Practice Teaching of German Application-oriented Higher Education and Its Reference

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Abstract. German application-oriented higher education focuses on training practical talents, with a complete education system and well development, it has played a key role in the field of engineering in Germany. Practice teaching in German University of applied technologies is dominated by enterprises. China's development of the application-oriented colleges can learn from the German practice by improving relevant laws to promote a closer cooperation between the university and the industry. This will help to build a platform by integrating production, teaching and research, and will help to produce graduates needed by enterprises.

Introduction

Germany quickly return to the ranks of the world first-class power after world war I and world war II, the reason is not only due to its rigorous, meticulous work attitude, but also because of its unique pattern of higher education. German higher education system mainly include comprehensive university, combined university, teachers college administrative institute, college of art, theological seminary, and application of science and technology university of seven classes [1]. University of science and technology used in it with normal universities to support the economic and social development of Germany "half", has yet to be developed across Germany almost all of the social workers and social education workers and two-thirds of the engineer, 1/2 corporate economist and information technology talents, its characteristic mainly for personnel training in practice and actual operation ability as the goal, to social demand as the main orientation. It is this emphasis on theory with practice education model has prompted Germany's economy took off. The transition period in our country at present is in a special, in order to better training can be social acceptance, need the talented person, the ministry of education in the [2014] No. 1 document made it clear: "by pilot lead, demonstration lead, guide and promote parts to application type undergraduate course colleges and universities, the transformation and development in colleges and universities built a batch of local undergraduate transformation model school". Rise the undergraduate course colleges and universities, however, quite a number of new positioning is not accurate, wandering between the academic and applied. Even in applied undergraduate colleges and universities, in the aspect of talent cultivation mode is still a lack of clarity of thought, have not been established complete applied talents training system." [2].

The Characteristics of German University of Science and Technology Practice Teaching Mode

Companies Dominate the Practice Teaching, Production and Close Cooperation. Germany applied university of science and technology talent training in "dual system" mode."Dual system" is a kind of "division of labor cooperation between higher vocational colleges, but to the enterprise, combined theory with practice, but is given priority to with practice" mode of vocational education, students in the school classroom culture and professional basic theory education, vocational skills training in the enterprise. Application of university of science and technology is very pay attention to practice teaching, the most distinguishing feature of the practice teaching mode is the dominant position of an enterprise. Companies in Germany are not just students internship site, but to play a leading and core role in the whole vocational education training main body. Specific performance: one is the enterprise to provide internship, depending on the application of university of science and

technology under guidance and student internship training as own duty, and the cooperation between colleges as an important way of enterprise human resources development. Second, in the whole process of teaching practice, the enterprise plays a leading role, is, in fact, according to the enterprise to develop need worker. Students in the enterprise in the form of productive labor practice training, access to enterprise currently used equipment and technology, intuitively understand the situation and the demand of enterprises, and enterprises on-site guidance of the teacher, their performance in practice by the enterprise are largely responsible for the inspection. All three is in the practice teaching of scientific research topic from enterprise needs and service for the enterprise.

With Ability as the Standard, Pay Attention to Cultivate Applied Practical Ability to Solve Problems. Germany applied university of science and technology as a new type is different from the traditional universities of institutions of higher education, its educational philosophy is "for the professional practice and scientific education, training target is quite clear, that is not deep, enable students to master the system theory knowledge, and theory is to be able to use the scientific method, solve concrete problems in enterprise production and real life, become a professional talents with practical application ability. Germany applied science and technology university of practice teaching mode, therefore, the orientation is ability standard, especially attention to the cultivation of students' practical ability.

First, the qualification for admission as emphasis on practice experience, request a pre internship in front of the entrance. Application of university of science and technology from the start of the school emphasizes the practical experience, has a strict admission requirements, students in addition to have a high school diploma must also provide related internship certificate, experience and practice must be consistent with the undeclared, time in more than three months to half a year [3]. And technical secondary school graduates of vocational schools, due to the relevant practical experience can be directly enter oneself for an examination, other students have to find their own enterprises to participate in the production practice, make up for all the practical experience of this class in the application of science and technology university [4]. Education and practice experience of dual requirement, application embodies the German university of science and technology talents", career guidance ability standard "quality.

Second, teaching practice is outstanding, the diversity of practice teaching. Applied science and technology university pays attention to practice teaching, practice semester, project teaching, graduation design, etc. The internship term applied science and technology university is to cultivate the students' ability in practical work. After admission, application of university of science and technology are compared with the ordinary institutions of higher learning long term practice, generally is 2 semesters, of which 8 semester internship for graduation design combination [5]. Practice basic process is: students practice committee according to the school to provide enterprise information, find out they are interested in, to the enterprise application project, internship contract with the enterprise after approval.

Third, the teaching contents according to the needs, pay attention to practical course system. On the curriculum, carry out practical ability as the core of modularization professional education.

University of science and technology widely applied into the module courses, according to the employment demand change and the trend of the development of the enterprise, constantly adjust the course system, strengthen the relevant knowledge and skills of fusion, its curriculum system foundation courses, professional foundation courses and professional direction foundation courses, a total of three modules (As Show in Fig. 1), including basic courses and professional basic course proportion of the number of hours is higher, the whole curriculum structure segments, gradually deep, from the broad to deep incremental dynamic characteristics. On the teaching content, according to actual needs, no fixed teaching materials. The application subject of university of science and technology teaching does not pay attention to systemic and principle analysis of the theoretical knowledge, but more emphasis on scientific knowledge and the method application in the enterprise practice. Therefore, the teacher must keep pace with The Times, according to the actual needs of enterprises choose and change to organize the teaching content, handout, self-paced.

