

Differences between Dual track System and Vocational Education: A Case Study of Germany and China

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Abstract. With the continuous development of the social productive forces and the rapid growth of the demand for various professional and technical personnel, China's vocational education has entered a new stage of continuous progress. The implementation of the 'double reduction' policy and the popularization of the quality education concept has opened up a broad space for China's vocational education. This trend has also aroused heated discussion among the public. In view of the current educational situation in China, Various experts have raised relevant questions: Is China's current educational environment conducive to the implementation of a vocational education system? And is there any defect in the current vocational education system? Based on these problems, after learning about the fact that China imitated the German education system, and the great success of German action to balance education, talent, and market. This paper aims to make a comparative analysis of dual-track education in Germany and the typical characteristics of vocational education in China. Therefore, this paper contributes to providing inspiration for the future development of vocational education in China and helping develop a vocational education system with Chinese characteristics.

Keywords: China's vocational education; the dual track education; the double reduction policy; the quality education concept.

1. Introduction

1.1 Research background

In this year, China's double reduction policy has successfully been implemented and popularized. Behind this is the change in educational ideology. In the past, education tended to be utilitarian and short-sighted, which means students were overburdened. Results become the only criterion to judge the success of an individual [1]. At the same time, the rapid development of after-school training was not only detrimental to the physical and mental health of students but also brought great economic pressure to families because of the high fees. The proposal of the double reduction policy has effectively reduced the occurrence of such phenomena. As a typical feature of social development under the double reduction policy, vocational education has increasingly developed. Under the general trend of social development, it is very important to study vocational education in China. This is not only useful for the current education policy to be taken into practice, but also bring inspiration to the future of education.

Looking at the history of China's education, it has obviously drawn on the German education system, which can be seen from The National Vocational Reform Implementation Plan issued by the State Council in 2019[2]. The plan points out that we should learn from the experience of Germany and other countries, especially learn from the dual system model. For this reason, China's vocational education system is similar to Germany's dual-track education. The comparative analysis of the differences between the two will be more practical and helpful to find out the methods and inspiration for Chinese education.

1.2 German Dual track System and Chinese Vocational Education

1.2.1. German Dual track System

In terms of the dual track education in Germany, the "dual track" means that students need to participate in both the vocational skills training organized by schools and the skills training held by

enterprises. The school refers to the special vocational school, which focuses on teaching specialized knowledge closely related to society, while the enterprise refers to various large and small enterprises, industrial and commercial associations, as well as handicraft associations. Students participate in the operation of enterprises and apply their knowledge to practical use. In essence, the dual track system is a model of school-enterprise cooperation, consultation and construction. The enterprise and the school build a bridge, jointly undertake the responsibility of cultivating children [1].

The dual-track vocational education model is a unique vocational education model created by Germany after World War II in order to quickly recover the economy and promote economic growth. It has been proved by practice that it is one of the most successful education systems in the world. With vocational education, Germany has cultivated a large number of professional and technical talents, seeing this, many counties has been successfully accepted and emulated this system.

1.2.2. Chinese Vocational Education

Currently, China's education system belongs to a branch type of education model, and students make school choices after reaching a certain age. Vocational education in China refers to the professional knowledge necessary for students to engage in certain professional and technical work. From its definition, it can be seen that China's vocational education focuses on theoretical knowledge rather than practicality and application, which is the difference between China's vocational education and Germany's dual track system.

Vocational education with modern significance in China began in the Westernization Movement in the 1960s, and has been developed and updated with the change of social system and social environment after this movement. The westernization group began to build industrial schools to train specialized technical personnel to the Northern Warlord Government formulated relevant system reform plans in 1922, and then vocational education developed and expanded after the founding of New China. However, the Cultural Revolution in 1966 hit the development of vocational education [1], leading to a certain degree of retreat. Later in 1979, the government work report of the second session of the Fifth National People's Congress redefined the development goal of vocational education, and vocational education has gradually recovered [3]. Until today, the updating of the society helped the vocational education model to be constantly innovated.

2. The overview of significant factors

No matter before or after the introduction of the double reduction policy, the comparative analysis of German dual-track education and vocational education in China has never stopped. It can be seen from past studies that many scholars have analyzed the differences in education between the two countries from the material aspects of the curriculum system and the capital investment. While summarizing and analyzing the relevant research results of previous scholars, this paper will also carry on the correlation contrast analysis from the social concept and the teacher's subjectivity. Due to the difference in the development of vocational education is the result of the joint action of multiple factors, not only national policies, but also society and even individuals have had a significant impact on the development of vocational education.

