

# Research on the Innovative Development Path of Vocational Education Specialties under the Background of New Engineering

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**Abstract:** Under the background of the construction of new engineering disciplines, the research on the innovative development path of vocational education specialties has become an important topic for promoting industrial upgrading and social economic development. Based on policy orientations such as the "Fudan Consensus", "Tianjin University Initiative", and "Beijing Guidelines", and in combination with the core connotations of interdisciplinary integration of new engineering, technological innovation, and the cultivation of practical abilities, this article An in-depth analysis of the practical problems existing in vocational education in terms of professional setting, curriculum system, teaching staff, practical teaching and evaluation system, such as disconnection from industrial demands, lagging updates, weak construction, insufficient conditions and incomplete system. By proposing strategies such as innovative talent cultivation models, building a platform for cooperative education among the government, schools and enterprises, promoting the construction of new majors and the transformation of old ones, and strengthening the introduction and training of teachers, the practical paths for the innovative development of vocational education majors are explored. The research results show that vocational education needs to closely align with the development trend of new engineering disciplines, deepen the integration of industry and education, optimize the professional structure and curriculum system, enhance the comprehensive quality of the teaching staff, improve the conditions for practical teaching, and perfect the talent cultivation and evaluation system, in order to cultivate high-quality technical and skilled talents that meet the demands of emerging industries. Provide solid talent support for industrial technological innovation and high-quality social and economic development.

**Keywords:** New engineering; Vocational education; Development path

## 1 Significance of the project

The successive formation of the "Fudan Consensus", "Tianjin University Initiative" and "Beijing Guidelines" has clarified the direction and goals for the reform and innovation of higher engineering education in China, and as a result, a new term - "New engineering" - has emerged in higher education institutions. The construction of new engineering disciplines is a long and arduous task. Understanding the connotation of new engineering disciplines is as important as conducting practical explorations of new engineering disciplines. More and more scholars have conducted in-depth research and analysis on its connotation. For instance, Zhang Daliang believes that the construction of new engineering disciplines can promote the development of new engineering disciplines and drive the innovation and reform of existing disciplines. Ma Luting believes that compared with the old engineering disciplines, the new ones are more specialized and interrelated, and the two can be effectively combined and improved. Yu Dongsheng believes that the construction of new engineering disciplines should be in line with the purpose and teaching philosophy of higher engineering education, and at the same time, the model of talent cultivation should be clarified. Relevant policy requirements should be earnestly implemented, and international engineering education should be linked with China's engineering education, so as to innovate the mechanism of cultivating new engineering talents and carry out modern education and teaching in the context of the information technology era. To achieve intelligent, precise, information-based and big data-integrated teaching models, especially in the teaching of cross-disciplinary and related knowledge, it is necessary to focus on cultivating comprehensive talents, enabling students to possess the abilities of exploration, practice and innovation. Only in this way can we effectively promote scientific and technological progress and social development[1].

