

Research on the Present Situation, Problems and Countermeasures of Teaching Mode of Higher Engineering Education in China in the "Internet Plus" Era

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Abstract: With the increasing level of science and technology, the standard of higher engineering education in our country is further expanded, but in the current era of "internet plus ", the problems existing in the teaching mode of higher engineering education in our country are increasingly prominent and can not meet the needs of social development. For the current situation of teaching mode of higher engineering education in our country, this paper will put forward the innovative countermeasures of teaching mode of higher engineering education in our country under the era of "Internet" in order to improve the teaching effect of higher engineering education in our country and train more outstanding talents.

1. The Current Problems of the Teaching Mode of Higher Engineering Education in China in the " Internet Plus "Era

Nowadays, with the rapid development of science and technology and the reorganization of global industrial structure, under the background of "internet+" era, the training effect of engineering and technical talents is related to the level of scientific and technological development in our country, which is determined by the national industrial competition. To this end, the world is strengthening the promotion of higher engineering education teaching mode innovation and change, in order to occupy a major global competition. At present, the mechanism of higher engineering education in our country is huge, its value function is more and more remarkable in personnel training, science and technology development, service society and so on, and it has achieved good development results. However, under the background of "Internet+" era, its obvious problems are becoming more and more prominent, so it is necessary to take effective measures to realize the sustainable development of higher engineering education and serve the social economy and politics of our country.

1.1. There is no Clear Orientation and Teaching Objectives for Running a School

In the context of the "Internet+" era, people's life development has changed dramatically, as shown in figure 1. The development of higher engineering education in our country is not very clear, its form of running a school is like climbing high knot expensive, there is no distinct special school. The traditional colleges and universities have been upgraded into undergraduate colleges and universities, and universities have implemented the policy of large-scale integration, blindly pursuing the construction of comprehensive, teaching and research-oriented and applied universities. Colleges and universities have constantly sought the authorization of doctorates and masters degrees with the help of existing resources[1]As a result, the orientation and social development of higher engineering education in our country are misplaced, and colleges and universities pay too much attention to their own orientation and honor, so that they ignore the actual requirements of social development for engineering talents.



Figure 1 Internet+ era

In the background of "internet+", the main purpose of higher engineering education teaching is to cultivate the multi-level and high-level talents needed by the society, and the different levels of colleges and universities should also carefully plan the training goals. However, at present, the higher engineering education in our country can not meet its training goal in teaching, academic qualifications and academic system, because of blindly pursuing the high-level and high-level education and teaching mode, the training goal of each level of engineering education and teaching mode is unknown, and the division of labor is vague, which fails to show the characteristics of its engineering education.

1.2. Unreasonable Curriculum

All along, our country's education is deeply influenced by the former soviet union's education and teaching mode and curriculum education view, and attaches great importance to the further development of the discipline system. Although our country's higher engineering education teaching mode has always promoted the reform and innovation, it has not solved the current situation of the curriculum. The traditional curriculum mechanism always maintains the public basic curriculum, the professional basic curriculum and the specialized curriculum, but the independence of the different curriculum is still remarkable, the curriculum and the curriculum change are usually in the various curriculum internal facilities, the discipline barrier always exists. In the context of "internet+", the teaching mode of higher engineering education in our country, the comprehensive curriculum is very few, although the relevant education curriculum is blindly integrated, but still did not establish the internal relationship between the curriculum and the curriculum, but the integration of the relevant curriculum formation, the realization of the new curriculum has never stopped.

In the process of setting up the teaching staff of higher engineering education, our country always values the teacher's education and qualification, but the cultivation of the core quality of the young teacher's engineering has been neglected. At the same time, most teachers pay too much attention to the promotion of their own academic qualifications and academic ability, but ignore the link of education and teaching, there are no examples and materials in the environment of engineering education, lack of good engineering consciousness, and can not strengthen students' engineering thinking in education and teaching.

1.3. Innovation and Entrepreneurship Ability to Be Improved

In the era of "internet +", although the practice of teaching mode of higher engineering education in our country occupies a certain proportion, it mainly takes the theoretical teaching mode as the premise, pays attention to the deep research of theoretical knowledge, so that it neglects the cultivation of engineering practical skills, and causes bad effects on teaching practice, production practice, graduation design and other practical education links. The content of daily teaching in colleges and universities is contrary to the actual production construction, and the level of curriculum achievement is regarded as an important index to evaluate the students' comprehensive effect, which leads most students to fail to realize the necessity of practical learning. Because of the

increasing scale of colleges and universities, the current mode of education and teaching still can not meet the needs of teaching. These problems can not guarantee the training of students' practical ability. The lack of practical teaching is not only not conducive to the cultivation of students' innovative ability, but also will make engineering education "engineering" affected by it.

