

Research on Enhancing Human Resource Development in Ethnic Regions through Vocational Education

Shaoru Shi, Fei Liu*

Chizhou University, Chizhou 247000, Anhui, China

**Author to whom correspondence should be addressed.*

Copyright: © 2025 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: Vocational education is an important means of enhancing human resources in ethnic regions. In terms of strengthening professional skills, it can lay a solid foundation for career development; In terms of stimulating innovative thinking, it can broaden career promotion opportunities; In terms of enhancing inheritance ability, it can enrich the connotation of knowledge value; In promoting the advancement of quality, educators can inject vitality into human resource growth. At present, there is a low degree of integration between industry and education in empowering human resources in ethnic regions through vocational education, and the collaborative mechanism needs to be improved; The mismatch between supply and demand in professional settings and the lack of dynamic adjustment mechanisms; The structure of the teaching staff is inadequate, and their practical teaching ability is weak; Imbalance in resource allocation mechanism and low level of social recognition. By deepening the institutional reform of the integration of industry and education, optimizing the cultivation system of human resources, strengthening the construction of teachers and basic abilities, improving institutional guarantees and social recognition, the study aims to promote the sustained empowerment of vocational education to enhance human resources in ethnic regions.

Keywords: Vocational education; Human resources; Ethnic regions; Non-cognitive skills

Online publication: November 14, 2025

1. Research background

In the new journey towards a powerful socialist modern country, the high-quality development of ethnic areas is becoming more and more important. It is not only the key link to realize the common prosperity of all people, but also an important path to consolidate and strengthen the consciousness of the Chinese ethnic community. Among the many elements of regional development, human resources are the core element, and their quantity accumulation and quality improvement largely depend on the effective support of the education system. Vocational education, in particular, plays a unique and key role in improving the level of regional human resources because it

can closely meet the needs of the industry and pay attention to the cultivation of practical skills. The president of CPC clearly pointed out that people should “promote the high-quality development of the party’s ethnic work in the new era with the main line of building a strong sense of the Chinese ethnic community”, and the improvement of human resources is the key link to achieve high-quality development and building a strong sense of community in ethnic areas ^[1]. In ethnic areas, the special value of vocational education is more reflected in the dual dimensions of cultural inheritance and economic development. Vocational education is an important cornerstone to cultivate technical and skilled talents to meet the needs of industries such as characteristic agriculture, cultural and tourism integration, and green energy in ethnic regions, promote employment, entrepreneurship and innovation, and promote the manufacturing and services in China to a higher level, which points out a clear direction for the reform and development of Vocational Education in ethnic regions, and provides feasible solutions and key paths to break through the bottleneck of human resources in ethnic regions.

From the three dimensions of practical role, practical constraints, and optimization strategies, this paper explores the specific content and important value of vocational education in accurately improving human resources in ethnic areas, aiming to provide solid theoretical support for the sustainable development of ethnic areas, and explore practical ways to help ethnic areas achieve high-quality development in the new era.

2. The practical role of vocational education in empowering the improvement of human resources in ethnic regions

2.1. Beneficial for strengthening professional skills and laying a solid foundation for career development

The core driving force for the development of ethnic regional economy lies in the cultivation of characteristic industries, covering diverse fields such as cultural tourism integration, inheritance of traditional ethnic crafts, and modern agricultural innovation. The vocational education system aims to enhance the core professional skills of practitioners by accurately matching the development needs of industries and constructing a talent training model that deeply integrates professional settings with the industrial chain. Vocational education has multiple attributes, such as vocational, social, and educational attributes. It is guided by employment, focuses on the cultivation and improvement of practical skills, and meets the demand for high-skilled talents in economic transformation and industrial upgrading. This education model significantly improves the quality of regional human resources and promotes the transformation and upgrading of the traditional handicraft industry from family workshop production to brand and market-oriented operation. Vocational education, through the talent cultivation path of “skill-based”, not only provides stable sources of economic income for practitioners, but also helps them build sustainable core competitiveness for career development through systematic skill training and practical accumulation, effectively breaking the development dilemma of “low skill low income.” This collaborative development model of education and industry provides important support for optimizing and upgrading the industrial structure and cultivating a high-quality technical talent team in ethnic areas.