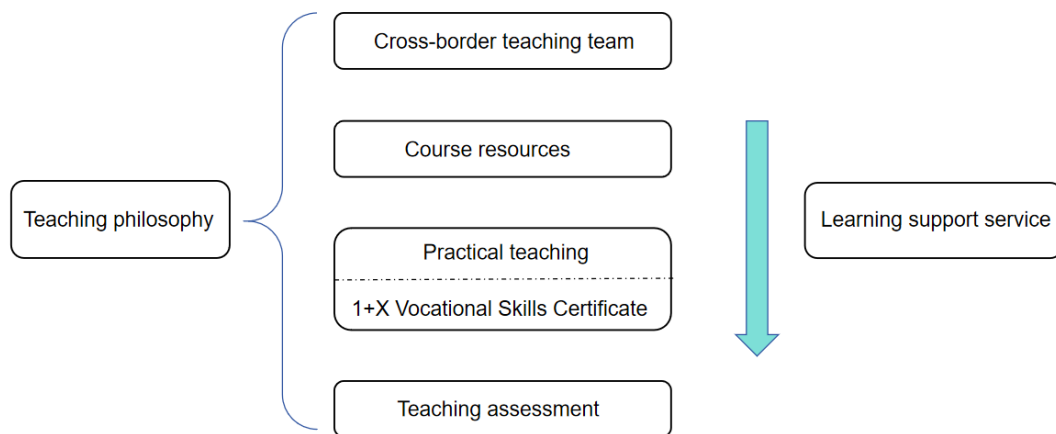


Figure 1: Core elements of courses under the background of new engineering

In the era of vigorous development of new engineering disciplines, conducting research on the innovative development path of vocational education specialties has profound and multi-dimensional significance. It is not only an urgent need for the transformation of vocational education itself, but also an important force for promoting industrial upgrading and social and economic development.

From the perspective of the development of vocational education itself, this research is the key to breaking through the constraints of the traditional education model and achieving transformation and upgrading. The professional Settings of traditional vocational education often lag behind industrial development, and the teaching content is disconnected from the actual job demands, resulting in the difficulty for students to directly apply what they have learned to their job positions. The new engineering discipline emphasizes interdisciplinary integration, technological innovation and the cultivation of practical abilities, which provides new ideas for the innovative development of vocational education specialties. Through in-depth research on the professional innovation and development paths under the background of new engineering, vocational education can adjust the professional structure in a timely manner, optimize the curriculum system, integrate emerging technologies and engineering concepts into teaching content, and make education closer to the forefront of industries. For instance, in the field of intelligent manufacturing, vocational education can offer specialized courses related to industrial robots and artificial intelligence to cultivate students' digital design and manufacturing capabilities, thereby enhancing the quality and adaptability of vocational education and strengthening its appeal and competitiveness.

For industrial development, this research is an important guarantee for providing high-quality technical and skilled talents and supporting industrial upgrading. The fields involved in new engineering, such as big data, cloud computing, and new energy, are all key directions for current and future industrial development. The demand for talents in these fields is not only huge in quantity, but also requires interdisciplinary knowledge, innovation ability and the ability to solve complex engineering problems. Vocational education, as the main battlefield for cultivating technical and skilled talents, its professional innovation and development can closely align with industrial demands and tailor the talents needed by enterprises. Through in-depth cooperation with enterprises, jointly formulating talent cultivation plans, developing courses and teaching materials, and building practical training bases, vocational education can cultivate compound talents who are proficient in both technology and management, providing solid talent support for the technological innovation and transformation and upgrading of industries. For instance, in the new energy vehicle industry, vocational education cultivates professional talents who not only master automotive manufacturing technology but also are familiar with new technologies such as battery management and intelligent driving. This can drive enterprises to accelerate product research and development and market promotion, and enhance the overall competitiveness of the industry.

From the macro perspective of social and economic development, this research is conducive to promoting employment and entrepreneurship and optimizing the economic structure. The innovative development of vocational education specialties under the background of new engineering can cultivate more high-quality talents that meet the demands of emerging industries and provide graduates with broader employment space. These talents can not only meet the demands of enterprises for high-end technical and skilled personnel, but also play an important role in the field of innovation and entrepreneurship by virtue of their own abilities and qualities. They can apply the knowledge and skills they have learned to carry out technological innovation and product research and development, give rise to new industries and business forms, and create more job opportunities and economic benefits for society. Meanwhile, the innovative development of vocational education specialties can also promote the coordinated development of the regional economy. Different regions can adjust the professional Settings of vocational education based on their own industrial characteristics and development needs, cultivate urgently needed technical and skilled talents locally, promote the characteristic and clustered development of regional industries, and achieve the optimization and upgrading of the economic structure[2].

The research on the innovative development path of vocational education specialties under the background of new engineering disciplines has significant project significance. It can not only promote the reform and development of vocational education itself, improve the quality of talent cultivation, but also provide strong talent support for industrial development and promote the sustained and healthy development of the social economy. Therefore, strengthening the research and practice in this field has important practical significance and far-reaching historical significance.

