Research on the Training Mode of Applied Talents in Universities from the Perspective of the Integration of Production, Teaching and Research

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Abstract. Colleges and universities are the main positions for talent training in China. With the development of society, the concept of higher education talent training has undergone great changes. Under the severe employment situation, cultivating application-oriented talents suitable for economic development has become an urgent problem to be solved in major universities. By strengthening the research on the applied talent training model in universities from the perspective of the integration of production, teaching and research, further promote the applied talent training model in universities to meet the needs of social development, give full play to the advantages of resources owned by universities and enterprises, "Model to be broken, to cultivate highly innovative and innovative comprehensive applied talents, to promote the development of the school itself, so that students have broad development prospects, to deliver innovative and applied talents for national construction and development, to effectively support the country ‘s intellectual Innovative development strategies have important practical significance.

1. Introduction

In 2000, our country began to implement the policy of expanding college enrollment. Many students also benefited from this and have the opportunity to enter university classrooms for further studies. However, the employment of college graduates is becoming more and more severe year by year. my country’s university graduates have been growing at a rate of 5% per year since 2007, and 7 to 8 million university students graduate from universities every year. However, there are not many jobs available for graduates, the contradiction between employment supply and demand is increasing, and the employment problem is becoming increasingly severe. The employment of college graduates has a greater impact on social stability and economic development. And with the continuous development and change of social needs, society's needs for students are also constantly changing. Job requirements are becoming more technical, intelligent and refined. Social production and economic construction require practical, technical, and skill-based Talent, this is an urgent and realistic task for the reform of the application-oriented talent training model in universities.

2. The Background and Current Situation of the Training Mode of Applied Talents in Universities

Looking at the development of colleges and universities in the history of the world, it has a history of more than 400 years. Chinese universities have also experienced more than 100 years of history. So far, Chinese universities have generally focused on training students in an employment-oriented way. From the planned economy period to the market economy period, the talent training model is constantly adjusted.
At the beginning of the 19th century, educators William Humboldt and von Humboldt put forward the higher education concepts of "academic freedom" and "integration of teaching and scientific research". At the beginning of the 20th century, Van Hayes, the president of the University of Wisconsin in the United States, developed the functions of the university from teaching and research to teaching, research, and social service. This enabled the University of Wisconsin to achieve significant results in directly serving the local economy. It has had an important impact on the development of universities around the world [1]. In 1946, the "Declaration of Cooperative Education" issued by the American Professional Association officially defined cooperative education as an educational model that combines theoretical learning and practical work experience for the first time. The United States is one of the first countries to use the industry-university-research cooperation model to cultivate talents. The process of cultivating university talents in the United States closely integrates scientific research institutions and enterprises, allowing students to participate in industry-university-research activities after a period of study, thereby improving students' practical application ability. Therefore, the MIT model of talent training and the Silicon Valley model of talent training have been formed. At present, there are more than 1,000 higher education institutions in the United States that carry out different levels, types, and forms of cooperative education, accounting for about one-third of the total number of American universities. Basically, all disciplines have related professional coverage of cooperative education, and the United States has one of the best industry-university-research cooperative education scales in the world. Japan's industry-university-research cooperation model believes that economic development depends on the development of science and technology from the educational concept, and the development of science and technology depends on the development of human resources [2]. The cultivation and exchange of talents is an effective way to develop human resources and develop industry-university-research cooperation. In terms of methods, the Japanese government has guided and promoted the establishment of industry-university-research cooperation mechanisms, and used the cooperation between enterprises and universities to realize the benign interaction between schools and enterprises [3]. In the process of enterprise development, student training is also part of its development. The government believes that the responsibility for education is shared by industry and universities. This educational philosophy can be reflected in the introduction of teacher resources in schools. The teacher resources introduced by the school will be introduced from the company, and the company's scientific and technical personnel will be encouraged to go to university, and the company will be responsible for hiring university teachers to teach the employees. With the support of the Japanese government, Japan's industry-university-research cooperation has also been continuously developed and improved to ensure the smooth implementation of industry-university-research cooperation. Many universities in Japan not only have teaching areas, but also science and technology parks. The cultivation of technical, technological, and application-oriented talents is used as the training goal to carry out industry-university-research cooperative education.

