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## Study on the Development of Secondary Vocational Education in China

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### Abstract

In order to understand the current situation of secondary vocational education research in China, this paper adopts the literature research method to study the development of secondary vocational education in China. Firstly, we searched the literature of secondary vocational education research and found that the main research literature was focused on three areas: "research on secondary vocational education development", "research on school-enterprise cooperation and industry-education integration model of secondary vocational education", and "research on secondary vocational teaching reform". After analyzing the hotspots of secondary vocational education research, the future directions that researchers should focus on in the field of secondary education research in the future are generally "problems in the development of secondary vocational education", such as promoting the research of "school-enterprise cooperation and integration of industry-education" in secondary vocational schools. "The important role of secondary vocational education as a bridge", such as the promotion of the "double high" policy, which opens up new channels for higher education or vocational-technical universities through the creation of specialties. "Teacher training and pedagogical innovation in secondary vocational education" e.g. interdisciplinary cross-fertilization. It is strongly believed that these recommendations will be useful for researchers concerned with the field of secondary vocational education.

**Keywords:** *Secondary vocational education development; research hotspots*

### A. Introduction

The development of secondary vocational education, as the pivot between the compulsory education stage and secondary education and even higher education, should be given corresponding attention. China has been promoting the development of modern vocational education in recent years to further transform from an "academic society" to a "skill-based society" in order to better adapt to the development of the country and society. Because of this, this paper adopts a literature research method to study the development of secondary vocational education in China, searching literature about secondary vocational education on China Knowledge Network, using "secondary vocational education" as the title of the article, fully selecting the classification of literature, and setting the time of the literature source from 2013 to 2022 (the deadline of the search is August 18, 2022) to obtain a total of 707 valid papers. Through the hotspot research analysis, the main research hotspots focus on "problems in the development of secondary vocational education" such as promoting "school-enterprise cooperation and industry-education integration" in secondary vocational schools. In addition, the research direction of "problems in the development of secondary vocational education", "the important role of secondary vocational education as a bridge" and "teacher training and pedagogical innovation in secondary vocational education" were proposed for future research in

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the field of secondary vocational education. Teacher training and teaching innovation". Through this paper, we will study the development of secondary vocational education for the sake of the country.

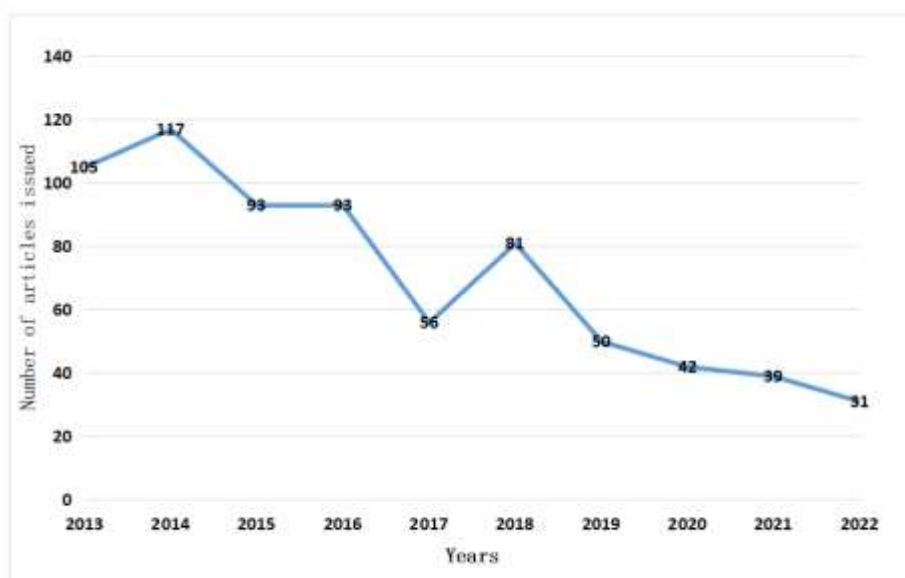
## B. Methods

The literature data in this study were obtained from the China Knowledge Network (CNKI) database. In the study, "secondary vocational education" was used as the title of the article, and the literature classification was fully selected, and the period of the literature source was set from 2013 to 2022 (the deadline for searching was 18 August 2022) 707 valid papers were obtained. This study uses the bibliometric and visualisation tools of China Knowledge Network (CNKI) to assist in the analysis of the volume of literature and research hotspots on "secondary vocational education" in the last decade.