## **2 Synthesis of research**

Against the backdrop of the vigorous rise of the new engineering concept and its profound influence on the industrial pattern and educational ecosystem, the research on the innovative development path of vocational education specialties has become a focus of common concern in both the academic and practical fields. Many scholars have conducted in-depth discussions from different perspectives, providing rich theoretical basis and practical experience for the transformation and breakthrough of vocational education in the new engineering wave.

The new engineering discipline aims to respond to the new round of technological revolution and industrial transformation, emphasizing interdisciplinary integration, technological innovation and the cultivation of practical abilities. It is dedicated to fostering compound talents with engineering practice capabilities and innovative spirit. Vocational education takes cultivating high-quality technical and skilled talents who can meet the needs of the front line of production, construction, management and service as its fundamental task. The two have a high degree of alignment in their training objectives, both emphasizing the improvement of practical skills and professional qualities. Some scholars have pointed out that the engineering education concept advocated by new engineering disciplines is in perfect harmony with the "learning by doing and doing while learning" teaching model of vocational education. The technological innovation requirements of new engineering disciplines provide a new direction for the professional development of vocational education, while the practical teaching system of vocational education offers important support for the cultivation of new engineering talents. For instance, in the field of intelligent manufacturing, the technological concepts of new engineering disciplines drive the transformation of vocational education's professional Settings towards intelligence and digitalization, while the practical training bases and school-enterprise cooperation models of vocational education provide a platform for the practical application of new engineering technologies.

At present, certain achievements have been made in the innovative development of vocational education specialties, but many challenges are also faced. In terms of professional Settings, some vocational colleges can closely follow the development trend of new engineering disciplines, promptly adjust and optimize their professional structures, and offer majors related to emerging industries such as big data, artificial intelligence, and new energy. However, there are still some institutions that have problems such as lagging professional Settings and severe homogeneity, and fail to fully combine the regional industrial characteristics and market demands. In terms of the construction of the curriculum system, some vocational colleges actively introduce courses related to new engineering disciplines, emphasizing the cultivation of students' interdisciplinary knowledge and innovation ability. However,

the update speed of course content still fails to keep up with the pace of technological development, and the connection between courses is not tight enough, lacking systematicness and integrity. In terms of the construction of the teaching staff, vocational colleges generally face a shortage of "dual-qualified" teachers. These teachers lack practical experience in enterprises and the ability to apply new technologies, making it difficult for them to be competent for teaching tasks under the background of new engineering. In addition, the conditions for practical teaching also need to be improved. The training equipment in some colleges and universities is outdated and insufficient in quantity, which cannot meet the needs of students' practical operations.

Many scholars emphasize that the professional Settings of vocational education should be closely aligned with the regional industrial structure and dynamically adjusted in accordance with industrial demands. On the one hand, it is necessary to strengthen the research and analysis of regional industrial development, understand the development trends of emerging industries and the demand for talents, and promptly set up relevant majors or adjust the professional directions. For instance, in the Yangtze River Delta region, with the rapid development of the integrated circuit industry, local vocational colleges have successively established integrated circuit technology majors, providing a large number of professional talents for the industry's development. On the other hand, it is necessary to focus on the construction of professional clusters. By integrating relevant professional resources, professional clusters with complementary advantages and coordinated development can be formed to enhance the adaptability and competitiveness of the specialties. For instance, in the automotive industry, vocational colleges can establish automotive professional clusters covering specialties such as automotive manufacturing, automotive maintenance, and automotive marketing, to meet the talent demands of the entire automotive industry chain[3].