2.2. Beneficial for stimulating innovative thinking and expanding career advancement opportunities

The core value of vocational education, in addition to imparting professional skills, focuses more on the systematic cultivation of innovative abilities. In ethnic regions, vocational colleges are actively exploring diverse teaching models, leading students to deeply explore ethnic cultural resources through the establishment of

project-based learning frameworks, the creation of innovative and entrepreneurial practice carriers, and other paths. They integrate traditional artistic elements with modern technological means to explore innovative and entrepreneurial practices. This educational model that integrates skill development with innovative practice has effectively promoted the role transformation of practitioners, gradually transforming them from traditional technical practitioners to active promoters of industrial innovation and development. The cultivation of innovative thinking not only opens up new paths for personal career development but also provides important support for the transformation and upgrading of characteristic industries in ethnic regions. It promotes the transformation of industrial development models from labor-intensive to technological innovation-oriented, and is conducive to forming a virtuous development cycle of “talent-driven innovation, innovation-led industrial upgrading, and industrial upgrading-driven employment growth.”

2.3. Beneficial for enhancing inheritance ability and enriching the connotation of knowledge value

Ethnic regions contain rich intangible cultural heritage resources and a traditional knowledge system. In this context, vocational education has become the key medium to promote cultural inheritance and innovation. With the help of modern apprenticeship education mechanisms, intangible cultural heritage special training classes, and other innovative models, vocational colleges have modernized the traditional skills taught orally and heart from generation to generation, built a systematic and complete curriculum system, and committed to cultivating professionals with a sense of cultural heritage mission and modern communication literacy. The education mode of “paying equal attention to cultural inheritance and skill training” endows human resources with dual value attributes: it not only improves their economic production capacity, but also strengthens their cultural inheritance mission, achieving the deep integration of “people, skills, and culture.” This integration not only enhances the cultural endogenous driving force for the development of ethnic regions, but also injects solid cultural confidence into regional sustainable development, which is conducive to the formation of a benign pattern of cultural inheritance and economic development ^[2].

2.4. Beneficial for promoting quality advancement and injecting vitality into human resource growth

Vocational education adheres to the educational philosophy of “synergistic promotion of moral character shaping and skill cultivation, deep integration of theoretical teaching and practical operation.” Through a systematic, practical teaching system, it focuses on cultivating students’ craftsmanship spirit, collaborative ability, and environmental adaptability. The comprehensive improvement of these qualities and non-cognitive abilities constitutes the core driving factors for the growth of human resource value. This talent cultivation model that emphasizes the cultivation of comprehensive literacy effectively promotes the transformation of labor force in ethnic areas from single skilled to compound management talents, effectively meets the urgent demand for high-quality technical and skilled talents in the process of industrial upgrading, and can more quickly adapt to the requirements of emerging industry positions, providing flexible and efficient human resource guarantees for regional economic structural adjustment and transformation and upgrading.

3. The practical constraints of vocational education empowering the improvement of human resources in ethnic regions

3.1. The degree of integration between industry and education is relatively low, and the collaborative mechanism needs to be improved

