

# Analysis on Teaching Strategy of Construction Machinery Specialty with Ability Training as the Core

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**Abstract:** The purpose of engineering machinery specialty in colleges and universities is to cultivate high-quality engineering and technical talents, which is highly practical and professional. In the process of education, we should pay attention to combining the employment market, students' career development and other factors, adhere to the ability training as the core to carry out teaching activities, and constantly improve the comprehensive ability and quality of talents.

**Keywords:** Ability Training as the Core; Construction Machinery Specialty; Teaching Strategy; Analysis

In the new era, with the rapid development of engineering technology, the requirements for engineering and technical personnel are also increasing. Students are required to lay a solid foundation for their major. At the same time, they can also cultivate the concept, ability and habit of lifelong learning, improve their comprehensive ability, and become high-quality engineering and technical personnel. In the following, the ability training as the core of the teaching of construction machinery is discussed.

## 1. In depth analysis of professional post ability to clear talent training objectives

Professional ability involves professional ability and key ability. Professional ability is to cultivate the ability of knowledge for application, and to solve practical problems by using professional knowledge in practical work. The key ability, including the general ability and the ability to adapt to different occupations, is to impart knowledge, cultivate ability and quality, and realize the mutual promotion and coordinated development of the three. Under the new situation, the construction machinery professional curriculum system with ability training as the core should pay attention to the in-depth analysis of the relationship between professional knowledge, professional ability and professional quality, and focus on the theoretical knowledge teaching work at the same time of training professional ability, so that students can know their own professional ability and quality.

In order to better cultivate the professional ability of students majoring in construction machinery, and the teaching of construction machinery can serve the industry development and enterprise development, colleges and universities should deepen the mode of school enterprise cooperation, carry out market research on post group, post ability and knowledge through leading enterprises in the industry, and timely grasp the changes of labor structure, professional ability and quality caused by the application of new technologies and new processes in the construction machinery industry. Combined with the actual situation of colleges and universities, the construction machinery professional ability module library is established, and based on the actual situation of many factors such as post group and professional ability analysis, the talent training objectives of engineering machinery specialty are clarified, and a perfect professional curriculum system is constructed.

## 2. Optimizing teaching content and innovating teaching mode

With the application of new technology, new process and new concept in construction machinery industry, the traditional

professional teaching and practice has been unable to meet the needs of practical development. Under the new situation, colleges and universities should keep pace with the times, optimize the teaching content, and infiltrate new technology, new technology and new concept in the teaching process of construction machinery specialty. Secondly, with the rapid progress of modern manufacturing technology, the traditional examination oriented education system has been unable to meet the requirements of industry development for talents. Based on this, we should implement the integration of theory and practice teaching mode, increasing the proportion of practical teaching and reducing the theoretical teaching hours, and innovate teaching methods. For example, in the explanation of “machine tool” related knowledge points, teachers fully respect students’ teaching subject status, adopt group cooperation teaching method, and require each group of students to independently design scheme in the course design, then compare the schemes of each group, so as to increase the interaction between teachers and students, and change the disadvantages of the traditional “indoctrination” theoretical explanation mode; for example, in the explanation of “hot and cold processing method” related knowledge, in order to effectively improve the quality and level of teaching, teachers adopt practical teaching method to cultivate students’ ability of transforming theory into practice in practice, so that students can establish accurate cognition of manufacturing technology in their personal experience. In addition, when carrying out practical teaching, teachers should keep pace with the times, master the current situation of the development of mechanical market, and understand the teaching situation of mechanical engineering discipline, so as to appropriately infiltrate advanced technologies such as new material technology and numerical control processing technology, by enriching teaching content and expanding students’ knowledge, to guide students’ divergent thinking through the integration of theory and practice, and cultivate students’ logical thinking and creative thinking ability, achieving all-round development.

It is worth mentioning that in the teaching process of construction machinery specialty with ability training as the core, we should not only attach great importance to practical teaching, but also speed up the reform of practice teaching. Under the new situation, when carrying out practical teaching, highlighting professional characteristics should be to cultivate students’ professional practical ability. Colleges and universities should pay attention to the cultivation of social professionals, professional basic theoretical knowledge and the practical work of construction machinery in the uprising, deepen the cooperation mode of production, learning and researching to build a perfect practical teaching system, for the cultivation of innovative spirit and ability of talents. Teachers can also use advanced multimedia technology such as video, animation and other carriers to show students practical skills and operation steps intuitively, so as to reduce students’ understanding difficulty, activate teaching atmosphere and concentrate students’ classroom attention. Secondly, teachers can organize students to watch various professional teaching images, broaden their horizons and expand their knowledge, so that students can correctly understand the importance of construction machinery practice in modern manufacturing industry, realize the importance of learning, and constantly enhance learning interest and confidence, fully mobilizing learning enthusiasm and initiative, continuously improving teaching quality and level as well as students comprehensive quality and quality.