The introduction of the talent training model of industry-university-research cooperation into our country began in the mid to late 1980s. It has a history of more than 30 years, and its importance in the process of talent cultivation in colleges and universities has become increasingly prominent in the process of continuous development. It has become an important method and approach for talent cultivation in colleges and universities. China has also put forward a relevant development outline for medium- and long-term education. The Outline clearly states that it is necessary to continuously improve the quality of talent training, enhance social service capabilities, and create a new
mechanism for joint training of talents by universities and research institutes, industries, and enterprises. Strengthen the training of compound, applied and skilled talents. Firmly establish the awareness of colleges and universities to actively serve the society and develop services in all directions. Promote the integration of production, education and research, accelerate the transformation of scientific and technological achievements, and standardize the development of school-run industries. Therefore, the training model of applied talents in colleges and universities can be established on the basis of industry-university-research cooperation. Only by stepping out of the "ivory tower" school education environment and diversifying the talent training model can the training subjects adapt to the society. Need to continuously enhance their innovation ability and become a real practical talent.

School-enterprise cooperation can better cultivate application-oriented talents. It is also called "cooperative education" in the world. School-enterprise cooperation refers to the education model of enterprises and schools cooperating to cultivate talents. Its basic connotation has three points. The first point is industry-university-research cooperation, the second is mutual benefit and win-win, that is, the joint participation of enterprises to achieve mutual benefit, harvest talents, and win-win, and finally two-way participation. School-enterprise cooperation requires joint input from both parties. participate. The education model of talents with high innovation spirit, practical ability and employment competitiveness. Its essential feature is the combination of education and production labor, school education and practical work, which realizes the zero-distance docking between talent training and market demand, and makes schools Truly become the cradle of training talents. The significance of the school-enterprise cooperation application-oriented talent training model lies in: First, it can save the school's education investment and meet the hardware requirements of students' practical ability training. This allows the contradiction of insufficient investment in teaching funds per capita to be alleviated; second, the combination of talent training and school-enterprise integration can meet talent training and market demand at zero distance, and enterprises can also save a lot of training costs and time. Under the school-enterprise cooperative training model It can reserve a large number of senior applied talents with strong hands-on ability, development potential and rich professional theory; third, the cultivation cooperation model has realized students' practical ability, work ability, practical problem-solving ability, communication and coordination ability and teamwork Improvement of collaboration ability, etc.

3. Restrictive Factors Affecting the Training Mode of Applied Talents

Since the reform and opening up, my country's higher education has made considerable progress. It has begun to attach importance to the training of applied talents and the research of applied talents training models, and has achieved initial results. However, in view of the development of the current situation, the status of applied talent training and applied talent training model has not attracted enough attention in many domestic universities. There are many factors that limit the development and research of college applied talent training model, and there are still some that cannot be ignored.

3.1. The professional setting of the application-oriented talent training model is unreasonable. There are many reasons why college graduates cannot get jobs in time, but one of the important reasons is that the knowledge they learn does not meet the needs of social occupations, professional settings and training goals are unreasonable, and they are not effectively connected to the market and demand, leading to supply and demand. The imbalance and the structural contradiction of human resources are obvious.
3.2. The application-oriented talent training curriculum lacks application. Some universities have followed the traditional methods in the curriculum setting, and some universities have followed the traditional curriculum setting in the curriculum setting. In fact, the applied university curriculum is not much different from the traditional curriculum. The setting of courses, limited conditions for running schools and teaching facilities and equipment restrict the running of schools, leading to a lack of application in the curriculum for application-oriented talent training, which restricts the improvement of students' application ability and practical ability.

3.3. The training method of applied talents lacks practicality. The school does not pay enough attention to the participation of students in extracurricular practical activities. In the process of talent training, too much emphasis was placed on theoretical teaching and the extracurricular practice was ignored. It has not completely emerged from the concept of blindly attaching importance to theoretical teaching. It is believed that the theoretical teaching is more in-depth and the academic level is higher than the experimental class. This formed the misunderstanding that practical teaching should depend on theoretical teaching. It has a negative impact on the improvement of students' practical ability and the realization of quality education.

3.4. There is no long-term mechanism for school-enterprise cooperation to train applied talents. In the absence of good cooperation, a long-term mechanism for school-enterprise cooperation has not been established, and different cooperative training models have exposed some problems. The characteristics of school-enterprise cooperation are not clear enough. The school's organizational structure is not integrated with the enterprise, and the two sides lack communication and contact in all aspects. The cooperation in personnel training is relatively loose. There is no deep integration and high-level integration in the true sense. Some school-enterprise cooperation has no actual content.