2.1 Physical level

2.1.1. The setting of curriculum

The dual-track vocational education in Germany is mainly based on specific local and school running characteristics [1]. The teaching activities are centered on professional activities and social practice, closely linked with people's daily production and life, and involved by various enterprises. The whole teaching process gives full play to the students' subjectivity and attaches importance to the student's sense of individual participation. Its educational system always adheres to the four "two": "two kinds of institutional training, two kinds of teaching materials, two kinds of examinations and two kinds of certificates". In the whole curriculum, practical courses account for 70% of the total.

This setting makes students' practical operation far greater than theoretical learning and makes the learning effect more prominent. Scientists have found the benefits of using this teaching mode in large quantities through investigation and research, the following table lists the advantages of the enterprise training-oriented and practice-oriented teaching models. From the table, it's easy to see that most people agree with the benefits of this model.

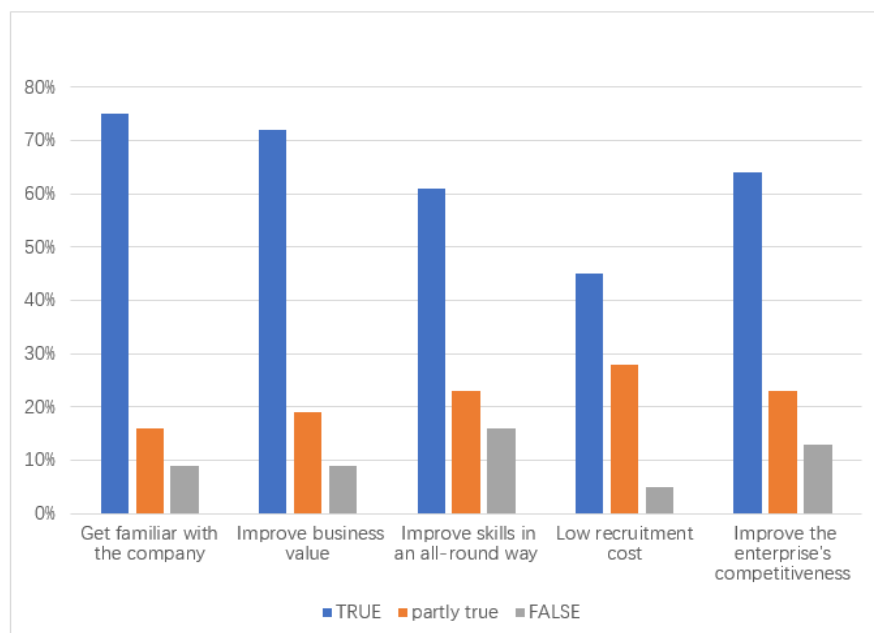


Fig 1. Benefits of training according to the enterprise.

On the contrary, it is necessary to have a look at the curriculum in China's vocational education system. It focuses on the opposite, emphasizing theoretical learning rather than practical activities. The curriculum in colleges and universities is designed for the purpose of learning the professional skills. Single model and lack of practicality, students spend a lot of time in the classroom.

2.1.2. The Education System itself

From the perspective of the education system itself, through research, it is found that Germany's dual-track education also has some shortcomings. From the education system, it is easy to find that the education diversion in Germany is too early. Children have been diverted from education since the age of 10, while in China, nine-year compulsory education is widely implemented. Children graduate from junior high school and have a certain degree of autonomy before the diversion of education. At the age of ten, children are still generally at the stage of lack of good independent judgment ability, so they cannot correctly choose their own development direction. The direction of children's education is largely determined by their parents and teachers in Germany, which cannot take into account their needs, and cannot reflect the feature of students as learning subjects.

2.1.3. Capital investment

German vocational education enterprises account for a large proportion of investment, accounting for 70%, in which enterprises have a high degree of participation. Due to the attention of the society, the corresponding German vocational education funds are very adequate, which means its development of it is guaranteed. This can be seen in the proportion of total investment in German vocational education in 2000. It shows that enterprises' investment in education accounted for 70%, while the common sector's investment accounted for only about 30%.

However, China's financial investment accounts for a large part, and social attention is not high enough. According to statistics, 85.2% of vocational colleges in China have a single source of funds, 34.7% of the schools mainly rely on tuition fees, 30.7% mainly rely on local government funding, 16.8% mainly rely on self-financing, 2% mainly come from the central government, and 1% mainly

rely on enterprise funding. Among them, 33% of the school funding is difficult to guarantee. Almost all vocational colleges have difficulties in terms of teachers, experimental training conditions, curriculum settings, textbook construction, etc [4]. There is basically no new financial input, and they operate mainly by charging tuition fees. It can be seen that at present, China does not attach much importance to the social aspects of vocational education, and it is difficult to guarantee the investment of funds [4]. With the continuous expansion of the development scale of vocational education in China, the contradiction between supply and demand becomes more and more prominent, then gradually becomes an obstacle in the process of education development [5]. The following is the proportion of each part of China's vocational education investment and the ratio of vocational education investment to other education:

