Thoughts on the Cultivation of Skilled Talents under the Mode of Integration of Production and Education
—Take Xijing University as an Example

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Abstract—With the continuous development of social economy, the skilled professionals trained by higher vocational colleges have been unable to meet the needs of social development, so it is necessary for skilled talents to further improve their own innovation ability. In this case, higher vocational colleges should actively optimize the teaching staff, build the teaching curriculum system, expand the teaching resources, enrich the teaching mode, adjust the evaluation method, and cultivate students' innovation ability on the basis of enhancing their professional skills.

Keywords—Institutions of Higher Learning, Skills Innovative, Talent

I. INTRODUCTION
At present, the shortage of high-end applied and skilled talents in China has become a short board that restricts industrial upgrading and economic development. Many enterprises are faced with a serious shortage of application-oriented talents, especially high-end application-oriented talents. Applying undergraduate education is an important trend in the development of higher education in the world. From a global perspective, the development of modern science and technology has taken on some new characteristics, such as the accelerated industrialization of research results, the deep penetration of scientific and technological achievements into all fields of society, and so on. Developing application-oriented undergraduate education is an important measure for higher education to comply with this trend [1].

The training of skilled and innovative talents in higher vocational colleges is not only the demand of social development, but also the basic condition to promote the innovation in various fields. Therefore, higher vocational colleges should actively change the previous teaching concept of cultivating students' professional knowledge and skills, and focus on stimulating students' innovation consciousness, training students' innovation ability, and shaping students' innovation personality [2].

II. MEASURES FOR THE CONSTRUCTION OF HIGH-LEVEL TEACHING STAFF
For high level teaching staff construction, colleges and universities need to according to the school of professional division, school size and school location, establish reasonable system of teaching staff, teachers, educational background, ability, professional level and the number of vocational colleges development strategic objective, professional courses and the professional set match, solve the problem of the proportion of teachers and students, comprehensive adjustment of teachers. To strengthen the training of teachers, improve their own professional quality, encourage and support teachers to further their study, improve their own ability and business ability, and strengthen the training of teachers' skills, so as to cultivate interdisciplinary talents in line with the needs of the development of The Times for enterprises. Employ technical and technical experts from relevant enterprises as part-time teachers in colleges and universities to realize cross-border cooperation and interdisciplinary learning [3].

In the recruitment of new teachers, we should broaden the recruitment channels and recruit for the society: skilled technical backbone, excellent doctoral students and master graduates, skilled craftsmen in the society. We should employ a variety of talents to teach in higher vocational colleges, formulate plans for the introduction of high-level talents, further adjust the construction of application-oriented high-level teaching staff, and carry out open and fair recruitment so that talents of different levels can enjoy different treatment. For the units that need to focus on development, it is necessary to increase the recruitment of talents and the cooperation between relevant enterprises. Special treatment should be given to special situations, and high-level academic teams and scholars with small achievements in related research should be introduced as part-time teachers in colleges and universities to gather more leading figures.

Deepen the cooperation between universities and enterprises, and realize the sharing of talents resources between universities and enterprises. Establish training courses in scientific research institutes or enterprises in
related fields, select teachers to participate in relevant training, in the training, absorb new knowledge, understand the new needs and new directions of the field, and improve the practical ability of teachers in this major. Make full use of social human resources, actively from relevant enterprises to find a practical experience of technical backbone of part-time teachers, the formation of the combination of professional teachers and part-time teachers, solve for industry transformation and the integration of theoretical knowledge of the problem, full-time teachers and part-time teachers learn each other, complement each other, help improve the level of teaching staff construction.

