

Research on the Construction of Practice Teaching System of Advantageous Major in Local Undergraduate Colleges for New Engineering

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Abstract: Under the background of new engineering construction, the state has put forward higher requirements for the cultivation of innovative talents in local undergraduate colleges and universities, focusing on the cultivation of skilled, applied and compound talents that meet the needs of social development. The importance of professional practice teaching is self-evident. This paper focuses on the related questions of construction for practical teaching system of local colleges with advantages and characteristics for new engineering.

Keywords: New Engineering; Local Undergraduate Colleges; Advantageous Major; Practical Teaching System; Construction Research

With the rapid development of science and technology, the degree of interdisciplinary, integration and penetration between disciplines in Colleges and universities is deepening day by day. Many problems encountered in the process of modern industrial development need to be solved by using multidisciplinary knowledge. In order to cultivate high-quality talents, we must take the cultivation of applied undergraduate talents as the goal, improve the pertinence of employment, and construct a perfect practical teaching system. Next, some thoughts of advantage characteristic practice teaching system construction of the local undergraduate colleges are discussed.

1. Overview of new engineering construction

Under the new situation, the revolution of science and technology and industry with network information technology as the core has been set off all over the world, which has given birth to new economic forms and forms. Countries all over the world are actively developing new economy, hoping to be invincible in the new round of science and technology and industrial revolution. China is in the critical period of economic structure transformation and upgrading. It is urgent to take innovation as the driving force to lead the transformation and upgrading of traditional industries, accelerate the pace of development of new economic formats, and then stand out in international competition with super comprehensive strength. However, the development of new economy depends on the quantity and quality of talents to a great extent, especially the outstanding talents who can actively adapt to the new economy and new business forms and have strong innovation ability. Based on this, colleges and universities attach great importance to the construction of new engineering. Compared with the traditional engineering major, the new one aims to break through the disadvantages of the unreasonable classification of traditional engineering majors, the disconnection between talent training and the national industrial development demand, and the teaching mode based on the examination oriented education system. According to the national and industrial new engineering talent training standards, combined with the classification management requirements of colleges and universities, the new engineering major aims to

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build an education system with Chinese characteristics, and strive to cultivate a number of high-quality talents.

It can be seen that local undergraduate colleges should have a clear understanding of the situation, correctly recognize their own position and role in the construction of new engineering, so as to adhere to the guiding role of new engineering concepts, condense their own characteristics and advantages, in order to grasp the lifeblood of industry development, and build a perfect practice teaching system. It also strengthens students' practical skills, innovation and entrepreneurship ability, so as to cultivate more new compound talents with strong professional background and practice ability, who can meet the requirement of social and economic development, as well as promote sound and rapid development of colleges and universities

2. Specific countermeasures for the construction of practical teaching system of advantageous major in local undergraduate colleges for new engineering

2.1 Highlighting characteristics and innovating talent training mode and plan

Under the background of new engineering, colleges and universities should innovate the talent training mode and plan based on the discipline characteristics and advantages, combine with the characteristics of different majors, in order to nurture the characteristics of professional education step by step, and construct the "characteristic" talent training plan on the basis of practice. For example, in the first three years of the University, the public basic courses and technical basic courses have been fully connected to realize the "solid foundation" of the major, with strong unity; in the teaching process of professional courses, combining with the teaching needs of the advantageous major direction, the characteristic direction module is formed according to the relevant knowledge structure, so that students can flexibly choose to study according to their own needs. In this way, it can not only meet the needs of students, but also stimulate students' interest and enthusiasm in learning. The deep combination of unity and flexibility is conducive to the construction of a perfect talent training plan.

In recent years, the Ministry of Education has focused on the implementation of the project to ensure the quality of teaching, attached great importance to the cultivation of students' practical ability and innovation ability. Colleges and universities have implemented innovative talent training mode, followed the guiding ideology of "strengthening practice and emphasizing ability", and deeply strengthened the training and ability training of students in practical teaching, in order to fully highlight the advantages majors, and improve the teaching quality and practice ability of local undergraduate colleges. Colleges and universities should also pay attention to increase the financial support for practical teaching, build perfect laboratories, practice training bases, and improve practical teaching facilities and equipment. It is also necessary to organize students to participate in various professional design competitions, innovation and entrepreneurship competitions, and truly escort the cultivation of practical ability, innovation and entrepreneurship ability.

