least complete undergraduate education, at the same time have qualifications of teachers; second, concerning the requirements of teachers' skills, teachers can operate teaching equipments, have the ability to solve common problems in actual production, and have certificates of vocational skills; the third point is a higher demand for teachers, skilled teachers should not only have rich of teaching experience and the ability to transform work process into the teaching context.

### Summary

In vocational colleges, practice and skill-based teaching characteristics require practical and skilled teachers' team structure, training and identification of skilled teachers are two most important aspects of teachers' team construction in vocational colleges, how to handle the relationship between the two aspects, not only related to the direction of teachers' future development, but also related to the enthusiasm of teachers. The training and identification of skilled teachers is the key to breaking through the bottleneck of vocational education development and the subject of long-term research.

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