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The Enlightenment of British and German Vocational Undergraduate Education Development Model to Chinese Vocational Undergraduate Education

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ABSTRACT

UK Polytechnic Higher Education and the University of Applied Sciences in Germany have many similarities in the talent training model of higher vocational undergraduate education in China, but the development time and course of the three are different. Compared with vocational undergraduate education in Britain and Germany, China's higher vocational undergraduate education is still in its infancy, and the training model needs to be improved. Through the comparative study of the three, combined with China's actual national conditions, the advantages of British and German vocational undergraduate education are absorbed, and the significance of China's higher vocational undergraduate education is proposed.

Keywords: *Vocational Undergraduate Education; China; University of Applied Sciences in Germany; UK Polytechnic Higher Education; Suggestions.*

I. INTRODUCTION

In 1963, "The Robbins Report" pointed out: implement a technology-centric industrial development strategy, and develop higher education in the technical field on a large scale to invest in the future, and suggested that every county has a university with a bachelor's degree. A White Paper, 'A Plan for Polytechnics and Other Colleges' was published in 1966, recommending the designation of colleges with the most potential as regional polytechnics to form a nation-wide network for technical education.. The plan pointed out that 90 trembling high-level Regional Colleges, Areas Colleges and Local Colleges in the UK continuing education institutions should be adjusted and merged to form a comprehensive new university——Multi-technical Colleges.

In the same period, Germany started the “conception” phase of construction in the 1960s. At this time, Germany was in urgent need of applied talents and built a national engineering college (Staatliche Ingenieurschulen) and a higher professional school (Hoehere Fachschulen) with a 3-year schooling system. Most of them are at the junior college level. Between 1969 and 1972, the German states established independent "Higher Education Laws." In 1976, the status of universities of applied sciences was clarified in the "Law on Compendium of Higher Education Institutions" in Germany, which enjoys the same legal status as German universities. It is stipulated that the school system of the University of Applied Sciences is 4 academic years, which is two more practical semesters than the "conception" stage. Therefore, the definition of universities of applied sciences and comprehensive universities is clearer, and the similarities and differences in the names of degrees obtained by graduates of the two types of universities are clearly put forward.

The educational system serves as the cornerstone of social and economic development. Stanley and McCann believe that educational policy in most countries is inspired by the theory of human capital that emphasizes the essential role of knowledge and skills emphasize development (Stanley and McCann, 2009). Technical education is one of the tools of industrial development and consequently economic development (Salehi Omran, 2004; Sabet Nezha et al., 2011; Bagherzadeh and Osareh, 2015; Maghsoudi, 2014). Technical education is an important tool for enhancing the dynamics, adaptability and productivity of the workforce and provides a framework for reducing labor market imbalances (Azizi, 2005).

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UNESCO's report on two international conferences, the Paris (1989) and Seoul Conferences (1999) emphasize that human- centered development and the key to development is technical training (UNESCO, 1989, Mohammad Ali, 2011). The new type of university is focused on the relationship between labor market and industry. Sporn (2001) states that European universities face the challenge of competitiveness and resource depletion. Future university will be influenced by the entrepreneurial paradigm and the triple helix approach of university, industry field and government. The evolution of the university-wide approach has led to the emergence of new terms such as corporate university, innovative university, adaptive university, Third Wave University, university of technology and vocational university (Yemeni Duzhi Sarkhabi, 2013).

Higher education institutions outside the university sector — in English variably called universities of applied sciences (UAS), university colleges, institutes of technology, and polytechnics — are a very important part of most European higher education systems, where nowadays they account for a large share of student enrolments (Taylor. 2008). Mostly these institutions were created through mergers of existing professional and vocationally oriented schools and colleges, they were assigned a mission distinct from universities (Kyvik, 2004). In most of country universities of applied sciences (UAS) they were not supposed to engage in research, they only providing professional and vocational education at bachelor level. Over time the binary divide has become increasingly blurred. (Huisman and Kaiser, 2001; Taylor et al., 2008).

III. RESEARCH METHOD

The methodology of this discourse is quantitative（M Lynch& B Walsh - 1998), starting from the literature, we compared UK Polytechnic Higher Education, the University of Applied Sciences in Germany and higher vocational undergraduate education in China, combined with China's actual national conditions, absorbed the advantages of British and German vocational undergraduate education, and improved China's higher vocational undergraduate education.

