

Research and Practice on the Training Mode of Applied Talents in Local Undergraduate Universities under the Background of Deep School-Enterprise Integration—Take the civil engineering major of our school as an example

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Abstract: This paper analyzes the main problems existing in the cultivation of applied talents in local undergraduate colleges. These questions include Talent training positioning is not accurate、The practice teaching link is insufficient、The model of integration of industry and education is not perfect. This paper combining the actual situation of civil engineering majors in local undergraduate colleges, It is proposed to build an application-oriented talent training mode of deep integration between schools and enterprises at the level of government, local colleges and universities, industry associations and enterprises. In addition, it will build a production-education integration and school-enterprise cooperation practice education base for enterprises entering the school's production and development center, school-enterprise joint construction, shared laboratories, school-enterprise joint teaching, innovation and improvement of the evaluation system.

Document No. 19 of the State Council in 2014 and Document No. 7 of the Ministry of Education in 2015 require local ordinary undergraduate institutions to change their thinking of running schools, They require local ordinary undergraduate institutions to Adjust the orientation of running schools and innovate the mode of running schools, They should take the deep integration of production and education as an opportunity, They should Cultivate application-oriented talents through school-enterprise cooperation, Then, they can improve their ability to serve local economic development in an all-round and multi-perspective manner and to drive development through service innovation. In 2020, the Ministry of Education issued the Guide to the Construction of Modern Industrial Colleges (Trial) in No. 16, which proposed to deepen the integration of industry and education, which proposed to improve the training mechanism of school-enterprise cooperation, and which proposed to train high-level applied talents according to the needs of industry and economic and social development.

1. Problems existing in the cultivation of applied talents in civil engineering specialty^[1].

1.1. It is inaccurate positioning of talent training.

There are problems of inaccurate orientation or large deviation in orientation in the course of cultivating civil engineering professionals in local colleges and universities, It is due to lack of experience in running schools、blind comparison and other situations, This leads to overemphasis on the study of theoretical knowledge in course teaching, They overemphasizing the deep and thorough study of theoretical knowledge With the training of research-oriented talents. The innovation enthusiasm and effect of practice teaching environment are obviously not up to standard, However, the orientation of running schools based on local and serving regional economic development has been ignored. They has the short-term and long-term goal of running a university to upgrade into a

comprehensive university, a comprehensive university with a master's degree, and a comprehensive university with a doctor's degree. In addition, local undergraduate colleges and universities have not obvious school-running characteristics, weak school-running strength, and are not closely integrated with local economic development, and do not have a stable foothold in the existence of local school-running and other factors in many cases in the aspect of the talent training model of industry, university and research. As a result, the industry-university-research institute has always been floating on the surface, lacking of strong impetus. Insufficient support from the society and the government can not form a virtuous circle, so that the production, education and research can not be really grounded, can not be bigger, stronger and more solid. In general, the orientation of application-oriented universities must be based on the cube, oriented to the regional economy, and based on the actual situation of the local schools.

1.2. It is insufficient practice teaching links.

There are great problems in the practical teaching of talents training in local application-oriented universities^[2]. First of all, practice teaching is not differentiated and personalized according to different training objects^[3]. Especially in the comprehensive training link, the number of double-qualified teachers is insufficient, and the teachers themselves have no working experience in the civil engineering industry, no practical operation and first-line management experience related to the civil engineering industry. Secondly, due to the lack of close cooperation with local construction companies and insufficient funds for practical teaching, when the practical teaching process should go to relevant construction sites for on-site teaching, it often replaces practical teaching with theoretical teaching or free arrangements by students. Finally, some local colleges and universities did not specifically design the practical teaching links of civil engineering majors at the institutional level, but it simply applied the management system of theoretical teaching for simple management, so that students developed a lax mentality and enthusiasm for learning in practical teaching. Decrease, so that students form a psychological prediction that the practical teaching link is to walk through the process and visit.