The curriculum system is the core carrier for talent cultivation. Under the background of new engineering, the vocational education curriculum system should focus on integrating with technological innovation. On the one hand, it is necessary to update the course content, incorporate new technologies, new processes and new standards into the teaching system, so that students can be exposed to the cutting-edge knowledge of the industry. For instance, in computer science courses, relevant contents such as artificial intelligence and big data analysis should be added to cultivate students' data analysis ability and algorithm design ability. On the other hand, it is necessary to enhance the integration and connection among courses, break down disciplinary barriers, and build an interdisciplinary curriculum system. For instance, in the major of intelligent manufacturing, courses such as mechanical design, electrical control, and computer programming are organically integrated to cultivate students' comprehensive engineering capabilities. In addition, teaching methods such as project-based teaching and case teaching can also be introduced. Taking actual engineering projects as the carrier, students can learn and master knowledge and skills in practice.

"Dual-qualified" teachers are the key to the innovative development of vocational education specialties. Scholars have proposed that it is necessary to strengthen the construction of the teaching staff in vocational colleges and enhance teachers' practical teaching ability and the application ability of new technologies through various means. On the one hand, a system for teachers to practice in enterprises should be established. Teachers should be regularly arranged to take up positions in enterprises for training, participate in the technological research and development and production management of enterprises, and accumulate practical experience. For instance, some vocational colleges have collaborated with local enterprises to establish teacher practice bases. Teachers spend no less than the stipulated time in enterprises for practice each year, effectively enhancing their practical abilities. On the other hand, it is necessary to enhance the training and further education of teachers, encourage them to participate in new technology training, academic exchange activities, etc., broaden their horizons and update their educational concepts. In addition, technical backbones and skilled craftsmen from enterprises can also be introduced to serve as part-time teachers to enrich the teaching staff and improve the teaching structure.

Practical teaching is an important link in vocational education. Practical teaching under the background of new engineering requires more advanced equipment and a more realistic environment. Scholars suggest that vocational colleges should increase investment in practical teaching conditions, update training equipment and build high-level training bases. For instance, some vocational colleges have collaborated with enterprises to jointly establish intelligent manufacturing training centers, big data

training centers, etc., providing students with real production environments and practical platforms. Meanwhile, it is necessary to innovate the practical teaching mode and adopt means such as virtual simulation and distance teaching to improve the effect and quality of practical teaching. For example, in the chemical experiment teaching with higher risks, the adoption of virtual simulation technology for students to conduct simulation operations not only ensures the safety of students but also improves the teaching effect.

Foreign countries have accumulated rich experience in the innovative development of vocational education specialties. The "dual system" vocational education model in Germany is led by enterprises. Schools and enterprises closely cooperate to jointly formulate talent cultivation plans and carry out teaching activities, cultivating students with strong practical abilities and professional qualities. Community colleges in the United States focus on aligning with local industries, flexibly adjusting professional Settings and course contents based on market demands, and providing strong talent support for regional economic development. The "teaching factory" model in Singapore brings the actual production environment of enterprises into schools, allowing students to learn and practice in real working scenarios, achieving a seamless connection between teaching and production. Some domestic vocational colleges have also carried out beneficial explorations and practices. For instance, Shenzhen Polytechnic has achieved good results by cooperating with well-known enterprises such as Huawei and Tencent to jointly build industrial colleges and conduct order-based training. These domestic and international experiences provide useful references for the innovative development of vocational education specialties under the background of new engineering.

### **3 Analysis of the current situation**

#### ***3.1 Professional Settings are disconnected from industrial demands***

Professional setting is the starting point of talent cultivation in vocational education. However, at present, there is a significant disconnection between the professional Settings of many vocational colleges and the demands of industries. On the one hand, some institutions lack in-depth research on the demands of regional industries when setting up new majors. Take the new energy industry as an example. With the global demand for clean energy increasing day by day, the new energy industry in many regions has risen rapidly, and the demand for related professional talents has grown explosively. However, some local vocational colleges failed to capture this trend in time. The setting of related majors lagged behind, resulting in a continuous expansion of the talent gap in the industry. In order to recruit suitable talents, enterprises have to spend a large amount of money to introduce them from other places. This undoubtedly increases the operating costs of enterprises and also affects the development speed of the industry.