In addition, the teaching mode of higher engineering education in our country is deeply influenced by the inherent education concept, and most college students will choose employment, test and go abroad first after graduation, which leads to the lack of "self-employment consciousness" among college students. According to the relevant survey data, China's average level of entrepreneurship education is far behind the world's entrepreneurship observation statistics. In addition, the literature shows that the rate of entrepreneurship among college students in China is less than 1% of the total number of graduates, but the western developed countries account for 25% to 30% [2] Higher education teaching mode, the cultivation of talent should not only be job-seekers, but also professional post builders and innovation. Especially in the mode of engineering education and teaching, it is very important to strengthen students' consciousness of innovation and entrepreneurship, not only to improve students' comprehensive application ability, but also to let students master learning methods, learn to survive and develop, so as to promote the good development of society.

2. "Internet +" Era in China's Higher Engineering Education Teaching Mode Optimization Countermeasures

2.1. To Clarify the Objectives of Running Colleges and Universities and to Highlight the Level of Training

Based on the background of "Internet+" era, colleges and universities should combine the actual situation, accurately position, according to their own characteristics of running schools, play the advantages of education and teaching, rather than blindly "compare". Colleges and universities at different levels should highlight the characteristics of running schools, and colleges and universities should also pay attention to the construction of higher vocational education and teaching system, pay attention to the cultivation of applied and high-level talents, rather than the training of specialized science according to the compressive education mode of undergraduate courses. The training goal of specialized students should be to complete the training of basic technical personnel. The goal of undergraduate students training should be to complete the training of engineers, some scholars and educators now describe engineers as "blank ", not "engineering experts" [3] The training goal of a graduate student should be higher than that of an undergraduate student, making it more relevant to the training goal of an engineer. However, the goal of doctoral training should focus on the subject-technical researchers and university teachers as the leading, but also for the enterprise to train engineering doctoral students to meet the needs of enterprise development. For the demands of different levels of talents, the teaching of higher engineering education in our country further clarifies its aim of running a school, constructs a diversified and multi-grid flexible education and teaching model, and establishes a sound modern degree system, such as mba, master of interdisciplinary engineering, phd of engineering and so on.



Figure 2 Modern degree system

2.2. Attention to Professional Teaching

In the era of "Internet+", it is the development of higher engineering education and teaching effect, and strengthening professional construction. Therefore, in the teaching materials, the teaching content should closely follow the development of modern science and technology, renew the teaching concept and teaching mode, highlight new ideas, new practice, new skills and new situation, apply modern teaching mode, train and strengthen students' ability of independent learning and independent inquiry by interactive practice, promote students' subjective initiative, create a harmonious teaching atmosphere, and create strips for students to improve their innovative consciousness and information ability. In addition, in the aspect of professional curriculum setting, we should solve the problems such as the contradiction between the traditional curriculum and the curriculum, repeat the curriculum, pay attention to the internal connection between the courses, explore the practical teaching mode, as shown in figure 3, make the students' learning foundation more solid and extensive, so as to promote the students' comprehensive development. At the same time, in the professional teaching mode, colleges and universities should pay attention to the supervision and evaluation of experimental courses, and ask teachers to pay more attention to experimental courses, production practice and other links, and actively train innovative talents.



Figure 3 Practice teaching model

2.3. Improving the Training Level of Innovation Ability

The main problem of the teaching mode of higher engineering education in our country is how to improve the students' practical innovation ability. However, the cultivation and strengthening of the practical innovation ability only depends on several practical teaching links, which can not achieve the expected effect. In the era of "internet+", college teachers should attach importance to scientific research practice, strengthen students' engineering thinking and consciousness by means of information technology and internet technology, and make every student participate in scientific research innovation training whenever possible. In addition, colleges and universities should actively build a harmonious interactive engineering practice base inside and outside the school, and through the way of cooperation between schools and enterprises, take "go out, bring in" as the construction principle, guide engineering teachers to work part-time in enterprises, and require experienced senior engineers in the engineering field as part-time teachers to realize the construction of double-qualified teachers. At the same time, colleges and universities should vigorously advocate the combination of industry, university and research, integrate the engineering ability of engineering talents and the scientific research ability of the teaching staff into the service entity, and transform the research results of engineering technology into the service entity, so as to continuously train outstanding talents for the society and promote the sustainable development of the society.

3. Conclusion

To sum up, under the background of "Internet+", the teaching mode of higher engineering education in our country should pay attention to innovation and change, realize the problems existing in the present situation and teaching mode of higher engineering education in the past, make up for the deficiency of teaching mode of higher engineering education by changing teaching concept, optimizing teaching mode, utilizing educational resources and so on, solve the problems of teaching mode of higher engineering education, so as to improve the level of talent training and promote the future development of students.

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