The integration of industry and education is essentially a deep coupling process of the education chain, talent chain, and industry chain, and an important way to cultivate high-quality talents and promote high-quality economic development ^[3]. At this stage, the vocational education field in ethnic areas shows an unbalanced development trend of active promotion of colleges and insufficient participation of enterprises. School enterprise cooperation is mostly limited to superficial forms of cooperation, such as the listing of practice bases, and has not yet established a deep-seated and sustainable collaborative education mechanism ^[4]. From the perspective of enterprises, the enthusiasm to participate in the training of talents in vocational education is generally not high, and the main concern is that it is difficult to form positive benefits from the input and output. Especially in the characteristic industries in ethnic regions, a large number of small and medium-sized enterprises are unable to bear the financial pressure of school enterprise joint technology research and development, curriculum system co-construction, and other aspects due to their limited ability to resist risks. From the perspective of textbook construction, the joint participation of teachers and enterprise personnel in textbook compilation is not high. At present, some teachers lack practical experience, and the enthusiasm of enterprise personnel to participate in the compilation of textbooks is not high, which leads to the low quality of textbook compilation. From the perspective of teaching reform, the practice teaching content is not closely connected with the real work process and the learning content of professional theory courses, which leads to the disconnection between students' practical ability and theoretical knowledge and production practice, and can not really improve students' application ability. At the same time, the practice teaching lacks a scientific and fair teaching evaluation system, and the evaluation subject is mainly teachers, lacking the joint participation of diversified evaluation subjects such as students, industry experts, and enterprise employers ^[5]. In the dimension of policy support for the integration of industry and education, due to the lack of a systematic collaborative platform architecture, the incentive policies such as tax incentives and project support for enterprises to participate in vocational education are still in a state to be improved, resulting in a significant gap between the talent cultivation path of vocational colleges and the real needs of enterprises. From the perspective of theoretical logic, the key to the success of Germany's "dual system" model lies in the vocational education governance structure built under the guidance of guilds, while the industry associations in China's ethnic regions are underdeveloped, making it difficult to play the role of "intermediary coordination." The "principal-agent" theory in institutional economics shows that when the information between the government and enterprises is asymmetric, it is easy to produce "adverse selection" — enterprises tend to choose cooperation projects with high short-term returns rather than long-term skilled talents cultivation.

3.2. The supply and demand of specialty settings are misplaced, and the dynamic adjustment mechanism is lacking

There are significant structural contradictions in the professional layout of Vocational Colleges in ethnic areas, which are mainly manifested in the coexistence of blind follow-up of professional setting and lagging dynamic adjustment, and it is difficult to effectively match the transformation needs of the regional industrial structure. Specialty setting is the "converter" of vocational education, connecting industrial demand, and its scientificity directly affects the supply structure of human resources in ethnic areas. The "cobweb theory" in education economics reveals that when the adjustment of education supply lags behind the market demand, it is easy to form

“weekly fluctuations.” The essence of the lag of specialty setting in ethnic areas is the lack of an “early warning mechanism of industrial demand.” From the perspective of specialty construction, there are obvious deficiencies in the development and utilization of local cultural resources in Vocational Education in ethnic areas, the lack of clear planning of specialty setting in vocational colleges, and serious homogenization. Some schools excessively pursue low-cost and popular majors at present. The specialties offered by some schools cover many disciplines, which are too scattered and not focused enough. In some schools, the repetition rate of specialty setting and ordinary undergraduate courses is high, and the construction of brand specialty and characteristic specialty still needs to be strengthened^[5]. Many characteristic specialties with market development potential, such as Intangible Cultural Heritage Inheritance and ethnic medicine, are gradually marginalized in the professional system due to the realistic factors of small enrollment scale and high school running costs. This situation eventually forms a double dilemma of “lack of professional talent support in characteristic industries, and traditional majors are divorced from the actual needs of the industry”, which seriously restricts the effectiveness of vocational education in improving human resources in ethnic areas^[6]. At the same time, vocational education is indeed facing a complex resource integration dilemma due to the existence of a more complex structural system and practical mode than other types of education, which also seriously weakens the adaptability of vocational education. For a long time, although vocational education as an independent type of education has become a part of China’s education system, its connection with other types of education is loose^[7].