On the other hand, the phenomenon of homogenization in professional Settings is serious. Many vocational colleges blindly follow the trend to set up popular majors, such as e-commerce and computer application, in pursuit of enrollment scale and short-term benefits. These majors lack distinctive features in terms of curriculum design and teaching content, and the students they cultivate have insufficient competitiveness in the job market. Moreover, the emergence of a large number of homogeneous majors has led vocational colleges into a vicious competition, which not only wastes educational resources but also makes it difficult to meet the diversified demands of industries. For instance, in some regions, many vocational colleges have set up e-commerce majors. However, most of the students they cultivate can only engage in basic e-commerce operation work and lack in-depth mastery of emerging e-commerce models and technologies, thus failing to meet the demands of enterprises for high-end e-commerce talents[4].

#### ***3.2 The update of the curriculum system lags behind***

The technological update and replacement speed in the new engineering field is extremely fast, while the update speed of the curriculum system in vocational colleges lags far behind. In computer-related majors, traditional software development technologies have gradually been replaced by emerging technologies such as artificial intelligence, big data and cloud computing. However, the textbooks and teaching contents of some institutions still remain on traditional software development technologies,

with less coverage of emerging technologies. This makes it impossible for students to come into contact with the cutting-edge knowledge and technologies of the industry during the learning process, and it is difficult for them to adapt to the actual needs of enterprises after graduation.

Furthermore, the connection between courses is not tight enough, lacking systematicness and integrity. The vocational education curriculum system should be an organic whole, and each course should be interrelated and mutually supportive. However, in actual teaching, due to reasons such as unreasonable curriculum design and unscientific teaching plans, there is a disconnection between courses. For instance, in the major of mechanical manufacturing, there is a lack of effective connection among courses such as mechanical drawing, mechanical design, and mechanical manufacturing technology. Students find it difficult to integrate the knowledge they have learned and form a complete knowledge system during the learning process. This not only affects students' learning outcomes, but also reduces their practical and innovative abilities.

### ***3.3 The construction of the teaching staff is weak***

"Dual-qualified" teachers are the key to the innovative development of vocational education specialties. However, there are many problems in the construction of the teaching staff in vocational colleges at present. First of all, teachers lack practical experience in enterprises. Many teachers in vocational colleges directly enter schools to teach after graduating from universities, lacking practical working experience in enterprises and having an insufficient understanding and mastery of new technologies and new processes. During the teaching process, they can only read from the textbook and are unable to integrate the actual cases and projects of enterprises into their teaching, resulting in a disconnection between the teaching content and the actual work.

Secondly, the training mechanism for teachers is not perfect. Although vocational colleges regularly organize teachers to participate in training, the content and methods of the training are disconnected from the actual needs. The training content often focuses on imparting theoretical knowledge and lacks practical operation and case analysis. Most of the training methods also adopt the form of centralized lectures, lacking interactivity and pertinence. This makes it impossible for teachers to effectively enhance their practical teaching ability and the application ability of new technologies after training.

Finally, it is rather difficult for vocational colleges to introduce technical backbones and skilled craftsmen from enterprises as part-time teachers. The technical backbones and skilled craftsmen of enterprises have rich practical experience and professional skills, but their main jobs are very busy and it is difficult for them to spare enough time to teach at schools. Moreover, there are also some problems in vocational colleges regarding the treatment and management of part-time teachers, which leads to low enthusiasm among technical backbones and skilled craftsmen in enterprises to serve as part-time teachers.

### ***3.4 Insufficient practical teaching conditions***

Practical teaching is an important link in vocational education, but at present, there are many deficiencies in the practical teaching conditions of vocational colleges. The practical training equipment in some colleges and universities is outdated and insufficient in quantity, which cannot meet the needs of students' practical operations. In the intelligent manufacturing training center, some equipment is seriously aged and cannot operate normally, which greatly reduces the practical teaching effect of students. Moreover, with the development of new engineering technologies, the requirements for practical training equipment are getting higher and higher. Some institutions, due to limited funds, are unable to update their practical training equipment in a timely manner, resulting in a disconnection between practical teaching and industrial development.

