

Analysis of Talent Training Mode of Civil Engineering Specialty Based on the Concept of “New Engineering”

Haixiao Lin

Henan Polytechnic University, Jiaozuo 454000, Henan, China.

Fund Project: Henan New Engineering Research and Practice Project (2020JGLX036); Henan Virtual Simulation Experiment Teaching Project (JG [2019] No. 672).

Abstracts: In the new stage of comprehensive talent education reform in our country, the teaching concept of “new engineering” is put forward. Educational units should cultivate scientific and technological talents in the new era for our country and meet the challenges brought by the reform of major scientific and technological industries. Combined with the teaching concept of “new engineering”, this paper takes civil engineering as the teaching analysis object, discusses and analyzes the development trend of the industry and the requirements for comprehensive talents of civil engineering, and further studies the training strategy of civil engineering talents.

Keywords: New Engineering; Civil Engineering; Personnel Training; Strategy

1. Introduction

In the development of our country's construction industry, there is a large enough employment window. While carrying out engineering education, the school should do a good job in the innovative mode of teaching reform in combination with the teaching guidance direction of new engineering. It is recognized that educational reform needs to be combined with students' theory and practice to further improve students' comprehensive ability. In the construction and reform of the teaching mode of new engineering, combined with the professional characteristics of civil engineering, the information-based teaching method is adopted to further cultivate excellent talents in engineering, which is also a new development idea of civil engineering teaching.

2. The significance of developing new engineering in civil engineering specialty

Since the education department put forward the teaching concept of “new engineering” in 2017, all kinds of colleges and universities across the country have started the construction of new engineering, and there have indeed been good innovation cases in this regard. Under the background of new engineering, the university should analyze the talent training strategy of new engineering specialty of civil engineering in combination with the development of civil engineering specialty. In the whole teaching practice, we can explore an innovative teaching system, adhere to the future development of students' career as the fundamental task of teaching, and cultivate comprehensive talents, so as to do a good job in curriculum innovation according to the professional construction standards of civil engineering.

At this stage of training, civil engineering professionals, combined with engineering projects as the practice carrier, we can improve students' professional operation ability through school enterprise cooperation. Under the background of the teaching concept of new engineering, to help students build the professional knowledge system, we also need to consider the cross-dimensional training plan to meet the modern social development. In particular, we should combine civil engineering professionals with internet education, make good preparations for talents, cultivate students' network software operation skills, and further improve work efficiency in the future. For example, today's technology talent training takes the Internet intelligence as the core of development, which is a development direction under the new engineering concept.

Copyright 2021 Haixiao Lin

doi:10.18686/ahe.v5i6.3775

This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.00>), which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

3. Analysis on the current situation of civil engineering talent training under the concept of new engineering

3.1 Unclear talent training objectives

Under the background of the new engineering teaching concept, many domestic colleges and universities began to carry out teaching transformation and innovation, but there are still some problems in the goal setting of talent training. The training objectives of engineering talents are divorced from the actual construction requirements. Some schools did not consider from the perspective of talents, ignored the theoretical reserve and professional ability improvement of talents, and only paid attention to the understanding of talents' professional knowledge in educational work, in order not to carry out comprehensive teaching from the perspective of professional ability development, resulting in the lack of improvement of students' professional ability and professional quality.

3.2 Lacking of teaching system and teaching resources

In the process of teaching, there are defects in the construction of the overall teaching system, especially constrained by the previous traditional stereotyped teaching thinking. In terms of teaching, teachers focus on explaining important knowledge. They feel that after students have solid theoretical knowledge, they can have higher thinking ability and meet the comprehensive requirements of modern education for engineering talents. The construction of the teaching system is not considered from the perspective of civil engineering professional skills, nor integrated into advanced civil engineering technology.

Ignoring the improvement of students' professional skills and literacy, this teaching model hinders the all-round development of students. In addition, there is a lack of teaching resources in some schools. For engineering comprehensive talents, while improving students' knowledge base, they also need sufficient teaching resources as support and pay attention to the comprehensive development of students' professional quality. However, due to the lack of teaching resources, the actual civil engineering cases, simulation technology and three-dimensional models cannot be integrated into the teaching process, which is relatively lack in the whole teaching effect, and limits the students' thinking and imagination ability.

3.3 Insufficient network education

For the training of engineering professionals such as civil engineering, the new engineering course must pay attention to the network education mode. In the specific development process of new talent training activities, some colleges and universities do not pay attention to the construction of online education platform according to the social development situation and the development trend of civil engineering specialty, resulting in students' lack of improvement in Internet technology, which is not conducive to the development of comprehensive talents. Especially for engineering majors, students are required to understand big data, cloud computing, block chain, etc. These new technologies are widely used in the whole construction industry. For the cultivation of comprehensive talents, while improving the professional knowledge of civil engineering, we also need to pay attention to this aspect of network education.

