

The Guidelines for Developing the Integration of Production, Education, and Research under the Background of "Double High Plan" in Guizhou, China

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Abstract

The objectives of this research were: 1) to study the current situation of industry-education integration under the background of the "double-high plan" in higher vocational college in Guizhou, China, 2) to develop the guidelines for industry-education integration under the background of the "double-high plan" in higher vocational college in Guizhou, China, and 3) to evaluate the adaptability and feasibility of the guidelines for industry-education integration under the background of the "double-high plan" in higher vocational college in Guizhou, China. The population of this research contained 420 teachers from four higher vocational colleges. According to the Krejcie and Morgan sampling table (1970), the sample group of this research was 201 teachers from four higher vocational colleges in Guizhou, and simple random sampling was used in this research.

Furthermore, the interviewees of this research were five administrators, teachers, and industry representatives. Five high-level administrators in Guizhou were the five experts in evaluating the adaptability and feasibility of the guidelines. Purposive sampling was used in this part.

The research instruments were a questionnaire, a semi-structured interview, and an evaluation form. The statistics for data analysis were frequency, percentage, mean, standard deviation, and content analysis.

The results found that: 1) the current situation of industry-education integration under the background of the "double high plan" in the higher vocational college in Guizhou was government policy support, the attractiveness of higher vocational colleges, 2) The guidelines for industry-education integration under the background of the "double high plan" in higher vocational colleges in Guizhou had three dimensions: government dimension, higher vocational colleges dimension, and enterprises dimension, and 3) The adaptability and feasibility of the guidelines were at the highest level, with values ranging from 4.00 to 5.00.

Keywords: higher vocational school, integration of production and education, double higher program

1. Introduction

In 2019, China's State Council introduced the National Vocational Education Reform Implementation Program, aimed at elevating the standards of vocational schools and specialized professions nationwide. As a critical component of this program, the Ministry of Education and Finance jointly formulated and released a specific set of guidelines in April 2019. Known as the "Double-High Plan," these guidelines are designed to develop high-level vocational schools and professions that reflect Chinese characteristics. Years of effort in integrating industry with education have already yielded promising results. This success is particularly noteworthy in the context of rapid scientific and technological advancements and an urgent need for industrial modernization. To further accelerate China's economic and social development in this new era, the expansion of higher vocational education is being strategically scaled up. This ambitious endeavor presents both opportunities and challenges. The "Double-High Plan" encourages higher vocational institutions to deepen their engagement with industry, aligning educational objectives with the evolving needs of society. The plan underscores the importance of incorporating vocational education into the broader economic framework, making it essential to developing industrial chains. The "Double-High Plan" serves as a crucial catalyst for improving the quality of vocational colleges and universities in China, strongly emphasizing the integration of industry

and education. This focus is significant for the growth and development of higher vocational institutions. In this regard, Guizhou Province, a less-developed region in western China, has made remarkable strides. Under the "Double-High Plan," the province has effectively advanced the integration of industry and education. However, despite this rapid progress, Guizhou needs to catch up with more developed regions such as Guangdong, Shenzhen, Jiangsu, Shandong, and Zhejiang. Persistent challenges include gaps in policy frameworks for industry-education integration and the evolving roles of both government and enterprises in this endeavor. As highlighted by Shi and Hao in 2019, integrating industry and education and building partnerships between educational institutions and enterprises has long been a cornerstone of China's vocational education reform.

1.1 Concepts of Industry-Education Integration

1.1.1 Connotation of Industry-education Integration

In 2013, the Opinions on Deepening Comprehensive Reform in the Field of Education proposed "integration of industry and education" for the first time. While combing through the literature, different scholars interpreted the connotation and role of "integration of industry and education" differently.

Yang (2022) points out that the "integration of industry and education" has risen from the initial education system to the height of national strategy. In the new era, integrating higher vocational education has an essential impact on industrial upgrading, talent cultivation, education reform, and scientific and technological innovation. It is an integral part of the realization of the country's high-quality development and the revitalization of the nation, which is conducive to serving regional and local economic and social development.

Wu and Huang (2022) proposed that the integration of industry and education is a modern vocational education system that promotes the cross-border integration of "industry" and "education" and the cooperation between schools and enterprises to educate people.

Zhang and Zhang (2022) believe that integrating industry and education and school-enterprise cooperation is integral to the high-level development of vocational colleges and universities under the modern "double-high program."