3.5. Insufficient preparation for the strength and ability of teachers for training applied talents. The cultivation of applied talents not only has higher requirements for students, but also stricter requirements for teachers. An obvious feature of current college teachers is that they have accumulated a lot of theoretical knowledge and insufficient professional practice training, which has greatly restricted the training of talents. In addition, most college teachers have no practical experience and are not competent for practical teaching work, especially comprehensive practical training that requires high comprehensive practical training. Even if they are engaged in practical teaching, they still remain in the theoretical teaching mode, mainly based on Case-based teaching.

4. Practical Exploration and Path of Training Applied Talents in Universities

Among Chinese universities, applied undergraduate colleges and universities are a type that has emerged in recent years. They are an important part of higher education and have distinct characteristics of applied teaching. There are essential differences between applied undergraduate colleges and traditional undergraduate colleges in teaching purpose and teaching form. The focus of teaching in applied undergraduate colleges is "application". Pay attention to the application of knowledge and the combination with practice in the teaching process. Its training is market-oriented and enterprise-oriented. It must be able to truly apply specific theoretical knowledge in actual work and create value for the enterprise. Therefore, applied talents refer to all-round talents with certain knowledge and practical ability, and comprehensive qualities. This type of talent requires both solid basic knowledge and strong practical ability. At the same time, it also needs to have high
professional quality and innovative ability. The cultivation of application-oriented talents is an open school operation, which puts forward higher requirements for strengthening school-enterprise cooperation. Based on the analysis of the training model of applied talents in colleges and universities, this paper puts forward the practical exploration and path of the training of applied talents in colleges and universities.

4.1. Reasonably Set up Professional Courses to Improve Practicality and Applicability

The application of talent training is the main difference between research universities and applied universities. This kind of university will combine theoretical study, practical training, etc. in the teaching process to enhance the application ability of its specific talents. Emphasize the practicality of professional curriculum design. The designed curriculum system must not only meet the requirements of college professional curriculum design, but also have a high market application value, which can focus on training and improving students' abilities. The cultivation of different courses should be carried out systematically. The hours and credits of different courses should be scientifically formulated according to the training objectives. The core courses should be emphasized to highlight their importance and status. The practical experimental courses should be tilted when possible, and the proportion of courses should be increased to enhance students' practical hands-on ability, combining industry and specialty, teaching and enterprise, combining in-class and extra-curricular, combining in-professional and extra-curricular, making full use of school-enterprise cooperation to let campus cultivate and introduce enterprises, bring students in the process of enterprise development, and reuse. These two sides have various advantages to cultivate applied talents with strong practical ability [4].

4.2. Adhere to Market-oriented and Cultivate Application-oriented Talents according to Market Demand

Adhere to the market-oriented, as the goal of cultivating qualified builders for the society as soon as possible, mobilize the enthusiasm of schools, enterprises and students, solve the contradictions in school education, student employment, and human resources needs of employers, and realize the relationship between schools, students and Cooperation and development among employers are mutually beneficial. In the process of specific planning and development, employers should plan for talent cultivation based on their own development conditions, and select outstanding students who meet the job requirements in major universities to train them, and at the same time, they can be used as a talent reserve for the future development of the company. The enterprise and the student sign a training agreement, which clearly stipulates the learning, the knowledge and abilities that the student must have during the school, in order to better realize the docking training. Timely coordinate the needs of employers (market needs) for students' major adjustments, curriculum settings, professional internships, social practice, graduation thesis and design, and transform market needs into student needs.

4.3. Strengthen the Construction of Off-campus Practice Teaching Bases to Improve Students' Practical and Innovative Ability

Off-campus practice teaching base refers to the place where teachers and students participate in practice teaching. The off-campus practice teaching base is an effective extension of theoretical teaching, and students can effectively combine practice with theory through practice. At the same time, to ensure the quality of internships, it is necessary to continuously strengthen the construction of off-campus practice teaching bases. The bases require the different characteristics of each major
to analyze the capabilities and knowledge structure that may be required for future job development, combining the social development status and the students’ employment situation. The prevailing employment needs shall be constructed accordingly. The construction of the base must meet the teaching needs of different courses and different majors, and the teaching objectives to be achieved must be firmly grasped to ensure that it meets the needs of social talents. Because the cultivation of applied talents is a high-quality talent cultivated through a training model that emphasizes both knowledge and ability. At the same time, it is necessary to monitor and guide practical teaching in the whole process, carry out teaching organization and management scientifically and rationally, share technical equipment and other resources, so as to realize the efficient and sustainable cultivation of applied talents.