## C. Findings and Discussion

### 1. Analysis of the Volume of Secondary Vocational Education Research Literature

By analysing the amount of literature on secondary vocational education and the corresponding time period, it is possible to grasp to a certain extent the volume and pace of development of secondary vocational education research in China over a certain period of time. By capturing the timing of the research and the corresponding literature, it is possible to better predict the development trend of this field in the coming period. In the study, the number of published articles in China in the last decade, i.e. between 2013 and 2022, was analysed and predicted to be 35 in 2022 by combining the bibliometric tools of China Knowledge Network. Figure 1 shows that the number of publications increased between 2014 and 2018, while the overall change showed a decreasing trend.



**Figure 1.** Trends in the volume of literature published on secondary vocational education

Figure 1 shows the number of articles published in China's secondary vocational education research literature on China Knowledge Network (CNKI) in the past ten years from 2013 to 2022 (as of the search date). According to Figure 1, it can be seen that the overall number of publications on secondary vocational education has shown a decreasing trend in the past ten

years, indicating that the attention of Chinese educational researchers in this area has gradually decreased. The change in the volume of literature reveals that the development of secondary vocational education in the last decade can be divided into three time periods. The first period is from 2013 to 2014, when the number of articles published has shown little increase in the last decade, and the number of articles published in 2014 is the peak of the last decade. The research themes are more focused on "vocational education teaching", "curriculum reform" and "vocational education development". For example, in the early stage, some scholars investigated and researched the current situation and problems of reforming the enrollment system and teaching mode of secondary vocational education, such as the decrease of junior high school graduates in some regions, the shortage of secondary vocational students, the lack of comprehensive planning of enrollment majors and scale, the mismatch between school personnel training and demand, and the failure of teaching mode and management methods to keep up with development needs (Zhaowen et al., 2013).

Following closely on from the National Vocational Education Work Conference held by the State Council in 2014 and the introduction of the Decision on Accelerating the Development of Modern Vocational Education, the reform and research of secondary vocational education was promoted, which in turn contributed to the increase in the volume of literature in 2014. In a study on the construction of a "two-level integration" model of school-enterprise cooperation in secondary vocational education, the scholar Hyper Liping pointed out that In his study on the "two-level integration" model of school-enterprise cooperation in secondary vocational education, scholar hyper Liping pointed out that "school-enterprise cooperation in secondary vocational education development is a bottleneck that needs to be broken" (Liping, 2014) and proposed the construction model and the way to achieve it, in order to further accelerate the development of modern secondary vocational education.

The second stage is from 2015 to 2016, compared with the previous stage of development, the volume of literature in this stage has decreased, but we can learn from the graph that the development is more moderate. In this phase, the themes of "school-enterprise cooperation", "integration of industry and education" and "development of vocational education" are more prevalent, and researchers are exploring different regions, for example, the development of new schooling for farmers. For example, research on new ways of running secondary vocational education was conducted for farmers, and research was carried out in the localities chosen by the researchers. For example, Jiang Lixin and Lian You studied the countermeasures for the coordinated development of secondary vocational education and higher vocational education (Lixin & You, 2016) and Wu Niyan, Wang Zimin and Zhang Dehong (2016) discussed the curriculum reform of the interface between secondary vocational education and higher vocational education.

The third phase, from 2017 to 2018, showed a high growth trend in the number of articles issued in 2018. 2018 saw the publication of the Ministry of Education's "Highlights of the Ministry's Work in 2018", which proposed continuous improvement of the vocational education and training system for vocational education, such as deepening the integration of industry and education, school-enterprise cooperation and issuing measures to promote school-enterprise cooperation in vocational schools, etc., to improve the secondary vocational education system even more. At the same time, requirements are put forward for vocational education teachers, so that vocational education teachers also focus on their own teacher exhibition development. In

addition to this, Zhejiang Province has issued the Notice on the Pilot Project of Integrating Secondary Vocational Education with Applied Undergraduate Training, which has greatly facilitated the development of secondary vocational education and given students more choices.

This is also an important reason for promoting this phase of secondary vocational education research. The third stage is from 2019 to the present, the number of secondary vocational education research and publications decreases year by year, and the relevant research fades out of the vision of vocational education researchers. In the third phase, new terms such as "empirical research" and "high quality development" appear in the research, and this phase is also a time to push the development of secondary vocational education to new heights. With the implementation of the "double-high" policy and the release of the White Paper on the Development of Vocational Education in China, the research on secondary vocational education is bound to reach new heights in 2022 and beyond

## **2. Analysis of Hot Spots in Secondary Vocational Education Research**

A review of the literature reveals three main research hotspots in secondary vocational education in China, including "Study on the development of secondary vocational education" "Research on school-enterprise cooperation and industry-education integration model in secondary vocational education" and "Study on the reform of secondary vocational teaching".

