

Analysis of practical strategies of engineering training in Colleges and Universities under the new engineering construction

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Abstract: with the continuous acceleration of the integration of artificial intelligence technology and various industries' technologies, the society gradually tends to be intelligent and digital. The intelligent transformation of various industries has realized the optimization of production mode and the improvement of product structure, and promoted the transformation of China from "made in China" to "made in China". In the environment of new engineering construction, colleges and universities should pay attention to carrying out engineering training, build a perfect practical teaching system, so as to cultivate students' engineering consciousness and practical ability, promote the development of students' comprehensive quality, and cultivate more excellent reserve engineers for national construction. Based on this, this paper analyzes the practical strategies of engineering training in Colleges and Universities under the new engineering construction, in order to provide reference for educators.

Key words: new engineering construction; Colleges and universities; Engineering training; Practice strategy

Introduction: the rapid development of the intelligent manufacturing industry has increased the demand for the ability of relevant talents, and the construction in the new period needs compound engineering talents with strong engineering practice ability and ability to master various new technologies. As a place to deliver high-quality talents to the society, colleges and universities should pay attention to integrating the introduction technology of intelligent manufacturing industry into the practice training while cultivating students' professional skills, so as to cultivate students' innovation ability and engineering practice ability, and promote students to better adapt to the development of the industry. Practical engineering training is an important way to consolidate and deepen students' theoretical knowledge and a platform for engineering majors to cultivate students' practical ability. Under the background of new engineering construction, the school should actively carry out engineering training, rebuild and improve the practical teaching system, and promote students' transition from school to work as soon as possible, and apply the knowledge they have learned to practice.

1 The main problems of engineering practice training in Colleges and Universities under the background of new engineering construction

1. Lack of engineering awareness education atmosphere

The country's urgent demand for new talents has prompted the supply side reform of talent cultivation in Colleges and universities, and higher education has entered a new stage of development. However, there are still some deficiencies in the process of engineering practice training in Colleges and universities, which is difficult to create a strong atmosphere of engineering consciousness. The key of engineering training is to cultivate comprehensive talents with strong engineering consciousness and high engineering literacy. Practical teaching can be carried out through engineering training to implement the talent training objectives. However, in the actual teaching, the teaching hours provided by colleges and universities are continuously reduced, which makes it difficult to carry out practical teaching in depth, students can not grasp the essence of practical skills, and it is difficult to cultivate talents with comprehensive engineering ability. Practical teaching is mainly carried out in the form of knowledge competition and activity planning, but at present, colleges and universities lack practical activities with engineering consciousness atmosphere propaganda, which is difficult to create a good teaching atmosphere and is not conducive to the development of students' comprehensive practical ability.

2. Engineering training content to be updated

Engineering training activities are mainly originated from metalworking practice. Traditional practice projects include cars, tongs, drills and other contents. New industry technologies are introduced in the development process of the times. However, some colleges and universities' development started slowly, the new technologies integrated are not comprehensive enough, and even some colleges and universities' educational resources are insufficient, and the software and hardware facilities provided are seriously disconnected. The training projects carried out by most colleges and universities include less representative advanced manufacturing technologies, and the training courses are relatively fixed and single, which is difficult to achieve the effective integration of new technologies. The practice content is the key of engineering training. If colleges and universities do not update the engineering training content in time, it is easy to lead to students' skills can not meet the needs of the industry, which is not conducive to the development of students' individual and industry.

3. Insufficient support of engineering training resources

The support of engineering training resources mainly comes from teachers, project resources, etc., but the current engineering training resources in Colleges and universities are relatively scarce, which is difficult to effectively support engineering training. First of all, engineering training teachers are insufficient. The teachers of traditional metalworking training are mainly from enterprises. They have rich practical experience in the industry and can provide rich content for training activities. However, with the continuous promotion of teaching reform and the continuous addition of young teachers, the structure of school engineering training teaching staff has changed, and the teaching problems have gradually become prominent. Most of the senior teachers have strong practical ability, but they lack the

application of modern teaching tools and teaching resources, and it is difficult to achieve the integration with modern new technology; Young teachers have strong scientific research ability and high academic level, but their engineering practice experience is relatively insufficient. The comprehensive nature of engineering training requires teachers not only to have noble teaching ability, but also to have solid practical teaching ability. From this, it can be seen that the teaching staff in Colleges and universities need ability balance. Secondly, the engineering training conditions in Colleges and universities are insufficient. Engineering training needs a training center with actual production environment, but the current training conditions of colleges and universities are insufficient, lack of enterprise related content, lack of introduction of advanced equipment in the industry, weakening of enterprise management concept, which can not bring students a training environment close to the enterprise.