III. HIGH-END SKILLED TALENTS

A. What is a High-End Skilled Talent?

Skilled talents refer to those who master specialized knowledge and technology, possess certain operational skills and use them to carry out practical operations in front-line positions. Who is the skilled talent? Some people think that high in the "practical skills", production services and other front-line key posts or key links to play a role, can solve production technical problems; Some people think that high in the "professional qualification", to obtain the professional qualification of senior technicians, and can use superb skills in the process of complex, technology-intensive positions to solve problems; Some people think that "high in the overall", is "international, high level, innovative, compound" skilled talents; Some people think that "high in the expertise", in a certain field has outstanding expertise, is to have their own "unique skills" of the "great country craftsman" [4].

B. How to Cultivate High-End Skilled Talents?

Vocational colleges are the main field of training skilled talents, but the shortage of academic-type skilled talents training is also obvious. In order to overcome these shortcomings, various regions have carried out extensive exploration and formed such models as "general + post + high", "post + post" and "post + high". Which is better? Do not take it for granted, do not theorize, do not judge simply, "prescription" good, the key to see "curative effect". The benefits of the model need to be tested in practice. The cultivation of skilled talents cannot be separated from the participation of enterprises. School-enterprise co-education is the consensus of the cultivation of skilled talents, and also the difficulty of the implementation.

C. How to Evaluate High-End Skilled Talents?

Is education branch affirmative, still labor branch affirmative, perhaps third party affirmative? In what way? Is it through the examination of "knowledge + skills", or through the recognition of skills competition, or according to the relevant performance evaluation, or directly according to the level of skills? Evaluation plays a guiding role.

IV. THE NEW CHARACTERISTICS OF CULTIVATING THE CRAFTSMAN SPIRIT OF SKILLED TALENTS IN THE NEW ERA

In the new era of socialism with Chinese characteristics, higher vocational education has realized the fundamental transformation from scale development to connotation development, which determines that higher vocational education personnel training objectives have been changed, pay more attention to the training of highly skilled personnel with professional ethics, responsibility consciousness, innovation consciousness and "craftsman spirit" [5].

A. To Combine Work with Study as the Main Line, Adhere to the Unity of Knowledge and Action

Compared with general education, vocational education is special in that it not only pays attention to students' learning of basic theoretical knowledge, but also needs to cultivate students' practical hands-on ability, so that students can master relevant technologies and skills corresponding to social needs. Vocational education needs to set up relevant systematic theory courses to cultivate skilled talents, so as to meet the needs of students' "knowledge". On the basis of good theory, it also needs "action" to apply theoretical knowledge to specific practice, so as to achieve the unity of knowledge and practice. Due to the particularity of vocational education, it is necessary to strengthen cooperation with enterprises, give full play to the role of school-enterprise cooperation in educating talents, and integrate work with study and knowledge with practice.

B. Based on the Principle of "Cultivating People with Morality", We Practice both Morality and Skills

In Chinese traditional culture, morality is the most important, no matter in which stage of school education is inseparable from moral education for students. Virtue is the foundation of the people, technology is an important means to achieve life, when a person's skills reached the level of proficiency, but also to virtue as the fundamental, to do both skills, virtue and art. The cultivation of skilled talents not only cultivates students' basic theoretical accomplishment and technical accomplishment, but also pays more attention to their comprehensive accomplishment. At present, higher vocational colleges carry out the concept of "cultivating people with morality", put students' moral education in the first place, and promote both moral and technical skills, so as to cultivate skilled talents with good humanistic quality and high quality.

C. Quality Development as the Core, Adhere to Dedication and Joy

Germany's vocational education enjoys a high reputation in the world. "Made in Germany" has always been a synonym for quality, mainly due to the quality of talents trained by German vocational education. German craftsmen strive for excellence in every product and strive to create high-quality products. The theory advocated by "craftsman spirit" coincides with the value orientation of the cultivation of skilled talents. With the advent of the industry 4.0 era, the market demands more and more highly skilled talents. In order to achieve the transformation and upgrading of the industry from "Made in China" to "China Manufacturing", it is necessary to cultivate a large number of dedicated and happy professionals and high-quality skilled talents suitable for the market demand as the value support.

