

# Research on the Training Mode of Innovative Talents in Engineering Management Specialty for New Engineering

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**Abstract:** Combining with the main idea and connotation of the development of "new engineering", this paper analyzes the problems existing in the training mode of engineering management professionals at present, explores the training mode of engineering management professionals under the background of "new engineering science", aims to train the "new engineering" talents who meet the new requirements of national strategy and industry development, effectively improves the innovative spirit of engineering management students, improves the training system of innovative talents, and provides new ideas for the reform of the training mode of engineering management professionals.

**Keywords:** New engineering; Engineering management major; Talent training model; Innovation and creativity; Engineering practice management ability

## 1. Introduction

The continuous deepening of the reform of innovation and entrepreneurship education in colleges and universities is an urgent need to implement the national innovation-driven development strategy and promote the upgrading of economic quality and efficiency. It is an important measure to promote the comprehensive reform of higher education and promote the employment of higher education graduates with higher quality [1]. Force, engineering design ability and engineering innovation ability put forward higher requirements.

The major of Engineering Management cultivates the basic knowledge of management, economics and civil engineering technology, the basic theories, methods and means of modern management science, and the high-quality application-oriented talents who can be engaged in project decision-making and whole process management in the field of engineering construction at home and abroad [2]. Therefore, the cultivation of talents should pay more attention to the enhancement of students' comprehensive quality and innovation and entrepreneurship ability. Especially in the current background of engineering education professional certification and "new engineering" construction, how to promote the cultivation of innovative and entrepreneurial talents in engineering management is an important issue that needs to be solved urgently [3].

## 2. Problems Existing in the Training Mode of Engineering Management Professionals at Present

### 2.1. The curriculum system is unreasonable

As a complex interdisciplinary subject, the curriculum system covers engineering, economics, management and law, etc. However, the curriculum is often based on the teaching materials of civil engineering, which is applied directly to the teaching of engineering management by simple compression, but lacks strong pertinence [4]. In fact, the curriculum system set up by engineering management is not deep enough. Lack of knowledge points between the mutual integration, the final training of students can not meet the requirements of the industry.

### 2.2. Lack of practical experience for engineering management professionals

Our country mainly trains practical talents, which requires college graduates not only to have a solid theoretical basis but also to have certain practical experience [5]. When setting up the curriculum system, engineering management majors have less combination with the actual social needs, and most of the practices related to practical teaching, curriculum design, cognitive practice, etc., are still demonstrated in the classroom, manual calculation, compilation of relevant documents, and so on. Although graduates have learned a lot of theoretical

knowledge, but lack of practical operation, practical teaching is difficult to integrate into practical engineering, resulting in graduates difficult to find a suitable job.

### **2.3. Lack of integration of basic knowledge and innovative capabilities in engineering management**

Due to the lack of practical operation, few practical engineering cases are introduced into the theory teaching, some construction techniques and management methods are difficult to combine with theoretical knowledge.

## **3. Exploration of Innovative Talent Training Model for Engineering Management Professionals for "New Engineering"**

### **3.1. Adjust the personnel training program and curriculum system**

In the construction of "new engineering subject ", combining with the characteristics of school running, the engineering management specialty adjusts the personnel training plan and curriculum system, and integrates the concept of " new engineering subject "into the process of training program.

First of all, we actively go to excellent colleges and universities to communicate, learn from and learn from advanced models and experiences. Secondly, we invite senior experts and scholars to discuss and study, listen to their suggestions and opinions, and invite experts from enterprises to understand the requirements of college students engineering management ability and innovative entrepreneurial ability.

### **3.2. Establishing a platform for Cooperation and Education between Schools and Enterprises in "Learning to practice production"**

The establishment of innovative entrepreneurial practice platform is of great significance to the cultivation of college students innovation and entrepreneurial ability.

Establish the enterprise practice base, make the students take part in the work practice according to the actual business mode and work flow of the enterprise, introduce the advanced management idea of the enterprise, the advanced management technology and the management personnel with rich practical experience to enter the campus, at the same time, let the students go out of the campus, go to the enterprise, contact the actual production management, make the students theory knowledge and the production practice closely, promote the students innovation idea of engineering management in the school to get the practice in the enterprise, thus obtain the work experience and the enterprise practice and the examination ability, so that the students can change to the social person's role quickly, realize the school enterprise and enterprise cooperation education and the examination [6].

### **3.3. Building a practice training base**

The establishment of innovation, creative laboratory and training base to provide students with the necessary software for training creativity and the instruments and equipment for creative innovation [7]. To improve students innovating ability of engineering management.