4. Talent training mode of civil engineering specialty based on the concept of “new engineering”

4.1 Establishing clear training objectives for engineering talents

Under the background of new engineering teaching reform, in order to further ensure the training efficiency of engineering talents, colleges and universities should implement the whole teaching concept in each teaching link, formulate clear teaching objectives and implement teaching tasks. In each activity link of civil engineering teaching, the school can understand the correlation between different majors through cross specialty learning, and formulate corresponding teaching plans and teaching objectives according to the professional talent investment standards in various industries and fields, in order to analyze the rationality of the formulation of teaching objectives, combined with the law of civil engineering teaching, and set up scientific and detailed teaching objectives.

In all teaching work, teachers should think about teaching design from the perspective of students, including students' professional knowledge, theoretical reserves, operation learning of advanced equipment, team spirit, learning students' Internet learning, students' work skills, etc. In addition, when setting teaching objectives, it is necessary to implement the comprehensive objectives of student groups, so as to improve students' teamwork ability and professional ability, broaden students' vision and increase students' communication ability in the process of group learning, which is also the comprehensive requirements for engineering talents in the new era.

4.2 Optimizing the teaching system and integrate teaching resources

In order to cultivate excellent engineering comprehensive talents in the new era, it is necessary to build a reasonable curriculum teaching system, promote the teaching contents of various majors together, expand students' knowledge vision and improve students' civil engineering professional quality. In the comprehensive study of civil engineering and

Internet, the construction site drawings and construction models are taken as the basic teaching projects, and combined with the teaching form of Internet, so that students can directly feel the whole operation of the teaching project on the network. Teachers integrate more simulation data information into basic teaching content. This refined teaching setting enriches students' professional knowledge reserve and improves students' network operation ability.

In terms of teaching resources, schools should invest more funds to build excellent talents and further ensure the overall quality of teaching. Civil engineering has long been a very specialized field. In the process of teaching, relevant teachers must pay attention to the improvement of their professional level and improve the curriculum resources of talent training. Especially in recent years, civil engineering has developed faster and faster. Teachers also need to use their leisure time to improve their professional quality, so as to organize professionals to teach theoretical knowledge of civil engineering and improve professional quality through innovative activities. In the process of integrating curriculum teaching resources, we can create a good learning atmosphere, provide students with richer learning materials in the form of network teaching, and encourage students to use their spare time to learn professional knowledge related to civil engineering through smart phones in the process of teaching, in order to deepen the learning effect of students' professional knowledge and improve students' exploration and practical ability.

4.3 Creating network education platform

In order to further improve the computer network ability of civil engineering professionals, we need to improve the education platform, integrate teaching resources, build an internal network education platform, promote the further integration of theory and practice of engineering professionals, and improve students' comprehensive quality under such a learning environment. For example, the university is considering building an Internet school enterprise cooperation platform to release excellent enterprise recruitment information in the society. Students can independently contact enterprise managers and pay attention to the cultivation of students' practical ability by putting their theoretical knowledge into practice and combining the mode of school enterprise cooperation.

In addition, the platform construction of school enterprise cooperation can also introduce new equipment to schools, and students can operate in such a teaching resource environment. In particular, at present, civil engineering professionals will increasingly move towards the development trend of networking, construction projects are becoming more and more artificial intelligence, and advanced network control technology is adopted, which requires that while cultivating new engineering talents. We should pay attention to the improvement of students' ability to use network technology and network operation software, and master the future development trend of the construction industry, in order to further cultivate comprehensive talents.

5. Conclusion

In general, after the new engineering teaching concept is put forward, higher requirements are put forward for the teaching of the whole engineering specialty. As a civil engineering major, we must pay attention to the improvement of students' comprehensive ability in the process of teaching. Combined with the current development trend of engineering industry, we can formulate scientific teaching objectives, integrate teaching resources and promote the further development of engineering education.

References

1. Yue J, Kong Q, Gu L. Exploration on talent training mode of civil engineering specialty based on the concept of "new engineering". *Educational Modernization* 2019; 6(17): 8-10.
2. Li K. Research on the training mode of applied talents of civil engineering specialty under the background of new engineering—Taking Nanyang Normal University as an example. *Journal of Guangxi Institute of Education* 2020; 167(03): 203-205.
3. Du E, Fang Y, Xi L. Exploration on talent training mode of civil engineering specialty in local comprehensive universities under the background of new engineering. *Education and Teaching Forum* 2019; 412(18): 196-198.