

Research on the Differentiated Financial Allocation Mechanism in the Practice of Integration of Vocational Education and General Education: Taking Zhejiang, Shandong, and Guizhou Provinces as Examples

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Abstract. As a key measure to broaden the channels for students to become talents and boost the development of new quality productivity, integration of vocational education and general education (IVEGE) has attracted much attention under the background of deepening the strategy of strengthening the country through education. However, the existing research focuses on system design and lacks a comparative analysis of the provincial financial allocation mechanism. Taking Zhejiang Province, Shandong Province and Guizhou Province as cases, this paper analyzes the current situation and causes of the implementation of the financial differentiated allocation mechanism in the senior high school IVEGE. This study found that the three provinces showed differences in central transfer payment, per student funding, and budget structure, which were rooted in the gradient differences of external economic foundation, industrial structure, and education demand, as well as the internal policy objectives, tools, and characteristics. Based on this, this paper puts forward suggestions that the central government should improve the unified system framework and the local government should promote it according to the gradient of the western, central and eastern regions, so as to provide reference for the high-quality development of IVEGE.

Keywords: Integration of Vocational Education and General Education, Financial Allocation Mechanism, Provincial Comparison, High School Education.

1. Introduction

Integration of vocational education and general education (IVEGE) refers to the mutual integration between the two types of Education: general and vocational. In recent years, the policy trend has been to take IVEGE as the core, broaden the growth path for students, and promote the integration of secondary vocational education and general high school education. The policy also clearly points out that technical and skilled talents are the training direction and target group of vocational education, and also the key force to promote the deep combination of scientific and technological innovation and industrial innovation. From this perspective, vocational education has irreplaceable value in helping the development of new productivity [1]. Against the background of the comprehensive deepening of the strategy for strengthening the country through education, IVEGE has changed from a policy concept to a priority direction of national education reform. Its core contradiction is in the transition period from system design to resource adaptation. Therefore, the financial allocation mechanism has become the key hub to test its pilot effect.

At present, the existing research results on all aspects of IVEGE are fruitful. Conceptually, IVEGE is not just a superficial "integration", but an equal development under the premise of respecting the different personalities of the two types of education [2]. Institutionally, the government should improve its supporting mechanism of vocational education college entrance examination and improve the circulation of vocational education college entrance examination results by relying on IVEGE, to ensure the steady progress of the construction of the vocational education college entrance examination system and help the high-quality development of modern vocational education [3].

This study intends to supplement the interpretation of integration of vocational education and general education from the perspective of education finance, bring education finance into the research framework of IVEGE, and deeply understand the promotion mechanism and constraints of IVEGE

from the low-level logic level of capital investment and resource allocation. At the same time, it draws mutual learning experience by comparing the provincial pilot situation, so as to get rid of the limitations of single regional research.

This study focuses on the government financial allocation mechanism in the pilot of IVEGE in senior high school. According to the representativeness of the economic gradient and the typicality of the policy pilot, this paper selects the "Eastern innovation pilot" in Zhejiang Province, the "industry education integration pilot" in Shandong Province, and the "Rural Revitalization pilot" in Guizhou Province as representative cases, systematically compares and analyzes the significant differences in the financial allocation mechanism of in-service general finance in the three provinces, and explores the influencing factors behind it in combination with the theory of educational economics, and puts forward targeted and operable countermeasures and suggestions for the policy formulation of vocational general finance, to promote the high-quality improvement of vocational general finance.

2. Implementation Status and Differences

This paper selects Zhejiang, Shandong and Guizhou provinces as the analysis samples, because they just cover the development gradient of the eastern developed region, the central populous province, and the western underdeveloped region. In addition, the budget strategies for general vocational education in the three provinces correspond to typical scenarios such as market-driven, resource balance adjustment, and phased policy development, respectively, which can clearly show the logic of the adaptation of educational resources to regional needs.

2.1. Central Transfer Payment: Hierarchical and Accurate Capital Allocation Logic

Through the funds of the quality improvement plan of modern vocational education, the central government provides differentiated support to Zhejiang, Shandong and Guizhou according to the needs of regional IVEGE, reflecting the precise support logic of the central government.