In addition, the construction and management of practical teaching bases are not standardized enough. Although some vocational colleges have established some practical teaching bases, they lack in-depth cooperation with enterprises and are unable to provide students with real production environments and practical opportunities. There are also some problems in the management of practical

teaching bases, such as untimely equipment maintenance and unreasonable practical teaching plans, which have affected the quality of practical teaching.

### ***3.5 The evaluation system is not perfect***

At present, the evaluation system for professional innovation and development in vocational colleges is still not perfect. The evaluation criteria overly focus on students' theoretical examination scores while neglecting the cultivation of practical ability and innovation ability. In the evaluation process, students' test paper scores are often taken as the main basis, while insufficient attention is paid to their performances in practical operations, project design, innovation competitions, etc. This makes students pay too much attention to the acquisition of theoretical knowledge during the learning process, while neglecting the cultivation of practical ability and innovative ability.

The evaluation subjects are single, mainly internal evaluations within schools, lacking the participation of external subjects such as enterprises and industries. The demands and evaluation standards for talents of enterprises and industries differ from those of schools. If their participation is lacking in the evaluation process, it will be impossible to accurately reflect the quality of talent cultivation in vocational education. Moreover, the application of the evaluation results is not sufficient and has not been effectively fed back into professional construction and teaching reform. When formulating professional construction plans and teaching reform schemes, schools often fail to fully consider the evaluation results, resulting in a lack of pertinence and effectiveness in professional construction and teaching reform.

Under the background of new engineering, the innovative development of vocational education specialties is confronted with many problems, such as the disconnection between professional Settings and industrial demands, the lagging update of the curriculum system, the weak construction of the teaching staff, the insufficient practical teaching conditions and the imperfect evaluation system. To address these issues, it is necessary for vocational colleges, the government, enterprises and all sectors of society to make joint efforts and take effective measures to promote the innovative development of vocational education specialties, improve the quality of talent cultivation in vocational education, and provide strong talent support for industrial upgrading and social and economic development.

## **4 Research and Practice Content**

### ***4.1 Innovate the talent cultivation model***

Improve and enrich the teaching materials of new engineering schools, change the traditional teaching method that mainly focuses on theoretical knowledge narration and takes calculation as the core, enable students to study around problems and learning objectives, associate the learned knowledge under the guidance of problems and objectives, and combine public courses with professional courses. Realize a multi-level and multi-scenario, stepped engineering teaching model to enable students to achieve multi-disciplinary learning, enhance their comprehensive abilities and broaden their horizons. New industries require talents to have rich knowledge accumulation, certain innovation ability, critical thinking, patriotic thoughts, as well as strong communication skills and spatial imagination ability, etc. When constructing the curriculum system and teaching content, it is necessary to conduct research in enterprises. Through the research, more employment goals and job information related to the major can be obtained, and the nature of the job can be analyzed to provide guidance for the subsequent targeted teaching. Modules for professional knowledge, professional ability and professional quality should be set up[5].

### ***4.2 Build a new platform for talent cultivation through cooperation among the government, schools and enterprises***

There are significant differences between the construction of new engineering disciplines and that of old ones. For instance, the construction of new engineering disciplines requires strengthening cooperation between schools and enterprises, emphasizing the integration of industry and education as well as international cooperation. Only in this way can a collaborative education mechanism be

established, achieving resource sharing and win-win cooperation, and creating a favorable environment for students' employment and development. Vocational colleges in Yangzhou should, in light of the city's industrial and sectoral conditions, build a responsibility community for vocational education that is jointly discussed, constructed and shared by the government, schools and enterprises, based on the practical teaching system of new engineering disciplines and the system for expanding professional qualities. Yangzhou has a large number of high-tech enterprises. Vocational colleges can, with the support of the government departments, choose enterprises that are in line with their new engineering majors to jointly build talent cultivation plans and training rooms. This process requires the government to introduce corresponding incentive policies to stimulate the motivation of enterprises to cooperate. Vocational colleges with the necessary conditions and enterprises of considerable scale should integrate industry, academia and research in terms of concepts, mechanisms, models and conditions, carry out in-depth cooperation and achieve win-win interaction. They can form school-enterprise consortia, jointly build industrial colleges or industry colleges, and even jointly build a park college with a certain industrial park. This will truly realize that recruitment is recruitment and recruitment is recruitment, meeting the talent needs of new industries. At the same time, it can enhance the school's ability to cultivate new engineering talents.