V. THE IMPLEMENTATION OF THE INTEGRATION OF ENGINEERING TEACHING TO CULTIVATE HIGH-QUALITY SKILLED TALENTS

A. We will Build a Talent Training System Integrating Engineering with Engineering

"Measures for promoting school-enterprise cooperation
in vocational schools” emphasizes that "enterprises should play an important role as the main body of running schools in the implementation of vocational education, and promote the formation of a joint educational mechanism featuring the integration of industry and education, school-enterprise cooperation, the combination of work and study, and the integration of knowledge and practice". Adhering to this educational principle, vocational schools should take the initiative to enter the market, according to the market main body and the demand of new drivers, student-centered, in accordance with the "three docking and integration", explore new engineering, implement apprenticeship, carry out lifelong skills training, and establish a school-enterprise dual system, integration of engineering talent training system [6].

We will revise the vocational education law and establish an integrated education mechanism. The ministry of education, the ministry of human resources and the ministry of social security should seriously study and summarize the practical experience of the integration of engineering and engineering teaching in China in recent ten years, and turn the successful practice and system into law. The integration of engineering and engineering teaching and lifelong skills training are determined as educational principles by law.

Establish integrated teaching system and management system. We will implement the school-enterprise dual system, deepen the integration of industry and education, serve students' future work needs, and establish an integrated teaching system of engineering with multi-subject participation. The curriculum system is developed by combining the requirements of vocational activities and the transformation of new driving forces with the standards and norms of vocational qualifications, the educational and teaching activities are carried out on the basis of the working process, the teaching design is aimed at cultivating students' comprehensive professional qualities, and the teaching quality is evaluated by the social market demand and vocational qualifications.

Innovate the teaching environment integrated with engineering. Based on the actual situation of enterprise posts, the traditional teaching environment of the school is transformed, and the integrated workstations of engineering and engineering are established. Either by introducing enterprises into the school, or by the school in the enterprise, so that students in the real enterprise work and production environment to learn technical skills.

B. Set up an Engineering Integrated Teaching Team
   Establish an integrated engineering leadership team. To implement the integrated teaching of engineering and engineering, it is necessary to establish a leading team composed of schools, enterprises, industries or scientific research institutions to organize and supervise, so as to ensure the quality and improve the efficiency. This requires that the person in charge of the school should be a teaching expert and a technical master, understand the management and coordination, be able to grasp the trend of the changes in education and teaching, skills and technology, and have the spirit of pioneering and practical craftsman, and be able to organize and lead and carry out integrated teaching.

   Improve the quality of teachers, set up an integrated teaching studio. The implementation of integrated teaching of engineering must rely on the high-quality teacher team. The newly hired teachers should be masters or experts with more than 5 years' working experience in enterprises or trade associations, and should have a bachelor's degree or above in an application-oriented major and obtain professional teacher qualifications. Strengthening the quality of "double division" from the source has established the system guarantee.

VI. IN PRACTICE, THE COMPREHENSIVE QUALITY AND ABILITY OF VOCATIONAL COLLEGE STUDENTS ARE CULTIVATED AND TEMPERED

In fact, some higher vocational colleges have carried out the specific practice and exploration of the mode of combining work with study, and have made a lot of gratifying achievements. In order to cultivate high-skilled application-oriented talents, it is necessary to face students and practice, reconstruct the work process and the guidance system of vocational qualification certification, take the combination of work and study as the starting point, rebuild the course content according to the occupational standards of posts, weaken the systematization of course teaching, and train and train the comprehensive quality and ability of students in higher vocational colleges in practice. Specific from the following points to start:

A. Study the Characteristics of Higher Vocational Students
   Facing students, we must study the characteristics of students in higher vocational colleges. In terms of knowledge and ability, most vocational college students have poor knowledge foundation, weak learning ability and low scores in the college entrance examination, but they have great potential in practical ability or ability of social contact, communication and cooperation, that is, they have strong social adaptability in addition to the lack of book knowledge.