Guo and Xu (2022) believe that the construction of "Double-high" is an essential engine for the high-quality development of vocational colleges and universities, and the integration of industry and education is one of the critical contents of the construction of "Double-high." The establishment, improvement, and practice of the industry-education integration guarantee the steady and efficient progress of the "double-high" construction, consolidate the status of vocational education, and cultivate excellent technical and skilled talents for economic and social development.

Zhu (2022) pointed out that since the founding of New China, China's rapid economic development and industrial structure have continued to optimize, and independent innovation capacity is increasing. However, the proportion of capital-intensive industries showed a slight upward trend; the balance of labor-intensive industries, such as manufacturing, has always far exceeded the proportion of capital-intensive industries. The demand for skilled personnel is still strong. However, China's vocational education and training level still needs to be improved to meet industrial development needs, and the supply and demand of high-quality vocational and skilled personnel is prominent. To balance the contradiction between the supply and demand of vocational qualified personnel, in-depth cooperation between schools and enterprises and vigorously promoting the integration of vocational education is undoubtedly an essential means of improvement.

The integration of industry and education in China has evolved from being part of the initial educational system to becoming a national strategy. This integration is particularly crucial in higher vocational education, impacting various sectors such as industrial upgrading, talent development, education reform, and scientific innovation. It is an essential component of the "Double-High" program, aimed at enhancing the quality of vocational colleges and universities. A well-established mechanism for this integration is vital for the program's success and for producing skilled talents needed for economic and social development.

Despite China's rapid economic growth and increasing capacity for innovation, there remains a significant gap between the supply and demand for skilled personnel, especially in labor-intensive industries like manufacturing. To address this imbalance, in-depth cooperation between schools and enterprises is essential, and the integration of vocational education is seen as a key means of improvement.

2. Method

This study combines quantitative and qualitative research to comprehensively understand the current development of industry-education integration in Guizhou's higher education institutions. The aim is to formulate a pathway for

integrating industry and education in Guizhou's higher vocational institutions and evaluate the guidelines' adaptability and feasibility.

2.1 Research Questions

- (1) What is the current situation of industry-education integration under the "double-high plan" background in the higher vocational colleges in Guizhou, China?
- (2) How to develop guidelines for industry-education integration under the background of the " double-high plan" in higher vocational colleges in Guizhou, China?
- (3) How to evaluate the adaptability and feasibility of the guidelines for industry-education integration under the " double-high plan" background in the higher vocational college in Guizhou, China?

2.2 Research Objectives

- (1) To study the current situation of industry-education integration under the "double-high plan" background in the higher vocational colleges in Guizhou, China.
- (2) To develop guidelines for industry-education integration under the " double-high plan" background in higher vocational colleges in Guizhou, China.
- (3) To evaluate the adaptability and feasibility of the guidelines for industry-education integration under the " double-high plan" background in the higher vocational colleges in Guizhou, China.

2.3 Research Scope

Population and the Sample Group

The population of this research contained 420 teachers from four higher vocational colleges.

The Sample Group

According to the Krejcie and Morgan sampling table (1970), the sample group of this research was 201 teachers from four higher vocational colleges in Guizhou, and simple random sampling was used in this research.

The interviewee of this research was 5 administrators, teachers, and industry representatives. The interviewee's qualifications were as follows: 1) at least 5 years of work experience as an administrator in a higher vocational college, 2) extensive leadership experience, and 3) graduated with a bachelor's degree or above.

Five high-level administrators in Guizhou were the five experts in evaluating the adaptability and feasibility of the guidelines. The experts' qualifications are 1) at least 10 years of work experience as a high-level administrator in a higher vocational college. 2) rich experience in industry-education integration, 3) graduated with a doctoral degree, and 4) academic title is Associate Professor or above.

2.4 Research Instruments

The instrument in this study includes a questionnaire, interview form, and evaluation form.

2.5 Questionnaire

Research instrument for Objective 1: The questionnaire was designed based on the relevant literature and theories and used Sun (2021, p.205) as a reference. The questionnaire was distributed to 30 administrators of higher education institutions in Guizhou for trial. The reliability of the questionnaire was derived from Conbach's alpha coefficient (Conbach's Alpha Coefficient). 0.812. The reliability coefficient value is 0.812, which is greater than 0.8, thus indicating a high reliability of the study data.

2.6 Semi-Structured Interviews

Research instrument for Objective 2: The researcher invited 5 administrators for face-to-face interviews.

2.7 Evaluation Form

Research instrument for Objective 3: The researcher designed an evaluation form to evaluate the adaptability and feasibility of the guidelines in this step.