#### ***4.3 Construction of New Majors***

Break the boundaries of traditional engineering, overcome the limitations of traditional engineering on specialties, promote economic development in combination with the characteristics of scientific and technological development and the demands of the industrial revolution, grasp the latest talent demands and future development directions of industrial development, plan the construction of new specialties, and actively set up new specialties that are in line with the industrial positions of new technologies, new business forms, new industries and new models in Yangzhou. Vocational colleges conducted research on relevant high-tech enterprises in Yangzhou, such as those in intelligent manufacturing, new materials, photovoltaic, aviation, high-speed rail, Internet of Things and other emerging industries, to understand the demand for skilled talents in these enterprises and build new majors based on the market demand for new engineering disciplines.

#### ***4.4 Renovation of Old Specialties***

Yangzhou vocational colleges need to analyze the disciplines and majors corresponding to the local industries and sectors, and transform, improve and upgrade the traditional and existing (old) disciplines and majors. This is somewhat different from the teaching content of traditional engineering, because the old engineering majors focus on the traditional industrial model, while the new engineering focuses on the new engineering model. For instance, transform the traditional mechanical manufacturing major into the intelligent manufacturing major. Promote the development of new majors by reforming, innovating and integrating traditional ones. Of course, in this process, support from multiple disciplines is needed, abundant resources should be invested, and each vocational college should give full play to its own advantages, transforming the traditional division of majors into cross-border integration. It goes beyond the single "craftsman goal" of traditional vocational education to meet the needs of new engineering disciplines for "specialized and multi-skilled" compound talents.

#### ***4.5 Introduction and Training of teaching staff***

The overall development of teachers' professional abilities fundamentally determines the quality of talent cultivation. To better implement the cultivation of high-quality and highly skilled compound talents, the construction of new engineering disciplines has put forward higher requirements for teachers' comprehensive abilities in all aspects. Therefore, under the background of new engineering, the introduction of teachers needs to be comprehensively considered, such as the background, knowledge structure, working experience and moral quality of teachers, etc. Teachers lacking teaching experience and insufficient knowledge accumulation cannot undertake the education of new engineering. At the same time, in the teaching of new engineering disciplines, outstanding teachers and technical talents from enterprises should also be invited to conduct teaching. We should not blindly pursue high academic qualifications. High skills, high technology, innovation ability and comprehensive quality are the key.



## 5 Conclusion

The innovative development of vocational education specialties under the background of new engineering disciplines is an inevitable choice to meet the demands of The Times and promote industrial upgrading and social economic development. Through this research and practical exploration, we have deeply realized the opportunities and challenges that vocational education faces in the wave of new engineering. Innovating the talent cultivation model, breaking the limitations of traditional teaching, and achieving multi-disciplinary integration and comprehensive ability improvement are the core tasks for the innovative development of vocational education specialties. Building a new platform for cooperation in education among the government, schools and enterprises, promoting resource sharing and collaborative education, and creating favorable conditions for students' employment and development are key measures for the deep integration of vocational education and industries. The concurrent development of new majors and the transformation of old ones, closely aligning with industrial demands and laying out future development directions, is an important way to optimize the professional structure of vocational education. Meanwhile, the introduction and cultivation of teaching staff, as the fundamental guarantee for the innovative development of the major, should focus on the comprehensive ability and practical experience of teachers to build a high-quality "dual-qualified" teaching team.

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