1.3. The integration model of industry and education is not perfect.

First of all, the integration of industry and education is not fixed. In the absence of rigid regulations of laws and regulations, insufficient attractiveness of policies and systems, and insufficient motivation from government authorities, the realization of industry-education integration in civil engineering professions often depends on private relations, and it plays a key role in the integration of industry and education in civil engineering professions. And the integration promotion mechanism is often insufficient. Most construction companies tend to focus on corporate economic benefits in the process of industry-education integration. In the case that the economic benefits do not meet the expectations of enterprises or the economic benefits are not attractive enough, the enthusiasm of construction enterprises to participate in the integration of industry and education will be greatly reduced, and the promotion of the integration of industry and education is weak. As a result, the integration of industry and education of civil engineering majors has become a situation that "colleges are obsessed with the integration of industry and education, but enterprises are not willing to do so". Thereby forming an unfixed passive situation of civil engineering professional industry-education integration enterprises. Secondly, the integration of industry and education is on the surface. Companies with better development of industry-education integration have only added some corporate culture lectures, safety education lectures, etc. Enterprises often ask universities to undertake the related research tasks alone or seldom cooperate with them. In terms of technological and scientific research cooperation, and they are willing to pay the relevant expenses only after seeing the results of the university's research. It is often a normal two-way employment choice. Enterprises will not make more policy preference for employment due to the integration of industry and education at the level of students' employment. Therefore, this kind of entertainment-education integration that focuses on the signing ceremony of the integration of industry and education but ignores the practical effect of cooperation is a formality. Finally, the depth of the integration of industry and education is insufficient. In the process of formulating civil

engineering professional talent training programs, the civil engineering professional teaching and research offices often only formulate talent training programs in accordance with the relevant requirements of the Ministry of Education and the school's academic affairs office, ignoring the actual situation of the enterprise, and failing to integrate curriculum design, production practice, etc. Practical teaching links and teaching content match the production plan, production research, and employment plan of the enterprise, and there is even no communication in advance. There is a lack of systematic thinking and scientific methods and methods that integrate production and education. As a result, any practical teaching is matched with any construction production link, so that the in-depth special practical training link should not be carried out. Students only carry out general learning, and special education and refined education have become process-oriented, "Fried Rice" Education.

2. Construction of applied talent training model in local undergraduate colleges[4].

The transformation of local undergraduate colleges to application-oriented colleges and the training of high-level applied talents is a complex and systematic project that needs to involve all aspects. The efforts of local undergraduate colleges and universities are only a force to achieve this school goal [5]. It needs to work from the following aspects at the same time. First of all, It is necessary for the government to take the lead in formulating corresponding laws, regulations, systems, etc., and escort the realization of this goal from the legal and institutional level from the perspective of top-level design. Secondly, relevant government departments need to closely follow this goal from the specific operation and operation level, and need industry associations to organize and guide related enterprises to step by step, targeted publicity, and carry out relevant industry-education integration activities, and the enterprises themselves need to transform their operations. Philosophy, companies not only use profit as the only evaluation index, but also need to shoulder the social responsibility of training high-level applied talents.

2.1. At the level of government.

The transformation and development of local undergraduate colleges to application-oriented undergraduate colleges is also the need for the development and survival of local colleges and universities themselves. School-enterprise cooperation and integration of industry and education cannot be carried out in depth and detail without the strong guarantee of national laws, regulations, and rules and regulations, and the strong promotion of government authorities. Therefore, from the perspective of the government, local colleges and universities, as the specific implementation units for implementing the party's educational policies and government decisions and deployments, combined with the actual situation of my country's education power in the new era, coordinated, planned, and formulated production-education integration in a targeted and systematic manner. , School-enterprise cooperation laws, regulations and rules. At the same time, the education authorities need to introduce highly operable talent training standards based on the characteristics of local universities, and supervise and guide the cultivation of applied talents.