From 2021 to 2023, the special funds obtained by Zhejiang Province increased from 796.2 million yuan to 894.5 million yuan. Due to the active economy in the East and the leading innovation in the integration of vocational education and general education, capital growth is recognized as its path, helping to build a flexible connection system and transport industrial talents. The capital of Shandong Province reached 1304.5 million yuan in 2022, and increased to 1317.1 million yuan in 2023. Combined with the pilot situation in the past three years, 76000 students in secondary vocational schools across the province have exceeded the line of ordinary high schools, and 43000 students have transferred to vocational schools. The stable trend of capital growth reflects that after the completion of the phased task of improving the recognition of vocational education, the capital will be adjusted to normality and adapt to the pace of local promotion. The capital of Guizhou Province increased from 1018.5 million yuan to 1137.8 million yuan, with a high initial base. Due to the underdevelopment of the western region, it needs to make up for the shortcomings of the foundation, and it is highly dependent on the central transfer payment. The special fund has laid a solid foundation for the coordination of Vocational and general education.

The central government allocates funds according to the development stages, positioning, and needs of Vocational Education in the three provinces: supporting Zhejiang's innovation, adapting to the tasks of Shandong, ensuring the basic promotion of Guizhou, building a hierarchical and accurate system, and promoting the coordinated development of national vocational and general education.

2.2. Per Student Funding: The Funding Mapping of the Regional Education Strategy

The per student funding reflects the differences in the allocation of educational resources among the three provinces, and is essentially the funding mapping of regional education strategies.

From 2021 to 2023, the average expenditure for students in Zhejiang general higher education increased from 34135.55 yuan to 37076.35 yuan, and that in secondary vocational education reached 29244.92 yuan in 2022, and then decreased slightly to 28937.02 yuan in 2023. The gap in the

expenditure for general higher education was stable, and the idea of "synergy and balance" was practiced to build a solid ecological foundation for modern education. In 2023, the average secondary vocational school students in Shandong Province was 20482.04 yuan, exceeding the general high school by 19971.89 yuan for the first time, breaking the "general high fever" with funding guidance, increasing the investment in practical training and double qualified teachers, serving the demand for skilled talents in the manufacturing industry, and leveraging the balance between supply and demand of industrial talents. The fund for Guizhou general education and higher education increased from 15359.99 yuan to 15738.32 yuan, and the secondary vocational education jumped from 8579.17 yuan to 10661.27 yuan in 2023. The fund was used to make up for the shortcomings of secondary vocational education, improve the school's running conditions, and help it shift from "resource depression" to "development position".

The three provinces have anchored "general vocational cooperation", "skills priority", and "secondary vocational supplement" respectively, and the central and local governments have implemented precise policies to make the per student funding become the baton to promote the high-quality development of general vocational education and adapt to the national talent strategy.

2.3. Budget Structure: Dynamic Adaptation of Education to Regional Needs

The budget structure is a dynamic fit between education and regional needs, highlighting different strategic priorities.

As shown in Table 1, the expenditure of secondary vocational schools in Zhejiang has been at a high level for a long time, reaching 423.17 million yuan in 2021, increasing to 447.81 million yuan in 2022, and further increasing to 469.88 million yuan in 2023, and far exceeding the expenditure of ordinary high schools every year. Because the Zhejiang provincial government, based on the market orientation, tilts resources to support the integration of production and education, and promotes the mutual recognition of general vocational courses and credit conversion, it takes secondary vocational education as the dual support for the development of industrial talents and students.

The expenditure of ordinary high schools in Shandong continues to be higher than that of secondary vocational schools, and there is a trend of increasing investment in general high schools and secondary vocational schools, and gradually decreasing. Due to the rigorous pursuit of the degree of general education and higher education, the government should first ensure the universality and fairness of general education and higher education, then reduce the inefficient expenditure of secondary vocational education, concentrate resources on high-quality secondary vocational education and characteristic specialties, and solve the imbalance with a gradual strategy.