## **3. Study on the Development of Secondary Vocational Education**

In the last ten years, research on the development of secondary vocational education has focused on the impact of the post-secondary streaming system, the impact of urbanisation, the impact of the "double-high" policy and the development of secondary vocational education in specific study areas. The development of secondary vocational education has always been a hot topic for researchers, and secondary vocational education is a key point of the two-way link between junior secondary education and higher vocational education. Since 2005, when the Decision on Vigorous Development of Vocational Education was proposed, the development goal of secondary vocational education has been put forward, which has further promoted the formation of post-secondary education diversion.

Hongli (2013) believes that: post-secondary education streaming has played a great role in promoting the development of senior secondary education, but has brought some negative effects to secondary vocational education in the process of implementation and in the implementation after streaming. suggests that the problems and impacts should be addressed, for example, by improving policies to support vocational education, and by accelerating the reform of the education system to improve policies. Professor Shi Weiping, in his expert talk on the development of secondary vocational education. Dayuan et al (2018) talks about "thinking about some major issues in the development of secondary vocational education in China in the new era", rethinking the issues of concern to society, such as the process of moving towards Industry 4.0 In the process of moving towards Industry 4.0, half of the skilled workers in intelligent workshops are replaced by robots, is secondary vocational education still needed? Who will be the main force behind the universalisation of upper secondary education? Will it be general high schools or vocational schools? What is the original purpose of building a modern vocational education system, and what are the prospects for further education or careers? The seminar was a reflection and elaboration on a number of issues.

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Professor He Zhen said that the controversy over the ratio of vocational education to universal education needs to be addressed as a deep-rooted social prejudice, stressing that vocational education as a type of education is only for the unique education and teaching rules of vocational education itself, and that vocational education resources do not only belong to a specific group of people, but should allow all students to enjoy the value of vocational education, so as to achieve the value-added of human capital for all students. From Professor He Zhen's explanation, it is clear that the change of concept is also a key point to promote the development of secondary vocational education (Hui et al., 2018).

In addition, some scholars have conducted research and studies on the development of secondary vocational education in specific regions, and such studies highlight local characteristics, so that comparisons of similar studies can reveal the differences in the specific problems of each region, which is more conducive to "prescribing the right remedy". For example, Ma Liya (2021) investigates the development of private secondary vocational education in six Tibetan states in Qinghai. She introduces the basic situation of the selected secondary vocational schools and analyses the problems and causes in the development process, such as the lack of school-enterprise cooperation and industry-university integration, the backwardness of school conditions, and the serious homogeneity of professional settings. The researcher gives countermeasures to solve the problems.

The researcher explores the diversified development paths of secondary vocational education and proposes that the main paths include reconstructing the general idea of transformation and development, constructing the goal orientation of both employment and further education, and exploring the diversified forms of secondary vocational education to provide the basic guarantee for adapting to the current secondary vocational development (Mengqing & Jing, 2022).

### **3. Research on School-Enterprise Cooperation and Industry-Education Integration Model in Secondary Vocational Education**

School-enterprise cooperation and industry-education integration aim to establish an interconnection between actual production and business processes and educational teaching activities, and to bring into play the advantages of schools and enterprises to achieve the goal of cultivating high-quality professional talents in the new era. Therefore, school-enterprise cooperation and the integration of industry and education in secondary vocational education have become hot issues for research. Some researchers have studied the construction of the "two-level integration" model of school-enterprise cooperation in secondary vocational education, explaining the meaning of the "two-level integration" model of school-enterprise cooperation and proposing specific implementation methods based on the problems found by the researchers in school-enterprise cooperation, specifically the construction of The new model is based on a dialogue platform between schools and enterprises, the establishment of a school-enterprise cooperation carrier, and the sharing of resources between schools and enterprises (Liping, 2014).

The new model should be accompanied by new teaching materials so that better practice can be carried out. Sun Qiqi conducted a study on issues related to the construction of teaching materials for school-enterprise cooperation. After making statements on the causes of problems in the process of textbook construction research, such as outdated writing concepts, textbook content not well and closely aligned with vocational standards, and the lack of an evaluation

system for school-enterprise cooperative textbooks, the researcher gives suggestions on countermeasures for school-enterprise textbook construction in relation to the relevant vocational education policies and opinions promulgated by the Ministry of Education of the People's Republic of China, such as strengthening ties with industry enterprises, innovating textbooks, combining Internet+, innovating textbook The researcher gave suggestions for the construction of school-enterprise teaching materials, such as strengthening ties with industry and enterprises, innovating teaching materials, combining Internet+, innovating teaching materials, establishing an effective evaluation system, etc (Qiqi, 2016).