### **3. Fully respecting the students’ dominant position in teaching and actively carrying out various extracurricular activities**

In the teaching process of construction machinery specialty with ability training as the core, in addition to the teaching of theoretical knowledge and practical skills, colleges and universities should set up many elective courses related to specialty such as electronic design and product modeling design according to the actual situation; we should actively carry out various extracurricular practical activities to let students participate in it, communicate in practice, and constantly stimulate their professional learning interest and enthusiasm, so as to organize students to carry out or participate in a variety of professional practice activities that are conducive to the healthy development of body and mind, enriching knowledge reserves, broadening horizons and effectively cultivating sentiment; we should also carry out independent design, independent experimental practice and other practical teaching activities that fully respect the students’ teaching principal position, cultivate students’ comprehensive ability and improve their comprehensive quality; in order to effectively broaden students’ horizons, colleges and universities should actively create various opportunities and platforms to guide students to participate in various scientific research, organize academic exchange activities and students to participate in professional skills competition, innovation and entrepreneurship competition, and guide students to participate in various scientific research activities, so as to realize the effective combination of theory and practice, cultivate students’ ability to apply what they have learned, and become high-quality talents to meet the demand of the social development.

## 4. Paying attention to the construction of “double qualification” construction machinery professional teachers

First, as we all know, teachers are one of the core factors that affect the quality and level of construction machinery professional training. First of all, under the new situation, colleges and universities should pay attention to building “double qualified” teachers. We should deepen school enterprise cooperation mode, adhere to cooperation with enterprises in running schools and jointly cultivate talents. We can employ some leading enterprises, backbone enterprises production line of senior technical personnel to colleges and universities part-time teachers, pay attention to the practice of teaching links, and participate in the students’ curriculum design, graduation design and other work, to change the traditional exam oriented education system of engineering project design and manufacturing and other teaching links, so as to make engineering machinery professional practice teaching and enterprise production front line close contact, so as to better cultivate students’ engineering practice ability and core literacy. Secondly, it is necessary to improve the access threshold of teachers, pay attention to the recruitment of some young teachers with high education background, outstanding professional level and solid teaching ability, so as to inject fresh blood into the current teaching team and optimize the existing teacher team structure; secondly, we should strengthen the training of on-the-job teachers, guide the majority of professional teachers to establish the concept of lifelong learning, and timely learn new technologies, new ideas and new jobs in the professional field art, to constantly improve the level of teaching. In this way, it is conducive to create a “double qualified” teacher team and constantly enhance the existing teachers.

Second, we should create opportunities for teachers to study in enterprises and take up temporary posts. In the process of school enterprise cooperation, colleges and universities should pay attention to creating more opportunities for teachers with high education background and outstanding teaching level, but lack of practical experience to go to the enterprise for further study or temporary training, so as to enable them to participate in the enterprise production management process in an all-round and multi angle way. This is conducive to enhancing their engineering practice ability and urging these teachers to obtain professional titles related to their major.

Third, we should strengthen the teaching staff through the school enterprise cooperation platform. Under the new situation, colleges and universities in the process of school enterprise cooperation should pay attention to contact enterprise production management, internship and other platforms to enhance the teaching staff, some young, backbone professional teachers and enterprise part-time teachers together become student practice guidance teachers, and participate in teaching activities together, so as to cultivate students’ engineering practice ability and enhance professional teachers’ engineering practice ability, in order to cultivate high-quality talents, and improve the sustainability of education.

## 5. Conclusion

To sum up, the construction machinery professional teaching with ability training as the core is an important guarantee to cultivate professional and innovative compound talents meeting the needs of social development. Based on this, colleges and universities should pay attention to changing teaching concept, enriching teaching content, innovating teaching mode, paying attention to increasing the proportion of practical teaching, creating “double qualified” teachers, and finally improving the quality and level of talent training.

## References

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