2.2. At the level of local universities, industry associations, and enterprises.

2.2.1. Local colleges and universities formulate training objectives for application-oriented talents based on industry development and regional economic development [6].

It is to determine the goal of talent training, it is first necessary to clarify the export of talent training, and the orientation of talent training needs to be clarified, which is to closely integrate the current situation of the industry, the development trend of the industry and the needs of regional economic development. Taking the civil engineering industry as an example, including construction, highways, water conservancy, bridges, mining and other fields. It is a basic and foundational industry for the development of the national economy and national security. Judging from the development of the industry in the past 20 years, the number of its employees is huge, and the effect of driving related industries is quite obvious. In 2020 year, the country puts forward the concept of

"new infrastructure", and the amount of financial investment is as high as 40 trillion yuan. With the development of BIM technology and industrialization technology in the traditional civil engineering industry, the civil engineering industry is developing towards intelligence. The civil engineering major of our school has been closely following the development direction and trend of the industry. It has successively built the Xinyu City BIM Technology Smart Construction Research Center and the Jiangxi Province Prefabricated Building Industry Research Center, and it is aiming at the direction of smart construction. It is actively applying for the smart construction major. Declared for Jiangxi Province Prefabricated Steel Structure Technology Innovation Center. With the support of provincial and municipal platforms and the opportunity of applying for new majors, the adjustment and positioning of application-oriented talents training should be carried out closely following national strategies, industry development needs and regional economic development.

2.2.2. Improve the talent training system according to industry, occupation and post requirements.

Application-oriented ability is not a generalization, but based on the industry, occupation, post needs as the standard. The details are as follows: First of all, the course teaching platform is the ultimate foothold to achieve the goal of talent training, and each course in the course teaching platform needs to have a one-to-one correspondence or cross-correspondence with the refinement of applied abilities, and the refinement of applied abilities is related to Positions, occupations, and industries are seamlessly connected, so that training goals and application-oriented abilities can be implemented into the course teaching platform. Secondly, according to the refinement of applied abilities, all courses in the teaching platform can be subdivided into the teaching platform for the cultivation of applied general abilities. Common courses are sub-platforms.

2.3. Build a training base for the integration of industry and education and school-enterprise cooperation.

In the past, the cooperation between schools and enterprises was often realized in the mode of "Order-oriented small-class training", students' on-the-job internship, and employees in enterprises. The goal of co-construction and joint education between school and enterprise has been realized at the shallow level. However, the deep integration of industry and education has not been realized in the deepening of school-enterprise cooperation. The school-enterprise cooperation can be further promoted from the following aspects.

2.3.1. Enterprises settled in the school's production and development center.

The local university production and development center is a functional department of the school that specializes in school-enterprise cooperation and the integration of production and education. This department is responsible for the unified management of the enterprises stationed in the school. The settled company will move part of the office space or all of the office space into the campus, and students can participate in the joint development of enterprise projects, technical research and other practical exercises on the campus. The communication between the school and the company has become more convenient due to the close distance. In particular, teachers and students can go to the on-campus company to participate in practical exercises after the class, and the company is not responsible for the boarding and lodging of the intern students, thus forming a complementary advantage. The students' personal safety is fully guaranteed in the enterprise internship of the school's production and development center, and they don't have to spend too long on the way to and from the enterprise. Fragmented time can also be fully utilized, which can maximize the resources of enterprise practice and training. Dahua; At the same time, companies can also save corporate office space, student accommodation, transportation and other related costs, and can better and maximize resource utilization to mobilize school teachers and students to conduct field investigations and scientific research activities. However, this method also has some shortcomings. The development of the enterprise will be subject to the management of the school. The business scope and scale of the enterprise are all subject to the professional category of the school and the number and quality of students. Moreover, the enterprise is set up in the school. It's not convenient

to wait.