Guizhou's budget is phased: secondary vocational education is relatively high from 2021 to 2022, and will fall back to 415.44 million yuan in 2023; The expenditure of universal high-tech industry increased from 76.98 million yuan in 2021 to 102.7 million yuan in 2023. Combined with its actual situation, Guizhou Province initially relied on the central transfer payment to supplement the shortage of secondary vocational schools to serve the rural revitalization, and then focused on the "characteristic specialty and employment" of secondary vocational schools to meet the needs of Rural Revitalization.

The essence of the three provincial budgets is the dynamic adaptation of education and regional needs, which not only responds to the actual needs but also provides resource allocation samples for provinces at different stages of development.

Table 1. Expenditure structure in Zhejiang, Shandong, and Guizhou Provinces.

Province/ Unit: 10000 yuan	2021 (Ordinary high school/Secondary vocational school)	2022 (Ordinary high school/Secondary vocational school)	2023 (Ordinary high school/Secondary vocational school)
Zhejiang	4520/42317	4648/44781	6822/46988
Shandong	28610/26458	32961/20023	34391/19251
Guizhou	7698/59179	8161/69557	10270/41544

3. Analysis of the Causes of the Differentiated Development of the Three Provinces

3.1. External Factors: Objective Environmental Requirements Create Differences

3.1.1 Economic basis: the difference in resource supply dominated by fiscal decentralization

According to the average data of the past three years, Zhejiang's per capita GDP is 118857 yuan, and the general public budget income is 830.1 billion yuan. Zhejiang's strength provides support for vocational education innovation; Shandong has a per capita GDP of 86167 yuan and a budget of 728.445 billion yuan, and a large manufacturing province can provide financial support; With a per capita GDP of 5243367 yuan and a budget of 1978.06 billion yuan, Guizhou has a weak foundation and relies on central transfer payments, focusing on education equity and Rural Revitalization. Local governments have a deeper understanding of fiscal decentralization than the central government, and fiscal decentralization is more reasonable, maximizing the benefits of fiscal expenditure in practice [4].

Zhejiang and Shandong have formed a financial investment mode of 'local leading and central incentive' by virtue of their strong local financial autonomy, which provides independent decision-making power and financial flexibility for vocational education innovation and system construction; Meanwhile, due to the limited financial capacity of local governments, Guizhou has the decentralized characteristics of 'central government supporting local governments', and the central transfer payment has become the core support to fill the resource gap of secondary vocational schools.

3.1.2 Industrial structure: human capital demand adapts to Industrial Synergy orientation

Zhejiang's tertiary industry accounted for 54.97%, and the service industry was highly developed. The Internet industry gave birth to the demand for compound talents and promoted deep integration. The second industry accounts for 39.67% of the total in Shandong Province. The upgrading of the manufacturing industry needs technical personnel, which has given birth to the "3+2" and "3+4" connection mode. Guizhou's primary industry accounted for 13.97%. The demand for Rural Revitalization made the policy focus on rural skills training and the development of "field class". The theory of human capital has been widely accepted at present, and its core view is that education, training, and other types of learning are investments that can bring returns for the future [5].

In response to the demand for interdisciplinary talents in the Internet industry, Zhejiang has tilted its funds towards the integration of 'industry education community' and cross school courses, realizing the docking of educational capital and industrial capital; Shandong focuses on the shortage of technical talents for the upgrading of the manufacturing industry, and strengthens the accumulation of skilled human capital through the funding guarantee of 'vocational education college entrance examination' and the construction of training bases; Guizhou, centering on the demand for practical talents for rural revitalization, used funds for 'Vocational and general exchange classes' and intangible cultural heritage skills courses to activate the potential of human capital in rural areas.