2 Practical strategies of engineering training in Colleges and Universities under the new engineering construction

1. Actively carry out the construction of new engineering courses and clarify the functions of Engineering Training Center

Engineering training center is an important platform to carry out the construction of new engineering and practical teaching in Colleges and universities. Clarifying the function of engineering training center can provide a clear direction for engineering training. Under the traditional mode, the basic functions of the engineering training center include consolidating the students' basic knowledge of engineering, and promoting the students to master the forming methods of basic metal materials and the application methods of manufacturing equipment. In the new era environment, intelligent technology has developed rapidly, and the production organization form has shown the characteristics of intelligence and variability, which has prompted the change of the connotative structure of the ability of relevant employees. As a place to deliver engineering and technology human resources to the society, engineering colleges and universities should pay attention to responding to the changes of the times and cultivate talents with poor discipline application competence, Actively adjust the talent training mode, expand the functional orientation of the engineering training center, shape a practical curriculum system for interdisciplinary ability training, and promote the development of students' comprehensive ability. Engineering training has the attribute of general education. It is an important way for students of various majors to experience industrial culture and develop practical skills. Colleges and universities should clarify the development orientation and construction type of engineering training center according to their own development orientation. The knowledge system based on the construction of new engineering includes professional principle courses, computer application ability, intelligent manufacturing technology and other contents. The teaching is carried out through the rotating training mode, requiring students to complete the training projects within the specified time, including mechanical processing projects, intelligent control projects and so on, so as to promote the integration of multiple disciplines based on the original engineering theory knowledge, In order to develop students' engineering ability. In terms of function, the training center should have the functions of carrying out practical teaching, scientific research and production to meet the teaching needs of colleges and universities. In terms of levels, the training center should have the functions of general education and engineering comprehensive ability training, and set up projects such as the transformation of engineering knowledge achievements and engineering technical problems according to the actual needs of enterprises, so as to improve the quality of personnel training. This requires the school to pay attention to the cooperation with regional enterprises, and jointly build the laboratory through school enterprise cooperation to realize the integration of production, learning and research. In terms of service objects, the orientation of the training center is teaching and production. The teaching function should serve the engineering training needs and scientific research needs of engineering students in the school, and the production function should serve the teaching, scientific research and social needs. In the construction of new projects, the engineering training center should pay attention to the continuous updating and sequencing of training and learning tasks, and continuously update the curriculum structure system.

2. Combining with the development characteristics of the school, constructing the new engineering practice teaching system

In the new engineering construction environment, the school should comply with the development and change needs of the intelligent manufacturing industry, cultivate engineering talents with different professional characteristics and ability structure, improve the practice teaching system of the new engineering by improving the engineering training content, improve the richness of the curriculum system, and avoid repeating the single talent training mode. Taking the major of mechanical engineering as an example, the school should build professional skills training, virtual simulation training and other platforms around the practical needs of mechanical engineering, and integrate intelligent technology into practical training activities such as injection molding and stamping forming, so as to form a training teaching system with the characteristics of the school's new engineering construction. Virtual technology can be introduced into training activities as an important technology to build a virtual simulation teaching platform, which can not only save the investment of equipment resources in schools, but also reasonably adjust the training process, remove simple and repeated operation links, let students directly enter the key process links and key content parts, and enhance the efficiency of students' practical exercise, Let students master the key technology of manufacturing process as soon as possible and generate more process experience. In addition, relying on the scientific research platform and engineering practice platform, the university can build a practical teaching system of combining in class and out of class, teaching and scientific research, and competition teaching integration, which is mainly divided into maker space, electromechanical engineering practice center, maker space and other modules, providing an effective platform for training and displaying students' comprehensive ability. Engineering training has a high degree of interdisciplinary integration, and pays more attention to the systematicness and integrity of the course. Each module training integrates a large number of engineering professional knowledge, which can become an independent engineering task and effectively exercise students' comprehensive skills. In the process of project practice, students can master rich practical

experience in a short time, obtain good engineering experience, and then help to strengthen students' engineering quality. For example, in the practical training of 3D printing and laser processing, students can not only learn the process knowledge and understand the industrial production process, but also experience different engineering cultures and inspire students' spirit of respecting and loving labor. College students are the labor group that will soon enter the society. Colleges and universities should avoid the problem of workplace disconnection in teaching. Engineering training can combine with the actual situation, focus on the content of new engineering construction, base on the concept of engineering education, and take the actual production projects as the carrier to promote students' comprehensive quality development in the real project and subject environment of enterprises.