2.8 Data Collection

2.8.1 Collection of Questionnaires

The researchers sent out a questionnaire to collect data from 201 teachers in four higher vocational colleges in Guizhou, and a total of 201 questionnaires were recovered, accounting for 100%.

2.8.2 Semi-Structured Interviews

By interviewing five interviewees, including college leaders, middle-level managers (The person in charge of the industry-teaching integration project), and heads of enterprises in A1 of higher vocational institutions, relevant information was collected to grasp the status quo of the school's industry-teaching integration and the situation of the featured industry-teaching integration project, etc., to provide support for the construction of the development guideline of industry-teaching integration in higher vocational institutions in the present study. Follow the steps to conduct interviews and collect and organize interview materials.

2.8.3 Evaluation Form

To evaluate the adaptability and feasibility of the guidelines for industry-education integration under the "double-high plan" background in the higher vocational colleges in Guizhou, China, based on Likert (1932).

2.9 Data Analysis

The statistics used for data analysis in this study are as follows:

- (1) The questionnaires were analyzed by mean and standard deviation.
- (2) Semi-structured interviews were analyzed by content analysis.
- (3) The evaluation of adaptability and feasibility of the guideline of industry-education integration under the background of the "double-high plan" in higher vocational colleges in Guizhou was analyzed by mean and standard deviation.

3. Results

Part 1: The analysis results of the current situation of industry-education integration under the background of the "double-high plan" in higher vocational colleges in Guizhou, China. The data are presented in the form of mean and standard deviation.

Table 1. Mean and standard deviations of the current situation of industry-education integration under the background of the "double-high plan" in three dimensions (n = 201)

	industry-education integration under the background of the "double-high plan."	\bar{X}	S.D.	Level	Order
1	Government policy support	3.01	1.035	medium	3
2	Attractiveness of Higher Vocational Colleges	3.78	1.266	high	1
3	Active participation of enterprises	3.38	1.149	medium	2
Total		3.39	1.15	medium	

According to Table 1, the data showed that the current situation of industry-education integration under the background of the "double-high plan" in three dimensions was at a medium level ($\bar{X} = 3.39$). Consider the results of the study aspects ranged from the highest to the lowest level were as follows: the highest level was the attractiveness of higher vocational colleges ($\bar{X} = 3.78$), followed by the active participation of enterprises ($\bar{X} = 3.38$), and government policy support was the lowest level ($\bar{X} = 3.01$).

Table 2. Guidelines of Industry-Education Integration in Guizhou Higher Vocational Colleges and Universities

Guideline of Industry-Teaching Integration in Guizhou Higher Vocational Colleges and Universities	How to
Government dimension	<ol style="list-style-type: none"> 1. Local governments to strengthen policy support, establish sound regulations, and incentives policy system policy. 2. Build a platform to encourage active docking between higher vocational colleges and government, industry, enterprises, etc. 3. Strengthening the construction of parks and building platforms and carriers for the integration of industry and education 4. Innovative evaluation of talents and formation of a social culture of cooperation and innovation 5. Establishing and improving the standard and shared mechanism to promote the effective conversion of resources 6. Promote the construction of an environment for integrating industry and education by developing "government-school-enterprise" multi-dimensional cooperation. 7. Appropriate decentralization and further promotion of the "release of services" reform in education
Higher Education Institution Dimension	<ol style="list-style-type: none"> 1. Optimize the top-level design and formulate guidelines for the integration of industry and education in line with the institutions' strengths and characteristics 2. Accelerating the reform of talent cultivation methods and promoting the integration of all elements of the main body of industry-education integration by optimizing the professional settings, curriculum system, teaching methods, and evaluation system. 3. Construct clusters of projects related to the integration of industry and education to form a cluster effect and give play to the advantages of collections. 4. Promote comparative research related to the integration of industry and education and construct a development guideline for the integration of industry and education with its characteristics and advantages. 5. In the process of teaching management, appropriately integrate the management concepts of enterprises
Enterprise Dimension	<ol style="list-style-type: none"> 1. Give full play to its primary role in technological innovation and incubation of scientific research results, and promote the deep integration of talents, knowledge, technology, and other innovation elements of universities into the industrial field continuously 2. Actively promoting the joint creation of a model platform for innovative and complex high-level talents 3. Assist higher vocational colleges and universities to do an excellent job in researching the demand for talents to provide a scientific basis for the setting, deletion, increase, and transformation of specialties. 4. Promote the construction of practice teaching bases and establish a good talent training-supply and demand cooperation relationship. 5. Active promotion of mixed ownership colleges

According to Table 2, under the background of the "Double-High Plan," 17 measures are proposed from the three dimensions of government, school, and enterprise, combined with the "Triple Helix Theory" on the guideline of

integration of production and education in Guizhou's higher vocational colleges and universities. Among them, 7 measures are related to the government dimension, 5 are related to the higher vocational colleges dimension and universities, and 5 are related to the enterprise's dimension.