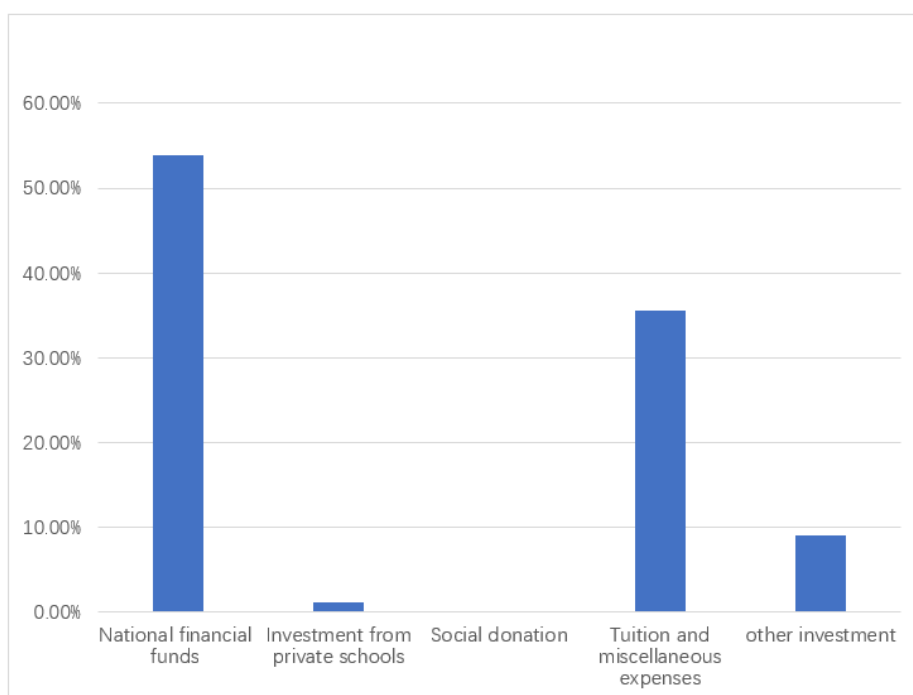


Fig 2. Source of funds for higher vocational education in 2011.

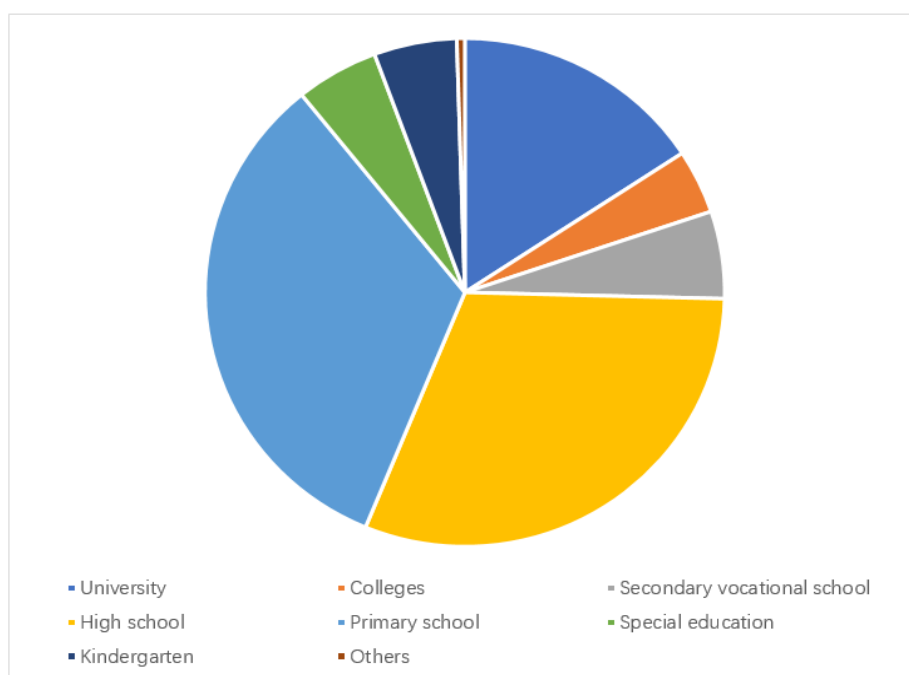


Fig 3. Investment in education funds in 2019.

2.2 Spiritual level

2.2.1. Social concept

The influence of social concepts on the national vocational education system cannot be ignored. In Germany, the whole society pays little attention to degrees and academic qualifications. People do not regard degree certificates as the only evidence to judge a person. Enterprises also select a person according to his real professional quality and ability. Under the influence of such a social atmosphere, Germans do not think that vocational education will be inferior. On the contrary, vocational education is highly praised, and people welcome this kind of educational model for it tends to be practical. According to the survey, the proportion of people who choose vocational education mode in Germany accounts for 60%, and two-thirds of the employed people in Germany have received dual track vocational training.