### **3.4. Carry out science and technology competition, enrich innovation and entrepreneurship practice teaching mode.**

Vigorously promote the discipline competition of engineering management and sand table simulation practice training competition, take innovation and invention as the core, strengthen the openness of laboratory and training base, provide better practice environment, strengthen the organic combination of students' theory and practice, help students to position the future employment direction, stimulate students' enthusiasm to participate in it, and cultivate students' creativity New thinking ability, at the same time to promote learning, to promote teaching, to promote reform, and to promote the exchange of credit as the driving force for students to carry out competition.

### **3.5. Strengthening the building of the teaching staff**

Most of the university teachers directly enter the university to start teaching work after graduation, lack of engineering practice exercise and practical experience, resulting in the teaching process can not well combine theoretical knowledge with engineering practice, students can not apply the knowledge points learned, and can not meet the requirements of "new engineering" application-oriented personnel training. Establish "learning, practice, research and production" internship training base with production enterprises, regularly send teachers who are able to guide students' innovation education to go deep into production enterprises for training, master the engineering and technical management personnel and talent skill requirements required by each link of enterprise production, improve their own ability and methods to solve practical production problems, enhance teachers' teaching and scientific research level, and achieve The standard of double teacher.

### **3.6. Strengthen the cultivation of engineering consciousness and craftsman spirit**

At present, colleges and universities do not pay enough attention to the cultivation of students' engineering consciousness and craftsman spirit, and the lack of engineering ethics education leads to the general lack of "big engineering concept" among students. Therefore, according to the curriculum, the introduction of enterprise experts, taking advantage of their own advantages, the implementation of "Project-Oriented Curriculum Teaching Method", taking enterprise project cases as the main line, the introduction of basic teaching content of each course,

guiding students to directly apply knowledge to solve practical problems; based on the vertical and horizontal scientific research projects of enterprise experts, combined with the subject content and the knowledge structure and process of Undergraduates At the same time, give full play to the role of "production, learning and research" base in the graduation design. The graduation design process of students is all carried out in the corresponding production, learning and research base, so that students can accept the influence of practical engineering work, and learn the work style and methods of tutors imperceptibly, which is conducive to improving the comprehensive quality of students [8].

#### 4. Conclusion

Talent training is the core of university education. The talent training mode bears the achievement of talent training objectives and is an important responsibility to complete the education mission. Under the promotion of new engineering construction, the curriculum system of engineering management specialty should also be reformed accordingly. Universities should closely integrate the all-round requirements of new engineering for engineering management talents, and formulate reasonable and efficient talent training The training plan and active in-depth cooperation between school, enterprise, school and bank carry out all-round teaching, effectively use resources to build a reasonable and diversified teaching staff and the scientific and technological cultural atmosphere participated by all staff to comprehensively improve the students' scientific and technological innovation ability, actively explore the innovation of the training mode of Engineering management professionals in the context of new engineering, so as to cultivate strong industry background knowledge and engineering practice ability Innovative talents.

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#### References

- [1] Lu Gonghao, Li Xue, Liu Yu, Qi Huan, Zhang Yixing. Improving the innovation and entrepreneurship ability of college students based on the practical teaching of the pilot test platform of industry university research cooperation. *Education and teaching forum*. 2016, (49), 170-171.
- [2] Yang Limei, He Lipeng, Cheng Tinghai, Yu Baojun. Exploration and research on application-oriented undergraduate training mode for new engineering. *Internal Combustion Engine and Accessories*. 2019, (23), 287-288.
- [3] Zhang Yuanxiang, Ni Member, Wu Jun. Research and practice of innovation and entrepreneurship ability training system of "four in one" mechanical specialty. *Journal of Higher Education*. 2018, (24), 29-32.
- [4] Zhou Zhou. Teaching reform and practice of engineering management course in Colleges and universities in the new era. *Education and Teaching Forum*. 2019, (09), 156-157.
- [5] Yin Qianliang, Li Ming, Xin Xuqiong. The training mode of compound talents in engineering management under the background of "one belt and one road". *Hebei Enterprise*. 2019, (10), 129-130.
- [6] Mei Kaixiu, Shen Wei, Li Ziyang. Reform and practice of training mode of engineering management professionals under the background of large-scale enrollment. *Management and Technology of Small and Medium-Sized Enterprises (Last Ten Issues)*. 2019, (09), 67-68.
- [7] Zhang Guomei. Research on practical teaching system based on the cultivation of excellent engineering management talents. *Journal of Higher Education*. 2019, (23), 105-107.
- [8] Zhang Haoqiang, Lu Zhengjie, Cai Liu, Liang Yujuan. Research on practical teaching and assessment of "mechanical design and manufacturing and automation" based on applied talent training mode. *Hubei Agricultural Mechanization*. 2019, (09), 27-28.