IV. DISCUSSION

Since the UK has only a short history of vocational undergraduate education, here is only an analysis of the current situation in Germany and China

	University of Applied Sciences in Germany	Higher Vocational Undergraduate Education in China
Enrollment requirements	50% of students come from high school graduates with corporate internship experience, and 50% of students are vocational high school graduates	85% of the students are high school graduates, 15% of the students come from vocational high schools, none of experience requirements
Training objectives	Carry out necessary basic theoretical education and sufficient vocational training for students to become senior technical talents with the ability to independently engage in professional activities in a certain field More than 40 years of development in Germany have made it a complete training model, providing master-level education, and co-cultivating technical doctorates with comprehensive universities. Students are required to have vocational skills in production and certain scientific research and technological development capabilities	Cultivate high-quality technical application-oriented and vocational-skilled senior professionals with solid basic theories
Subject settings	Engineering science, business and social sciences Subdivide professional directions according to engineering or technology and process fields, solve practical problems of enterprises in a targeted manner, and effectively meet the needs of industry development for human capacity structure	The initial stage of the combination of industry and teaching

V. CONCLUSION & SUGGESTION

The core policy requirement of the "National Vocational Education Reform Implementation Plan" (hereinafter referred to as the "Plan") is to treat vocational education as a type of education, and to explore the development of undergraduate level education as an effective way to deepen education reform and development. Throughout the industrialized countries and regions in the middle and late 20th century, especially the development trend of vocational education in Britain and Germany, it can be basically judged that most of them are undergraduate-level vocational education needs formed at a certain stage of social and economic development. It can be said that undergraduate level vocational education is an inevitable product of economic development. China should combine the experience of undergraduate-level vocational education development in Britain and Germany to develop an undergraduate-level vocational education path suitable for the development of socialism with Chinese characteristics. Through comparative analysis and learning from the development experience of industrialized countries, it is helpful to develop and improve China's higher vocational undergraduate education system. Link of China’s national conditions, some thoughts on the development of China’s higher vocational education are put forward.

5.1 Improve the professional degree management system

To avoid the lack of ethics in the development of vocational education in the UK, China should focus on improving the school's professional catalog to make the development of undergraduate vocational education institutions healthier and more efficient, as to realize the orderly connection of secondary vocational, higher vocational and undergraduate vocational education, and maintain the existing. The major of categories will remain unchanged. Focus

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on researching the catalog of undergraduate majors and do a good job in the orderly connection of master's education. Increase, decrease and adjust majors according to the needs of social and economic development. New occupations and new positions spawned by the digital economy and artificial intelligence can increase their professional appropriation. Major is one of the main carriers of talent cultivation. The implementation of undergraduate-level vocational education is to meet the needs of regional economic development, combined with industrial development, to create application-oriented core majors, to break through the shortcomings of vocational education at the junior college level, and to fully carry out professionalism. Integration and setting are more suitable for the new generation of industrial technical personnel under the current development of national conditions. In order to meet the needs of new technologies, new industries, and new models, professional clusters can be built to benchmark industrial clusters to achieve horizontal development.

5.2 Clarify talent training goals

China is in a critical period of industrial transformation and upgrading. As the industry upgrades, production processes are becoming more and more complex, and the demand for corresponding technical application talents is also expanding. This requires universities to provide new high-ends that are suitable for complex processes and technology-intensive sectors. Applied Talents. From the perspective of talent classification, the core of undergraduate-level vocational education is to provide the society with applied talents who meet professional social practice and bring benefits to the society. Applied talents can be divided into engineering application talents engaged in planning and design, technical application talents engaged in craftsmanship and execution, and skilled talents engaged in skills and operations. Therefore, undergraduate-level vocational education schools should focus on cultivating technical application-oriented talents as the primary goal. Cultivate applied talents with technical theoretical foundation and time skill experience.

The transformation and upgrading of social development, the structural changes in talent demand, and the upgrading of high-tech industrialization urgently need the support of a group of high-level technical talents with a solid theoretical foundation and strong technical capabilities. For the current needs of China's economic development, the talent training standards of vocational education at the junior college level can no longer fully meet the objective needs. The exploration and comparative analysis of undergraduate level education hope to help the current Chinese modern vocational education system to build an organic whole and play a role in linking the past. On the one hand, it’s opening the growth channel of vocational education students, on the other hand, it meets the inevitable requirements of the national economic development trend. The organic combination of industries, companies, and schools allows students to apply their knowledge and skills, and enables companies to accurately find qualified talents, so that the industry can upgrade the industrial structure faster and better when the supply of talents is abundant.

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