Table 3. Mean and standard deviation of the evaluation of the adaptability and feasibility of the guideline for the integration of industry and education in Guizhou's higher vocational colleges and universities (n=5)

Guideline of Industry-Teaching Integration in Guizhou Higher Vocational Colleges and Universities	Adaptability			Feasibility		
	\bar{X}	S.D.	level	\bar{X}	S.D.	level
Total	4.57	0.68	highest	4.47	0.80	highest

According to Table 3, The adaptability and feasibility of the three aspects of the development guideline for the integration of industry and education in Guizhou's higher vocational colleges and universities are at the highest level, with values between 4.00 and 5.00, indicating that the development guideline for the integration of industry and education in Guizhou's higher vocational colleges and universities has adaptability and feasibility.

The adaptability and feasibility of the guideline of the integration of industry and education in Guizhou's higher vocational colleges and universities in the three aspects are at the highest level, with values between 4.00 and 5.00, which indicates that the guideline of the integration of industry and education in Guizhou's higher vocational colleges and universities has adaptability and feasibility.

4. Discussion

The research in industry-education integration under the "double-high plan" background. This paper summarizes the discussion into three parts, as follows:

Part 1: The current situation of industry-education integration under the background of the "double-high plan" in higher vocational colleges in Guizhou, China.

Part 2: The guideline of industry-education integration under the "double-high plan" background in higher vocational colleges in Guizhou, China.

Part 3: The adaptability and feasibility of the guideline of industry-education integration under the background of the "double-high plan" in higher vocational colleges in Guizhou, China.

The discussion was described in Part 1: Current State of Industry-Education Integration in Higher Vocational Colleges in Guizhou, China, Under the "Double-High Plan." "The current state of industry-education integration in higher vocational colleges in Guizhou, China, under the "Double-High Plan," can be assessed across three dimensions and is generally at a medium level. When ranking these dimensions from highest to lowest, the attractiveness of higher vocational colleges comes out on top, followed by active enterprise participation, with government policy support ranking the lowest.

Government policy support has several sub-dimensions, also ranked from highest to lowest as follows: The most compelling aspect is the creation of platforms that encourage active collaboration between higher vocational colleges, government, industry, and enterprises. It is followed by innovative talent evaluation and fostering of a cooperative and creative social culture. The least practical aspect is the development of multi-dimensional "government-school-enterprise" collaborations and the constructing of parks and platforms for industry-education integration. In the context of the traditional "in-university-research" theory, the role of the government is often unclear. Two scenarios commonly occur: In the first, the government adopts a laissez-faire approach, allowing enterprises and schools to initiate cooperation independently, resulting in limited government involvement. This situation aligns with the concept presented by Zhang and Huang (2013, p.5), where the relationship between the three entities—government, enterprises, and schools—is relatively loose, and interactions are minimal. In the second scenario, the government takes an active role, directly intervening in "in-university-research" collaborations and assigning specific projects for enterprises and universities to complete. However, this approach often limits cooperation to designated projects, leaving other potential areas of collaboration unexplored and reducing overall motivation for broader cooperation.

The attractiveness of higher vocational colleges was at a high level. Consider the result of the study dimensions ranging from the highest to the lowest level as follows: the highest level was the integration of industry, and education has significantly improved the quality of students' employment, followed by the integration of industry. Education has dramatically improved students' innovation ability, and the integration of industry and education has significantly improved students' professional practical ability at the lowest level. The analysis of the questionnaire

data found that there is no significant difference in the understanding of the integration of industry and education among teachers with different titles, different ages, different educational backgrounds, different promotion paths, etc., that related to the concept of Sun (2021), there is a certain degree of consensus on the development of the integration of industry and education, and it is generally believed that the integration of industry and education has already been developed to a certain extent.