In China's general social outlook, due to the influence of the long-term social system culture and the past compulsory education model, the concepts of "score-only theory", "college entrance examination results determine life" and "poor academic performance will lead to vocational school learning" are still highly praised by many people, even some famous Chinese educators. These concepts have hindered the healthy development of vocational education. Children who grow up in this atmosphere will consider themselves inferior and mentally retarded if they enter vocational schools, so they will give up learning and no longer focus on cultivating their professional and technical abilities. Once an enterprise has such an idea, it will become unfair. For people with strong abilities and low education background, this will reduce their many job opportunities; for enterprises themselves, they can only recruit people who can only read but cannot practice, and those who are really capable will be forgotten by them.

2.2.2. Teachers' subjectivity

As the leader of talent training, the role of teachers in education cannot be ignored, and sometimes even play a decisive role. The teacher's attitude towards vocational education will also indirectly affect his or her classroom teaching methods and suggestions for students' learning, at the same time influence parents' and students' views on vocational education.

In Germany, the selection of teachers in vocational schools is very strict, which requires a combination of theory, skills and teacher training. If students want to apply for the major of vocational education teacher, you must also hold a diploma from a liberal arts school on the basis of the admission qualification. In addition, you must have more than one year of work experience. To become a teacher after learning, you have to pass two national examinations. Through layers of selection, high-quality and highly skilled talents have been selected. They have professional knowledge and positive attitude towards vocational education and will be proactive and encourage students to improve their skills.

However, in China, vocational teachers are often a group of teachers who have been eliminated by colleges and universities [2]. Then, it is the second best choice for them to teach in vocational colleges. They also hold the view that students who carry out vocational education have poor academic performance and they are inferior to students in ordinary colleges and universities. In the teaching process, their enthusiasm is not high, and the students cannot be taught real practical knowledge. Finally, students will lose the confidence and motivation of learning under the influence of such teachers, which is very detrimental to the development of China's vocational education.

3. Suggestions

3.1 Macro level

First, China should combine theoretical guidance with practice. Vocational education is based on the training of professional and technical personnel. Technical training cannot be separated from field training. Classroom teaching and enterprise training should be promoted to complement each other.

It is necessary to follow the example of Germany in promoting the establishment of a cooperative mechanism between vocational colleges and enterprises, and actively build a bridge between them so that students can have the opportunity to truly improve themselves and truly serve social construction [6].

Second, comprehensive assessment methods can be adopted to diversify the content of performance evaluation. In this case, the concept of quality education currently implemented in China and the recent policy of "double reduction" are typical and effective countermeasures [2]. No matter the country or society, even individuals should learn this educational concept, so as to promote the all-round development of students, further eliminate social prejudice against vocational education, and ensure the smooth development of vocational education [7].

3.2 Micro level

Teachers should change their traditional ideas. At present, a large number of teachers do not understand the relationship between higher education and vocational education clearly. Only students who think their academic performance is poor can enter vocational schools to study. Under the influence of teachers, students and parents will also have a prejudice against vocational education and are unwilling to enter such schools. This is harmful to the development of vocational education. Therefore, teachers should change their thoughts, correctly guide students and parents, and ensure the smooth implementation of educational policies [1].

The curriculum content should be set in combination with the local social and economic development [8-16]. It is suggested to fully consider the characteristics of a specific region, find the most advantageous industry in this area, so as to combine the relevant theoretical knowledge of the industry with the course content, which is conducive to stimulating students' interest in learning and training professional and technical personnel for the development of the area [2].

4. Conclusions

To sum up, comparing the differences in vocational education systems between China and Germany, it is found that China still has some room for improvement in many aspects. Then, people can learn and absorb the advantages of the German dual-track education system, but at the same time, comparing the two systems, it is found that the German education system still has shortcomings in some aspects, and China should maintain its own advantages in these areas, constantly update and make progress. In addition, it is worth noting that any reference to methods should pay attention to their applicability. The purpose of studying the differences between German dual-track education and Chinese vocational education is not to copy the German education model, but to provide some inspiration. Then, it is necessary to develop vocational education with Chinese characteristics in combination with the current situation in China. This is also the ultimate goal of this study mentioned at the beginning.

In the future, there is still a long way to go for vocational education in China, and it is necessary for us to try our best to effectively solve the problem of the contradiction between supply and demand. Only by continuous learning, combining with the national conditions, and adhering to innovation can people truly open up a path for the development of professional and technical talents, thereby providing construction talents for the economic development of China and the world.

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