3. Building intelligent teaching platform and innovating practical teaching mode inside and outside the school

In the new era, colleges and universities should combine the concept of new engineering construction, take modern information technology as the support, and take the intelligent teaching platform as the carrier to build a new teaching mode that combines online and offline practice, school theory and enterprise practice. The construction of new engineering courses has put forward new connotations for talent cultivation in Colleges and universities. Colleges and universities should closely focus on the environment of the construction of new engineering courses and innovate the school-based practical teaching mode. First, set up the practice system of combining inside and outside the school. The off campus practice teaching is highly practical and hands-on, mainly in the form of production practice and professional experiments. The school can organize students to participate in the enterprise to understand the basic situation and production process of the enterprise, and invite enterprise engineers to the school for on-site explanation, so as to promote students to establish a more comprehensive understanding of the actual production, Effectively cultivate students' engineering thinking and innovation consciousness. The practical teaching in the school is highly comprehensive. Teachers can use the virtual teaching platform to carry out teaching, set up professional design, competition activities and other projects, such as inviting enterprise tutors to carry out online practical guidance, and use the cloud classroom and other teaching platforms to carry out online teaching, so as to lay the foundation for students' practice. The combination of internal and external practice can realize the diversified cultivation of students' ability. Secondly, realize the synchronous development of smart teaching platform and mainstream industry technology. Intelligent teaching platform is an important carrier of professional practice, which provides effective support for the development of students' comprehensive quality.

Concluding remarks

To sum up, engineering training is an important part of the talent training system in Colleges and universities, and an important combination of theoretical learning and practical teaching. Under the background of new engineering construction, colleges and universities should rebuild and improve the practice teaching system, including the update of teaching philosophy, the integration of teaching resources, and actively explore the effective path of engineering training. Engineering training can promote the construction of new engineering courses and the reform of practical teaching in Colleges and universities, help colleges and universities to explore the training mode of engineering training talents in line with the development characteristics of higher education in the new era, provide impetus for the connotative development of higher education, and provide talent support for social and economic development and national development.

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Research on the cultivation of College Students' innovation and entrepreneurship ability in the new era

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Abstract: with the steady progress of China's industrial upgrading, college students have gradually changed from "simple employment" to "employment + entrepreneurship", and the society has put forward higher requirements for college students' innovation and entrepreneurship ability. Therefore, colleges and universities need to pay more attention to innovation and entrepreneurship ability, and adopt corresponding strategies to cultivate students' innovation and entrepreneurship ability, so as to cultivate high-quality talents to meet the needs of the society. In this regard, this paper first expounds the significance and current situation of Cultivating College Students' innovation and entrepreneurship ability in the new era environment, and then puts forward the corresponding training strategies for reference.

Key words: new era; College students; Innovation and entrepreneurship; culture

With the change of economic growth mode, the demand for talents has also changed. Nowadays, college students are facing the problem of difficult employment. If this problem is not effectively solved, it will restrict the stable development of China's economy. With the proposal of the concept of innovation and entrepreneurship, it can effectively alleviate the problem of difficult employment of students. Therefore, in the context of the development of the new era, colleges and universities need to focus on cultivating students' innovation and entrepreneurship ability, so as to meet the needs of the society and ultimately enhance students' employment competitiveness.

1 The significance of Cultivating College Students' innovation and entrepreneurship ability in the new era

1. It is conducive to expanding students' employment channels

In the new era, the employment situation is becoming more and more serious, leading to some student unions choosing to start their own businesses, which can alleviate the employment pressure to some extent, and also inject new vitality into the development of new industries. Therefore, the cultivation of College Students' innovation and entrepreneurship ability can ensure that the training objectives are consistent with the development trend of the industry, and improve the quality of talent training as a whole, so as to promote the sustainable development of society. In addition, by carrying out innovation and entrepreneurship training activities, in addition to leading students to carry out independent entrepreneurship, it can also fully stimulate students' innovation consciousness through corresponding theoretical

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