4.4. Strengthen Students’ Practical Education and Accelerate the Training of Applied Talents

Colleges and universities oriented to the cultivation of application-oriented talents should actively carry out practical education activities. In the teaching process, all internal and external resources are used to train students in business management and operation, so that students can fully understand how companies make profits, how to control business risks, and master the basic knowledge needed for entrepreneurship through students’ practice. At the same time, for the training of applied talents in schools to have a real effect, it must be closely integrated with economic and social development to teach, and students must be carefully organized to study, learn and understand the development trend of the industry in enterprises and local economies. To improve students’ analytical ability, the training of applied talents is not only a simple knowledge transfer, but also to enhance students’ ability to transform knowledge and practice, and to lay a solid foundation for students’ future employment and innovation and entrepreneurship activities. Student employment and entrepreneurship plans are more reasonable and reduce risks.

4.5. Realize the True Integration of Production and Education by Strengthening School-enterprise Cooperation as a Breakthrough

School-enterprise cooperation is an application-oriented talent training model that is highly compatible with production, education and research. Therefore, the school should be based on mutual benefit and win-win, with the goal of joint cooperation and development, and improve the school-enterprise cooperation mechanism [5]. One is to establish a long-term mechanism for school-enterprise cooperation. The school’s organizational structure should be linked and integrated with the enterprise to establish a common organizational structure for both parties. Through the effective integration and utilization of complementary resources of schools and enterprises, more appropriate unified practice and theoretical learning, and creating better conditions to support the cultivation of innovative talents. Second, the school fully implements comprehensive education. In-depth integration with the company in terms of industry-university integration, internships, etc., allows students to understand and participate in the production and operation process of the company, forming a truly in-depth integration and high-level cooperation. The third is to strengthen the comprehensive cooperation between schools and enterprises, and continuously promote the continuous innovation of the application-oriented talent training process and teaching methods, and cultivate high-quality applied talents, in order to promote regional economic and social development, especially for various enterprises in the region. Contribute to development.
4.6. Give full Play to the Role of College Students in Scientific Research and Strengthen the Cultivation of College Students’ Innovative Ability

If college students want to grow into application-oriented talents, they must participate more in practice and carry out more scientific research activities. This will not only enhance their learning ability, but also stimulate innovation during the development process. University students should pay great attention to and value scientific research activities, create opportunities and conditions for scientific research activities in a variety of ways and methods, encourage students to participate more, and allow college students to participate in more scientific research projects, such as the college student innovation and entrepreneurship competition, college student innovation and entrepreneurship training programs. Encourage students to boldly innovate, deepen their thinking about problems, and improve their ability to analyze and solve problems. This can not only improve their scientific research capabilities, but the organization and cooperation process can also enhance their coordination, unity and cooperation. Organizational competence. Encourage publication of scientific research results.

4.7. Adopt Internal Training and External Introduction (Employment) Measures to Create a "Dual-qualified" Teacher Team

The faculty is an important factor in the cultivation of talents. Therefore, it is necessary to integrate the advantages of all parties, adhere to open schools, and adopt practical measures such as "internal training, external recruitment (hiring)" and so on. To strengthen the construction of the "dual-professional" teaching team, it is necessary to actively attract teachers with "dual-professional" qualities to undertake entrepreneurial practice teaching tasks, and to train applied talents, it is necessary to create a "dual-professional" teaching team. "Teacher team. The so-called "dual teacher type" means that the teacher team is composed of university entrepreneurs and scholars and scholars and entrepreneurs outside the university. Course teachers must also have corresponding teaching qualifications, possess various certificates that must be held, and have a wealth of practical and professional abilities, and be able to effectively guide students' practice and experimental work. And the theoretical foundation must be solid, that is, both theory and practice are doers. The original professional teachers should carry out on-the-job training, on-the-job training, and on-the-job learning in a targeted manner, and actively transform into "dual-professional" teachers. The school can hire a group of technical experts and backbones with professional knowledge and industry background as part-time teachers in the industry and society. Measures such as training, introduction, and external recruitment have been adopted to increase the number and proportion of "dual-qualified" teachers, laying a solid foundation for the cultivation of applied talents. Through the integration of multiple forces, a teaching team with comprehensive knowledge has been formed.

5. Conclusion

To sum up, under the severe employment situation, cultivating application-oriented talents that adapt to economic development has become an urgent problem for universities to solve. Through the school-enterprise cooperative education that improves the talent training mechanism. Effectively cultivating applied high-quality talents with innovative spirit and innovative ability can promote the development of the school itself, enable students to have broad development prospects, and provide talent guarantee and intellectual support for the country to implement innovative development strategies.
References