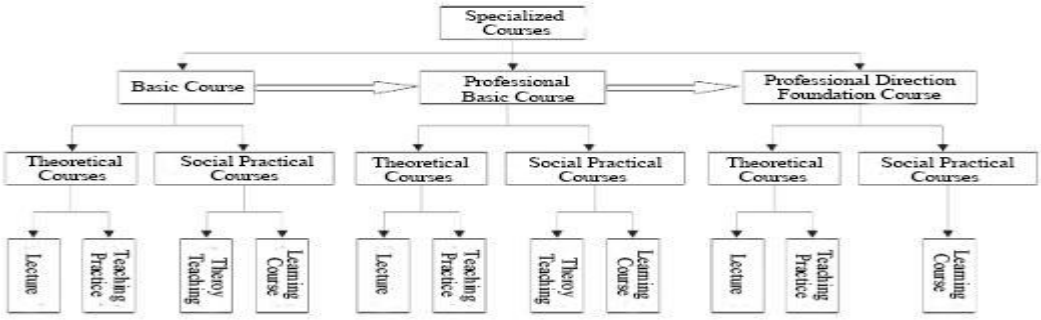

Figure 1. Application course at the university of science and technology system

Has Profound Practical Background of the "Double Type" Teaching Staff. The biggest characteristic of applied science and technology university teachers is a lot of "double type" teachers. Application a professor at the university of science and technology must be "double division type" professor, at the same time have the quality of teachers and engineers quality, emphasizes the unity of the academic and practice. Comprehensive academic requirement is: university graduated accordingly; With appropriate professional doctorate, has a strong ability of scientific research; More than 2 years of teaching or training experience and through the national unified examination. Practical requirement is: have 5 years working experience in business, generally require more than 2 years as a department manager and above positions. The professor is not only professional quality and scientific research ability is very strong, and practical teaching experience [8]. The application of university of science and technology also has a large of part-time teachers, part-time teachers proportion is as high as 60% above, mainly experienced management specialist or engineer [9].

The FH Enlightenment Practice Teaching Mode for Applied Undergraduate Education in Our Country

At present, with the transformation of the pattern of economic development, transformation and upgrading of industrial structure, the application technology of the country needs a large number of high-quality talent. To that end, countries' modern vocational education system construction plan (2014-2020), "clearly put forward, to speed up the modern vocational education system and guide a group of ordinary undergraduate course colleges and universities to the application of technical transformation of colleges and universities, hold applied undergraduate education, cultivating senior engineers, technicians and professional talents with high quality. School-running orientation and training goal of the applied undergraduate colleges and universities in our country, with Germany's university of science and technology application is very similar, introducing the concept of German university of science and technology application and practice teaching mode, combined with its own characteristics and the needs of the development of local economy, should be applied undergraduate colleges and universities in our country have its characteristic and level of an important path.

Set up "Applied" Senior Specialized Talents Training Mode, Pay Attention to the Management Practice Process. As applied university, you should be with university of academic distinction in mind, the real "education with practice" as the school education is an important sector. School can be equipped with specialized teacher for students, guide students anytime and anywhere. Strengthen experiment, practice and practice, the careful design practice content, make sure that closely integrated with professional practice. Open class workshops, emphasize the students' skill training, cultivate their ability, especially the ability to solve problems independently, so that the students can leisurely into jobs after graduation, will learn to practice skilled application to work.

Establish a Combination of the Practice Teaching Mode, Conform to the Requirements of Society. Learning and introducing the idea of German FH, schools and government agencies. The

communication between domestic and foreign enterprises, enhancing university-enterprise cooperation, cultivating inter-disciplinary talent is our country many applied university should be the direction of the development in the future. German FH, for example, they and the cooperation between enterprises is very close, it requires not only a school, need more enterprise actively cooperate with. German companies have been spare no effort to support the FH practice, its level in the world.

Create "Double Type" Teachers, to Strengthen the Construction of Practice Teaching of the Teachers. Germany applied science and technology university experience has shown that the practice teaching needs a know both theoretical and technological knowledge, and have rich practical experience of "double type" teachers. Compared with FH, faculty of applied undergraduate colleges and universities in our country the prominent problems which were as follows: one is a large gap professor employment conditions, has the enterprise practice experience of teacher too little; The second is from business part-time teachers too little; Three is the mechanic born too much training teacher. From the current teachers, establish a "double type" teachers is a long-term and arduous system engineering, can only take a gradual approach gradually achieve the request, and must be a corresponding management system and incentive mechanism.

Conclusion

Under the background of popularization of higher education, technology is the development of the applied undergraduate must go through the process of higher education reform in our country, the connotation of implementation must be based on its professional structure, curriculum, faculty, teaching scientific research can be embodied. The connotation of technical applied undergraduate in our country at present, however, it is not clear, even appear to understand it into ordinary undergraduate education and skills training. The solution to this problem is China's technology applied undergraduate to continue moving in the right direction. In addition, in the process of development of applied undergraduate education in our country, should draw lessons from the successful experience of German university of science and technology application, to explore the building conforms to China's national conditions of applied undergraduate talents training mode, strengthen the cooperation with enterprises, the enterprise to the job requirements, such as technology, ability in the practice teaching, university-enterprise cooperation common cultivation of applied professional talents.

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