   In terms of psychology, compared with undergraduate students, the advantages of vocational college students lie in:(1) good communication, like activities, good at contact, willing to communicate, the courage to participate in a variety of activities, a relatively wide range of activities and social circle.(2) prefer operation, they prefer practice to book learning; They prefer practice to written work.(3) the importance of friendship, most vocational students in the past by the teachers, parents, students praise and respect too little, they especially yearn for the attention of others, especially the teachers of their understanding, care and respect, once this demand is met, they will be particularly cherish and double return. In addition, higher vocational students also have some weaknesses such as lack of confidence, little responsibility and lack of will.

B. Scientific Implementation of Effective Education
   Facing to students, it is important to promote the overall healthy development of higher vocational students; To understand and study students is to carry out effective education scientifically according to the specific reality of students' knowledge and ability characteristics and psychological characteristics, so that higher vocational students can achieve better development.

   According to the characteristics of higher vocational students, in the course construction, the curriculum system (module) is set up based on the work task and work process. This course is more easily accepted by higher vocational students than the courses under the subject system. The work
task oriented, its theory part does not emphasize systematization, follows in the actual work "must, sufficient" principle can. It is important for vocational students to master the systematic and complete steps, procedures, practices and skills in various processes. Learn how to behave, do things, communicate and create, improve students' learning attitude and learning effect, so that they can accept theoretical knowledge and practical knowledge; and cultivate high-quality and high-skilled professionals [7].

Higher vocational colleges should strongly advocate happy education and promoting education; Let each higher vocational students are full of confidence, physical and mental health, strength is stronger, longer strengths, to task oriented curriculum system, practical, operational, task, content, and play an important measure of vocational students specialty, higher vocational colleges should carry out flexible length, adding courses related to the job, vocational skills, provide more space for students to choose their, so as to mobilize students' learning enthusiasm, initiative and creativity, promote the development of students' expertise and personality. It should not be regarded as the direct transfer of knowledge and experience, but as the process of communication and creation. The objectives of the course should not only focus on knowledge and skills, but also pay more attention to the formation and development of the students' emotions, attitudes and values, so that the students can develop harmoniously.

C. Strengthen the Concept of Practice, Fully Understand the Role of Practice

To completely change the traditional academic view and student view, strengthen the practical concept, and fully understand the role of practice, vocational students such as operational skills, communication awareness, cooperation ability, decision-making judgment and other comprehensive qualities, students need to practice to gradually form. Anyone is through practice, after doing to know the difficulty, to know the shortage, and then will take the initiative to learn, explore.

Higher vocational teachers' understanding of the value of the work task driven teaching, from the traditional lies in the higher vocational students to master the idea in how much knowledge and skills, more important to higher vocational students for the knowledge and skills could be used in the practical and solve specific problems, whether or not they can translate into higher vocational students' employment and entrepreneurship skills; Class reading is the study, practice training is more important study. In the whole process of receiving higher vocational education, we advocate and encourage higher vocational students to take advantage of all available time, including summer and winter vacations, holidays, weekends and even part-time jobs in their spare time, to engage in practical activities related to their major. Good test scores are good students, recognized by the enterprise reuse, employment and entrepreneurship of good students is a good student. Might as well set up "practice achievement award", "hand handyman award" and other permanent awards. Every year and every semester to encourage vocational students to consciously and actively put into practice, and keen to think, improve, create small inventions small innovation, learning to use.

D. Establish a Long-Term Management Mechanism

Firstly, accelerating the construction of off-campus training bases in higher vocational colleges is one of the most important measures to solve the practical ability of higher vocational students. With the aim of all-round, deep, close and long-term development, we establish industry-university-research cooperation bases with all kinds of suitable enterprises, shopping malls, companies, schools, hospitals and research institutes, so as to meet the needs of professional practice and training and expand the employment channels for vocational students.