The integration of industry-education and school-enterprise cooperation go hand in hand, and research on the integration of industry-education in secondary vocational education can also be found to be a hot issue this year from Figure 5. Li Yang and Jiang Wen explored the deepening of industry-education integration and improving the service capacity of secondary vocational education, and found new problems in the study, i.e. school-enterprise cooperation is "hot in schools but cold in enterprises" and there is a shortage of teachers in secondary vocational majors. For example, in the professional development, the government should coordinate and coordinate the research and innovation at the school level, and strengthen the construction of teachers (Yang & Wen 2019). The research on school-enterprise cooperation and industry-education integration in secondary vocational education is of great practical significance.

#### **4. Study on the Reform of Secondary Vocational Teaching**

The issue of teaching and learning has always been a hot issue in educational research, whether in compulsory education, secondary vocational education or higher education teaching. There are two main types of research one is the application of new methods or teaching models to research, and the other is the investigation of the current state of teaching reform over time. The first type of research has researchers on the integration of the current Internet into the study of public English teaching methods in secondary vocational education, and the authors elaborate on the need to maximize the use of the Internet for example, specific teaching strategies include taking advantage of information technology, enriching teaching content, and allowing students to expand their knowledge and improve their learning ability by studying the Internet teaching resource base in advance (Shuang, 2022).

There is also the use of multimedia, innovative teaching forms, which can transform the teaching content into dynamic teaching making students learn English knowledge better. A better teaching reform will inevitably lead to the construction of curriculum system, and Zhang Jun and Zhang Miaoyi have studied the construction of new curriculum system of secondary vocational education under the orientation of "vocational basic education", and put forward ideas for the construction of new curriculum system of secondary vocational education, such as the development of vocational basic knowledge curriculum based on the needs of knowledge domain, and the development of vocational basic knowledge curriculum based on the needs of value domain. The development of vocational basic literacy curriculum based on the needs of value domain, and the concept of multidimensional curriculum development based on the needs of multiple domains (Jun & Miaoyi, 2022).

The above ideas on curriculum construction provide good guidance for better teaching and learning in secondary vocational education. The most representative study in the second category is the study on the current situation of secondary vocational teaching reform based on the collection of secondary vocational teaching achievement awards in 12 provinces by Lijuan Gao

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and Xiao Liu. From the research study, the researchers have drawn some revelations, such as consolidating the basic status of secondary education, still need to adhere to diversified development, focus on the cultivation of students' vocational skills need to take into account the improvement of comprehensive literacy, etc (Gao & Liu, 2022).

#### **D. Conclusion**

First, researchers should continue to pay attention to the problems in the development of secondary vocational education. For example, in the future, we should increase our efforts to understand the problems in the operation of secondary vocational education schools in specific regions through surveys, and carry out research on corresponding solutions according to the actual economic situation, student enrolment and teachers in each region. This will enable the development of secondary vocational education in a more practical way. And continue to promote the study of "school-enterprise cooperation and industry-education integration" in secondary vocational schools, so that secondary vocational education schools and enterprises can develop better in both directions.

Secondly, researchers should focus on the important role of secondary vocational education as a bridge. On the one hand, it connects with compulsory education, and on the other hand, it connects with higher education. For example, the implementation of the "double reduction" policy in compulsory education requires secondary vocational education to be strengthened, so that it can contribute to the construction of a high-quality education system and improve the diversion and integration policy after junior secondary school. On the other hand, secondary vocational education plays an important role in promoting the "double-high" policy by establishing specialities that open up new channels of talent input for higher education or vocational-technical universities, while also providing more opportunities for more secondary school students, so that secondary vocational education and higher education can develop rapidly in both directions and better accelerate the modernisation of vocational education. Thirdly, researchers should pay more attention to secondary vocational education.

Thirdly, researchers should pay more attention to teacher training and teaching innovation in secondary vocational education. As the development of society has entered a new era, teachers in secondary vocational education should enhance their knowledge base in line with the characteristics of the times, and schools should also pay attention to the professional development of teachers. For example, the training of 'dual-teacher' vocational teachers is an issue that has been raised. This can be achieved through a partnership between secondary vocational schools and higher education institutions, which can produce secondary vocational teachers with outstanding educational research skills and excellent teaching abilities. In terms of teaching innovation, the future could start with interdisciplinary cross-fertilisation of teaching, combining theory and practice and using the STEM concept as a guide to innovative secondary vocational teaching.

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