Active participation of enterprises was at a medium level. The study results showed that the dimensions of the integration of industry and education ranged from the highest to the lowest level. The highest level was the integration of industry and education that can be combined with the actual situation of industry and enterprises and is not limited to textbooks. The next level was promoting the construction of practice teaching bases and establishing a good talent training-supply and demand cooperation relationship. The lowest level was participation in enterprise-led scientific research competitions or innovation activities. These results align with Chen's (2018, p. 88) concept of promoting the integration of industry and education in the new stage and era. The opinions on deepening the integration of industry and education suggest that enterprises should be encouraged to participate in various aspects of college professional planning, textbook development, teaching design, curriculum setting, and practical training to promote integrating enterprise needs into talent training. This further deepens the function of enterprises in undertaking education.

For the discussion in Part 2: The guideline of industry-education integration under the "double-high plan" background in higher vocational colleges in Guizhou, China, as follows:

Under the "Double-High Plan" background, the study aims to develop guidelines for the integrated development of industrial teaching in higher vocational colleges under the "Double-High Plan" in Guizhou. These guidelines are based on three dimensions: policy dimension, higher vocational college dimension, and enterprise dimension. The study proposes 17 measures that integrate the "Triple Helix Theory" for the guideline of integration of production and education in Guizhou's higher vocational colleges and universities. The proposed measures include seven for the government dimension, five for the extent of higher vocational colleges and universities, and five for the size of the enterprises.

Government dimension:

- (1) Local governments to strengthen policy support, establish sound regulations, and incentives policy system policy.
- (2) Build a platform to encourage active docking between higher vocational colleges and government, industry, enterprises, etc.
- (3) Strengthening the construction of parks and building platforms and carriers for the integration of industry and education.
- (4) Innovative evaluation of talents and formation of a social culture of cooperation and innovation.
- (5) Establishing and improving the common and shared mechanism to promote the effective conversion of resources.
- (6) Promote the construction of an environment for the integration of industry and education through the development of "government-school-enterprise" multi-dimensional cooperation.
- (7) Appropriate decentralization and further promotion of the "release of services" reform in education.

Higher Education Institution Dimension:

- (1) Optimize the top-level design and formulate guidelines for the integration of industry and education in line with the institutions' strengths and characteristics.
- (2) Accelerating the reform of talent cultivation methods and promoting the integration of all elements of the main body of industry-education integration by optimizing the professional settings, curriculum system, teaching methods, and evaluation system.
- (3) Construct clusters of projects related to the integration of industry and education to form a cluster effect and give play to the advantages of collections.
- (4) Promote comparative research related to the integration of industry and education and construct a development guideline for the integration of industry and education with its characteristics and advantages.
- (5) In the process of teaching management, appropriately integrating the management concepts of enterprises.

Enterprise Dimension:

- (1) Give full play to its central role in technological innovation and incubation of scientific research results, and promote the deep integration of talents, knowledge, technology, and other innovation elements of universities into the industrial field continuously.
- (2) Actively promoting the joint creation of a model platform for innovative and complex high-level talents.
- (3) Assist higher vocational colleges and universities to do an excellent job in researching the demand for talents to provide a scientific basis for the setting, deletion, increase, and transformation of specialties.
- (4) Promote the construction of practice teaching bases and establish a good talent training-supply and demand cooperation relationship.
- (5) Active promotion of mixed ownership colleges.

In this research, the researcher reviewed the literature of Chen (2015, p.42-47), Chen (2018, p. 87-90), Jin and Luo (2023, p.144-149). According to the triple helix theory, the industry-education integration under the "double-high plan" involves government policy support, higher vocational college attractiveness, and active enterprise participation. This theory, as proposed by Wang (2018, p.46-53), is used to analyze and improve the institutional mechanisms of China's government, universities, and enterprises in scientific and technological innovation, social services, and other sectors to promote economic prosperity.

Part 3: The adaptability and feasibility of the guideline of industry-education integration under the background of the "double-high plan" in higher vocational colleges in Guizhou, China.

The evaluation guideline for the development of the integration of industry and education in Guizhou's higher vocational colleges and universities, with values between 4.00 and 5.00, is at the highest level of adaptability and feasibility in the three dimensions of policy dimension, higher vocational colleges and universities dimension and enterprise dimension, which indicates that the guideline for the development of the integration of industry and education in Guizhou's higher vocational colleges and universities has adaptability and feasibility.

The highest is establishing and improving the standard and shared mechanism to promote the effective conversion of resources. In this kind of cooperation game, the relationship between schools and enterprises will be very close, and both sides will maximize their interests without damaging the other, pushing school-enterprise cooperation to a deeper level, establishing a relationship of shared interests, and truly realizing the "teaching-research-development" trinity. The university-enterprise association will be made to a deeper level to develop a benefit-sharing relationship and truly learn "teaching, research, and development." related to the concept of Kuang (2021, p.115-119).