3.1.3 Educational demand: gradient characteristics determine resource matching logic

Based on the analysis of the population structure of the three provinces at the education stage, this study found that the education needs of the three provinces showed gradient characteristics: The proportion of high school students in Zhejiang in 2021-2023 was 0.16, 0.15, 0.15, and the high base was conducive to regional pilot exploration; Shandong has an average proportion of 0.15 and a large base, so it needs to solve the "general high fever" through the vocational education college entrance examination. The average proportion of Guizhou is 0.11, which needs to take into account the promotion of popularization and the cultivation of rural talents, and expand the coverage of policies.

The key difference of financial investment among the three provinces is the response to the features of educational population: Base of general school education in Zhejiang is stable, and the funds can be tilted to 'full school penetration' and regional pilot projects to meet the segmentation needs of diversified talents; Facing the huge base of high school education and the pressure of "universal high

school fever", Shandong gives priority to the funding for the equity guarantee of universal high school and the broadening of the channels of vocational education college entrance examination, to amend the imbalance between supply and demand. The base number of high school education in Guizhou is relatively low, and the funds first focus on the "bottom line enrollment" and then turn to the "characteristic specialty", taking into account the popularity and pertinence.

3.2. Internal Factors: Differences in the Decision of Different Provincial Policy Implementation Logics

3.2.1 Differences in policy objectives

Zhejiang supports the modern education system with high financial investment, Shandong widens the talent channel with a scale advantage, and Guizhou serves rural revitalization with coordinated development. The policy objectives of the three provinces' differentiation are exactly the core driving factors of the above hierarchical allocation of central transfer payments, the difference in per student funding guidance, and the dynamic adjustment of budget structure.

Based on high financial investment, Zhejiang takes "building a modern vocational education system" as the core goal, and breaks the academic barrier through the quantitative index of "80% of secondary vocational students receive higher education"; Facing the shortage of skilled talents caused by the "general high fever", Shandong Province aims to build a talent ladder of "vertical connection and horizontal integration", and break down the barriers of academic discrimination through the "3+2" and "3+4" connection modes; In view of the weak educational resources in Guizhou Province, the synergetic development of the two education serves the goal of Rural Revitalization. Relying on the "double improvement" project, learners can simultaneously improve their cultural literacy and practical skills, so as to consolidate the achievements of poverty alleviation and enhance the service ability of Rural Revitalization.

It is precisely because of the different goals that the financial allocation pattern of Zhejiang, focusing on innovation investment, Shandong, focusing on the guarantee of access to higher education, and Guizhou, relying on transfer payment to make up for the weak points, has been formed, and finally, the practice of IVEGE has shown the characteristics of differentiation that adapt to their respective provincial conditions. However, the three provinces have widened their growth paths by breaking down barriers and accurately docking regional needs, which also reflects the integration policy and the adaptability of local implementation.

3.2.2 Differences in policy instruments

Zhejiang focuses on market and innovation tools, Shandong focuses on system and quality tools, and Guizhou relies on cooperation and basic tools. The differences in the choice of policy tools are due to the differences in the industrial foundation and education development stages of each province, and the different tools further lead to the differences in the investment direction, source structure, and use mode of financial allocation, and ultimately shape the diversified forms of financial support for Vocational and general education.

Zhejiang Province activates the synergy efficiency of the system and resources with "market orientation". In the pilot area, the vocational and general accommodation classes and the general and high schools recruit students simultaneously, and establish a mechanism of mutual recognition of credits and mutual transfer of student status; Shandong province takes the college entrance examination as the hub, implements the "cultural quality and vocational skills" examination mode, and forces the coordination of Vocational and general courses; Guizhou Province, on the premise of "teaching reform", connects rural needs with East-West cooperation, and cooperates with high-quality universities in the east to develop integrated courses. At the same time, it promotes the integration of intangible cultural heritage skills into the curriculum system, which not only ensures the equity of rural education but also realizes the organic combination of cultural inheritance and skill training.

It is precisely because of the use of different policy tools based on different provincial conditions that the pilot results of Vocational and general education integration in the three provinces are different but equally good.