Secondly, strengthen the organization and management of the practice link in the combination of work and study. Vocational students will be separated from the school environment in a long period of time. For the first time, they go to the society, to the enterprise, in a completely different social environment from the school, they will encounter all kinds of people and all kinds of different things. A lot of ideas will be generated when confronted with a variety of problems that cannot be predicted in advance. Only by strengthening the education and scientific management of students in a targeted way can we ensure the completion of teaching tasks combining work with study. Establishment of modern apprenticeship is a new mode of skill imparting and education jointly composed by schools and enterprises. It is an effective way to cultivate talents in higher vocational colleges in the new era, from the traditional one-to-one skill imparting mode of teachers and apprentices to the mentoring management mode composed of skill mentors (masters), professional mentors and ideological and political tutors.

Modern apprenticeship, vocational students in the enterprise internship, to have a correct identity, internal identity is a student, must abide by the school's rules and regulations, organizational discipline, the completion of vocational skills practice tasks; As an apprentice and an employee, I must abide by the rules and regulations, organizational discipline and corporate culture of the enterprise, obey the management, and complete the job according to the work standards. The school and the enterprise work together in accordance with the double standards of teaching and production to carry out stage and term assessment on the students, and those who meet the standard in the stage assessment can get corresponding credits and grades, as well as the reward of job rotation or salary increase.

VII. EXPLORATION ON THE CONSTRUCTION OF TALENT CULTIVATION SYSTEM OF MIXED OWNERSHIP SECONDARY COLLEGES

A. To Build Professional

With the integration of industry and education as the main line, and with the goal of cultivating talents in line with the needs of enterprises in the industry, the multi-specialty co-construction mode is explored. Guided by the market demand and combined with the development trend of regional economy, the construction of discipline and specialty is carried out to meet the talent demand of enterprises in the standard industry, and the scale of specialty setting and enrollment is determined. Through the talent demand and talent forecast, the industry enterprise formulates the talent standard and timely transmits the talent demand information to the second-level college. The second-
level college adjusts the talent training program according to the enterprise's talent standard demand, so as to reduce the blindness and inapplicability of talent training.

B. Build the Course

We will explore the way to connect the positions of enterprises with the curriculum system, and set up the training goal of curriculum development team jointly by both schools and enterprises. The college's own teachers mainly do the overall design of the curriculum, the systematic knowledge of the explanation, the enterprise teachers mainly engaged in the selection of teaching projects, the interpretation of empirical knowledge and the guidance of practical operation to students. Professional teachers and enterprise teachers jointly completed the course teaching design, textbook compilation, classroom project selection, teaching organization and implementation and teaching results evaluation [8].

C. Set up Experimental Training Base

With "deepening school-enterprise cooperation and resource sharing" as the starting point, it makes use of enterprise resources to build internship and training bases, and promotes the modern "double-tutor" apprenticeship talent cultivation model by introducing enterprises into schools and project-style teaching.

D. The Construction of "Dual-Energy" Teacher Team

The construction and training of teachers are directly related to the quality of school education and teaching, and are the key factors that determine whether a school can achieve sustainable development. Based on mixed sector of the secondary school of the current situation of the construction of "double type" teachers widely research and objective understanding, analysis of the "double type" teachers team construction problems, through to the "double type" teachers' introduction mechanism, standards, the design of the evaluation system, the improvement of the incentive mechanism of multi-dimensional exploration, construct mixed ownership under the "double type" teachers team construction general model.

VIII. CONCLUSION

The state has recognized the importance of the mode of "industry-education integration, school-enterprise cooperation" to develop vocational education, and has started to introduce relevant policies. However, due to the level of economic development, vocational education environment and educational tradition, the operating system of school-enterprise cooperation has not been established, and the whole is still in the primary stage. The reform of vocational education with the integration of industry and education and school-enterprise cooperation is a long-term and arduous task. There are still many problems to be explored and studied [9].

REFERENCES