2.2 Optimizing the practice teaching target system

Under the background of new engineering, the advantageous major practical teaching objectives of "three levels and four abilities" should be clarified in local undergraduate colleges. Among them, "three levels" refer to the level of foundation, improvement and development. The foundation level aims to guide students to understand and master professional skills and lay a solid foundation for the subsequent cultivation of comprehensive strength; the purpose of improvement level is to cultivate students' ability to analyze and solve problems on the basis of foundation level, and to cultivate the ability of management, decision-making and risk management that students should have after employment in the future; the development level aims to cultivate students' innovative consciousness and ability. The development level is the highest level of practical teaching, but it is greatly affected by the teaching of foundation and improvement level. The setting of practical teaching objectives has a direct impact on the practical teaching content. "Four abilities" refer to professional basic ability, comprehensive ability, innovation ability and entrepreneurial ability. Clear practical teaching objectives can greatly improve the quality and level of personnel training.

2.3 Constructing of practical teaching content system

In the final analysis, the competition between industries and enterprises is the spirit of talents. Under the background of new engineering, workers in all walks of life should not only have solid theoretical foundation, but also have cultivation of creative thinking ability and practical operation ability. Based on this, higher requirements are put forward for the cultivation of students' skills in local undergraduate colleges. However, students' skills are trained in practice while in traditional classroom teaching; "teaching" focuses on the explanation of specific content, process and method, aiming at cultivating students'

logical thinking ability; the “practice” aims to cultivate students’ practical ability, analysis and problem-solving ability. It is not difficult to find that “teaching” and “practice” is unitized, and they complement and promote each other. Therefore, local undergraduate colleges should pay attention to the innovation of practice teaching content, adopt the integrated teaching mode of theory and practice, and guide students to understand and master the theory, as well as cultivate professional skills in practice training, so that they can apply what they have learned on campus based on the actual market demand. In the process of hands-on operation, students can effectively train relevant skills, and make theoretical knowledge specific, in order to deepen the understanding and mastery of theoretical knowledge. In this way, it can shorten the distance between theory and practice, and build a three-dimensional practical teaching content system with “theory, practice and application” in one with remarkable effect.

2.4 Innovating the practice teaching evaluation mechanism

Assessment plays an important leading role in practical teaching. Many local undergraduate colleges do not realize the importance of practical teaching assessment. The outdated and backward assessment and evaluation system can not accurately detect the effect of practical teaching, and ultimately reduce learning interest and enthusiasm, which has a great negative impact on Teachers’ teaching. Based on this, local undergraduate colleges should innovate practical teaching evaluation mechanism. In recent years, with the rapid development of social economy, the teaching forms and teaching contents of local undergraduate colleges have changed dramatically. Therefore, the evaluation mechanism should follow the trend, and highlight fairness and justice, as well as flexibility and effectiveness. Under the background of new engineering, the practical evaluation mechanism of local undergraduate colleges should include two aspects. First, the assessment of students. It is necessary to pay attention not only to the results of the assessment, but also to the process of assessment. Under the examination oriented education system, many professional practice courses are mainly based on verification, that is, the students’ results are verified and scored according to the industry or professional norms. Under this evaluation mechanism, it is difficult to cultivate students’ creative thinking ability, innovation and entrepreneurship consciousness and ability. Therefore, under the background of new engineering, we should pay attention to the construction of evaluation mechanism to test students’ ability of practical problem solving ability, practical operation ability and innovation and entrepreneurship ability, and adopt competitive, open and exploratory evaluation methods, so as to continuously improve the quality and level of evaluation. Second, the assessment of teachers. While paying attention to the assessment of students, we should also avoid neglecting the assessment of teachers. Adhering to the assessment principle of improving teachers’ practical ability and professional level, diversified assessment methods should be adopted to detect the problems existing in practical teaching for teachers, and guide and urge teachers to correct, so as to continuously improve the quality and level of practical teaching in local undergraduate colleges.

3. Conclusion

In summary, with the arrival of the new industrial revolution era, the construction of new engineering is an important guarantee for the realization of industrial talent training. Local undergraduate colleges should speed up the construction of practice teaching system of advantageous major based on the background of new engineering, through clear teaching objectives, outstanding talent training mode, perfect practice teaching content system and high-quality practice teaching evaluation mechanism to continuously improve the quality and level of professional teaching.

References

1. Jiao Z. On the integrated practice teaching of light industry specialty based on the concept of new engineering construction——Taking light industry specialty of Tianjin university of science and technology as an example. *Light Industry Education in China* 2018; 103(05): 11-17.
2. Han T. Construction of practical teaching system for automation major from the perspective of new engineering. *Educational Modernization* 2020; (15): 41-43.
3. Hu M, Sun Y, Qi E. Practice teaching construction of local applied undergraduate colleges under the background of new engineering. *Laboratory Research and Exploration* 2019; (7): 223-227.
4. Tian L, Wang Z, Geng W. Research on the construction of practical teaching system of software engineering major under the background of new engineering. *Computer Knowledge and Technology* 2019; (29): 152-153+176.