In evaluating the adaptability and feasibility of the dimensions of higher vocational school, the highest level is accelerating the reform of talent cultivation methods and promoting the integration of all main body elements. It is because colleges and universities should play a key role in effectively organizing and linking up all kinds of nodes in the collaborative cultivation system, stimulating and integrating the inflow and input of all sorts of advantageous resources, giving full play to the resource advantages of the main body of cultivation, and releasing the vitality of the relevant elements, to form a sound and continuous operation and development of the cultivation system, and to realize the maximization of the interests of the collaborating parties that related to the concept of Chen (2015, p.42-47).

In evaluating the adaptability and feasibility of the enterprise dimension, the highest level is to promote the construction of practice teaching bases and establish a good talent training supply and demand cooperation. This is because, in the "government-industry-university" triple helix innovation resources convergence, the helix participating subjects not only play their advantages and functions but also break their boundary barriers and integrate into the triple helix resource innovation system that related to the concept of Chen and Li (2018, p. 87-89). The active role of enterprises in promoting the integration of industry and education is crucial. They should become educators in various forms.

5. Recommendation

Taking Guizhou's higher vocational colleges and universities as the object, this study investigates the status quo, influencing factors, and evaluation system of the integration of industry and education to provide an essential theoretical basis for constructing the guideline for the integration of industry and education and deepening the integration of industry and education. Although scientific rigor is achieved as much as possible in normative and empirical research, some contents still need to be improved in future research. The recommendation should follow four aspects:

5.1 Extended Sample Group

The study is specific to Guizhou province, and the findings might not apply to other regions with different economic, social, or educational contexts. The uniqueness of Guizhou's circumstances could limit the generalizability of the results. In future research, it is recommended to expand the sample group, expand the sample range to the whole country or the world, and grasp the current situation, problems, and development trend of integrating industry and education more comprehensively.

5.2 Optimize Data Measurement Methods

The study will be primarily based on questionnaire data and structured interviews. These measures can be influenced by personal biases, memory recall issues, and the participants' understanding of the questions, potentially leading to inaccurate or inconsistent responses. Future research could strengthen the findings using multiple data collection methods (triangulation) to ensure a more comprehensive and robust understanding of the topic.

5.3 Improve the Capacity of International Leadership and Social Services

To promote the improvement of social service capacity with an international and global perspective. Higher vocational colleges and universities should actively respond to the national policy of serving the country's "Belt and Road" initiative and promote China's vocational education through internationalization of vocational education with the help of preferential policies and mechanisms; promote the revitalization of vocational education in the countryside, and strengthen the reform and promotion of the school's talent cultivation, social service, and technology research and development capabilities. It will also further promote rural revitalization of vocational education, strengthen the reform and promotion of talent cultivation, social service, and technology research and development, and dynamically adjust the problems in government-industry cooperation promptly to realize the benign operation of the government, schools, and enterprises.

5.4 Strengthen the Depth of Research

Follow the "Triple Helix Theory" to build the system of industry-education integration in higher vocational colleges. Integrating industry and education in higher vocational colleges and universities is complex, including the government, higher vocational colleges and universities, enterprises, etc. According to the "Triple Helix Theory," the three dimensions of government, school, and enterprise are interpenetrating and inter-integrating. In the system of integration of industry and education in higher vocational colleges and universities, the government is responsible for overall planning, organization and guidance, service guarantee, assessment, and supervision, etc., schools are accountable for talent training, scientific research, social services, etc., and enterprises as the main body of school running, training and innovation, etc., to realize the balanced roles and processes between the subjects, and between the issues and their environments.

6. Future Research

- (1) Comparing the implementation and outcomes of the "Double High Plan" in Guizhou with those in other Chinese provinces. The aim would be to identify best practices and challenges that could inform future policy decisions in Guizhou and elsewhere.
- (2) Focusing on assessing the long-term impacts of the "Double High Plan" in Guizhou, particularly in production, education, and research. The study would involve collecting data over an extended period to evaluate the sustainability and effectiveness of the plan.
- (3) Exploring how the "Double High Plan" has impacted specific sectors such as technology, agriculture, or manufacturing in Guizhou. The aim would be to provide a nuanced understanding of the plan's effectiveness across different industries.
- (4) Exploring the social and cultural impacts of the "Double High Plan" in Guizhou, such as changes in community engagement, educational attainment, or cultural preservation. This would provide a more holistic view of the plan's impact beyond economic and academic metrics.

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