3.2.3 Differences in policy characteristics

The differences in policy characteristics of Zhejiang's stepped accommodation, Shandong's institutional guarantee, and Guizhou's adaptive mechanism stem from the differences in the core provincial conditions of each province. This difference in policy characteristics is the key supplementary factor driving the hierarchical allocation of central transfer payments, the differentiation of per student funding orientation, and the dynamic adjustment of the budget structure.

With the core label of "early penetration, two-way mobility and regional trial", Zhejiang Province provides practice samples for policy optimization by relying on the flexible enrollment mechanism and following the path of pilot and promotion; Shandong province takes "deep integration, fine standards and strong incentives" as the key point, realizes resource integration through mixed ownership school running, and uses vocational education college entrance examination to plan general vocational courses; Guizhou Province is characterized by "strict norms, strong characteristics and wide coverage", implements the control of student status conversion, focuses on the inheritance of national culture, and expands the coverage of vocational enlightenment education in rural areas.

The provinces adopt differentiated characteristic policies, which ultimately make the financial allocation mechanism of IVEGE in the three provinces present the differentiated characteristics of precise adaptation to the needs of regional development.

4. Discussion

4.1. The Necessity and Importance of Further Promoting the Reform of IVEGE

The constantly changing professional environment requires educational innovation, so as to help students prepare for new challenges [6]. Meanwhile, the new quality productivity will reshape skilled talents. It is necessary to reconstruct China's education system with the help of IVEGE to meet the development needs of the new quality productivity. At the same time, the core problem of the structural mismatch of talents in China is the mismatch of the supply structure of educational talents, the excessive supply of general education, and the insufficient supply of vocational education. The reform of the Vocational and general education integration system is the pre-measure to solve the problem of human resource structure [7].

4.2. Overall Suggestions Based on the Analysis of the Pilot Situation in Three Provinces

In the future, IVEGE needs to build a three-level practice mode of national gradient promotion, and strengthen the targeting and sustainability of capital use on the basis of differentiated allocation.

At the local level, the eastern region government emphasizes the role of market and finance, relies on strong economic foundation and financial capacity, uses market mechanism to activate the synergy between industry and education. The central region government needs to open up the access to higher education with the vocational education college entrance examination as the core, deepen the integration of production and education and resource integration through policy incentives, resolve the structural contradiction of large-scale education but shortage of skilled talents, improve the qualification certificate framework [8]. The government of the western region uses the central transfer payment to strengthen the foundation of secondary vocational schools, explore local characteristic resources to promote the coordinated promotion of accommodation practice, Rural Revitalization and cultural inheritance, gradually build a curriculum system of comprehensive integration, clarify the level differences between comprehensive high schools, and allocate vocational and general accommodation courses according to different school management quality [9].

At the central level, the acceleration of technological change and industrial upgrading has prompted skilled talents to shift from "instrumental professionals" to "problem-solving and

innovative generalists" [10]. The central government should strengthen the national unified system of full-time education, such as the college entrance examination and mutual recognition of credits, and further build a modern education system of "vertical connection and horizontal integration", to ensure that the reform integrated with the two education is built into an education system with Chinese characteristics and meeting the needs of Chinese modernization [11]. Regional barriers and social cognitive biases will be broken down, providing sustainable mechanisms to support differentiation, adaptability, and replicability for the construction of an educational power and the cultivation of skilled talents, and continuously enabling new quality productivity.

5. Conclusion

The practice of general vocational accommodation in Zhejiang, Shandong, and Guizhou provinces shows that the financial allocation mechanism is the core tool to support local pilot projects, and its design needs to be deeply adapted to the provincial economic foundation, industrial structure, and educational needs. The economically developed Zhejiang Province relies on market-oriented resource integration to promote two-way accommodation. Shandong Province, a major education province, solves structural contradictions through vocational education college entrance examination and funding preference. The less developed western Guizhou Province relies on central transfer payment and balanced investment to ensure equity and rural demand. Although the three provinces have different paths, they all promote the general vocational education from formal cohesion to connotative integration through differentiated policy tools, which verifies that adjusting measures to local conditions is the key principle for the implementation of general vocational integration.

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