2.3.2. School-enterprise joint construction, sharing laboratory.

For some laboratories that are required by enterprises for processing, testing and other production and school teaching needs, schools and enterprises can jointly fund or provide laboratory space and be responsible for management. Both parties can conduct research in the laboratory on the problems that enterprises need to carry out scientific research. Joint research and innovation, the school can use the laboratory for experimental teaching, can conduct new technology, new technology, new construction method experiments, the enterprise can use the experiment for production practice, technical achievements transformation, etc. For civil engineering majors in our school, this mode can make full use of the school's BIM technology platform and prefabricated building platform for building model establishment and building virtual simulation construction simulation. It can also make full use of the advantages of the company's raw materials and equipment to jointly build and assembly Steel structure technology innovation center, jointly apply for the provincial technology innovation center, provide technical services for the whole province and radiate the whole country.

2.3.3. School-enterprise joint teaching.

The advantages of the school in teaching are mainly concentrated in the theoretical teaching, and the practical experience is still insufficient compared with the technical personnel in enterprises. For civil engineering majors, practical teaching links mainly focus on course design, cognition practice, production practice, graduation practice and graduation design. In order to achieve better results in practical teaching links, it is necessary to give full play to the common advantages of technical personnel from both schools and enterprises. Taking graduation design as an example, in the topic selection of graduation design engineering project, the enterprise can provide the engineering project currently being implemented by the enterprise as the topic selection of students' graduation design, which provides a project guarantee for students to participate in practical exercise and carry out real questions. Second, in the graduation design implementation, the school teachers is mainly responsible for guiding the theory part of the graduation design, is mainly responsible for enterprise technical people in combination with the actual situation of project practice part of guidance, encounter problems in graduation design, the school teachers, enterprise technical personnel and students can discuss solutions, This is a substantial step forward for the in-depth integration of industry and education.

2.3.4. Innovate and improve the evaluation system.

First, form a multi-party evaluation subject with the participation of universities, industry associations and enterprises. Under the mode of deep school-enterprise integration, the evaluation of talent training jointly developed and participated by the three parties will be more scientific. The trade association mainly evaluates students in terms of qualification, ability, level and development potential. Secondly, innovate the evaluation method. Disperse the one-time assessment that focuses on results into multiple assessments in stages, and transform the assessment that focuses on test-taking ability into an assessment that focuses on students' practical and organizational skills. Finally, innovation assessment content. The assessment of theoretical knowledge that local universities attach importance to is transferred to the assessment of professional application ability, theory and practice combination ability, and innovation ability that are valued by enterprise units and industry associations, taking industry needs as standards and job requirements as yardsticks, scientifically formulating an assessment system and Evaluation standards, innovation and improvement of the evaluation system.

3. Conclusion

Our school has now opened two undergraduate majors in civil engineering and engineering cost. The school has always adhered to the philosophy of "people-oriented, serving the locality,

school-enterprise cooperation, and integration of work and learning" as the school-running philosophy, and vigorously promotes the construction of teaching quality engineering and the quality development of college students. Civil engineering majors themselves have strong application characteristics. Civil engineering majors are traditional majors with a long history of running schools. Due to the outdated ideas of ordinary undergraduate colleges, the traditions of running schools, the old school models, the practice teaching venues Restrictions, lack of practical teaching resources, practical teaching staff experience, insufficient ability, etc. In the running of this major, the education of theoretical knowledge is often emphasized, and the cultivation of students' practical ability is often overlooked, and the cultivation of students' applied innovation ability is neglected, which causes the training of civil engineering professionals to be out of touch with the needs of local economic and social development[7]. In order to achieve the goal of cultivating people by virtue and cultivate high-quality applied talents needed by economic and social development, it is imperative to change the talent training mode. In the process of transformation and development, local undergraduate colleges and universities should be more output-oriented and demand-oriented, and strengthen school-enterprise cooperation, especially the practice ability cultivation and practice teaching. It is necessary to enhance the cultivation of students' practical ability through the deep cooperation between schools and enterprises in multi-dimensions, multi-angles and multi-levels, and through the deep integration of schools and enterprises [8].

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