3.3. The structure of the teaching staff is poor, and the practical teaching ability is weak

The construction of vocational education teaching staff in ethnic minority areas is facing structural contradictions, which is highlighted by the dual dilemma of insufficient supply of “double qualified” teachers and a lack of practical teaching ability. “Double-qualified” teachers are the core carriers of vocational education practice teaching, and their quantity and quality directly determine the effectiveness of human resources cultivation^[8]. In terms of talent introduction and education mechanism, restricted by geographical location, economic development level, and other factors, the school running conditions of various vocational colleges are quite different, especially the private colleges lack financial support, and the main source of school running funds is tuition fees, with a single source of funds. Due to the lack of funds for running schools, there are obvious shortcomings in teachers, infrastructure, and daily teaching of private schools, and it is difficult for ethnic areas to attract and retain high-level, skilled talents^[5]. Under the pressure of teachers, some vocational colleges have to rely on part-time teachers to supplement their teaching force. However, due to the lack of a perfect management system for part-time teachers, the teaching quality and sustainability are difficult to effectively guarantee. At present, 35% of vocational colleges have less than 50% of “double qualified” teachers, and the lowest is only 25.96%. It can be seen that the number of “double qualified” teachers in vocational colleges is seriously insufficient, and the structure of teachers is still unreasonable, which cannot meet the needs of high-quality talent training. At the same time, the vocational undergraduate education has just started. There is a lack of reference standards in teacher training, a stable “double qualified” teacher training base, and the pertinence and effectiveness of the training are not strong^[5]. The effectiveness of vocational education in ethnic areas to improve the level of human resources is seriously constrained by the imbalance in the teacher structure.

3.4. Unbalanced resource allocation mechanism and low social recognition

The fairness of resource allocation and social cognitive bias are the deep contradictions restricting the development

of vocational education in ethnic areas. The imbalance in the allocation of vocational education resources in ethnic minority areas has existed for a long time, showing significant hierarchical distribution characteristics. There are “triple gaps” in resource allocation: first, there is a significant gap between urban and rural areas. High-quality education resources are mostly concentrated in a few key colleges, while grass-roots vocational schools are generally faced with development bottlenecks such as outdated infrastructure, a lack of teaching equipment, and a lack of digital education resources. Second, due to the hierarchical differentiation of colleges and universities, it is difficult for grass-roots colleges and universities to attract high-quality students. Third, regional resource mismatch. At the same time, the traditional concept of “academic qualifications first” and institutional barriers form double shackles. At the same time, China still lacks a scientific and systematic training mechanism for technical and skilled talents. China’s existing vocational education discipline starts late and has a weak foundation, and its theoretical research lags behind the practical application. In particular, the technical-oriented vocational education specialty also adheres to the humanities-oriented pedagogy, which narrows the growth channel for technical and skilled talents ^[7]. The traditional social concept of “diploma doctrine” has a cognitive bias on vocational education, and the tendency of “emphasizing general education and neglecting vocational education” is more prominent. In the field of vocational education in China, under the framework of the general vocational diversion policy, vocational education is often alienated as a passive choice path for students with poor academic performance. In the composition of students, the proportion of individuals in rural and other socially vulnerable groups is high, which is labeled as a “low-level” education type. Affected by this, many parents are more inclined to support their children in entering higher education through general education channels, resulting in higher pressure on the selection of students in vocational colleges, and significant differences in the comprehensive quality of freshmen ^[9]. In addition, in the process of career development, vocational education graduates still encounter institutional obstruction and hidden prejudice in the dimensions of professional title evaluation and job promotion, which further weakens the attraction of vocational education to potential students and restricts the healthy development of the vocational education system in ethnic areas.

4. Optimization strategy of human resources promotion in ethnic minority areas empowered by vocational education

4.1. Deepening the system reform of the integration of production and education

The core path to resolve the dilemma of the coordinated development of vocational education in ethnic areas is to build an innovative mechanism of industry education integration that is “coordinated by the government, precise guidance by the industry, and collaborative education by schools and enterprises.” First of all, the government should take a two-pronged approach: on the one hand, strengthen the scientific guidance of decision-making, and on the other hand, transfer personnel and financial authority to vocational education institutions, so as to enhance their professionalism and autonomy in the supply of vocational education services. At the industry organization level, educators should give full play to the role of industry associations as a bridge to promote the establishment of characteristic industry vocational education groups. In order to normalize the production orientation of public services in vocational education institutions and achieve the goal of “government purchasing services”, it is necessary to build a complete performance management mechanism. By virtue of the establishment of the mechanism, the production orientation of public services in vocational education institutions should be standardized and restricted, and the implementation of the mode of “government purchasing services” should

be promoted. Through the integration of industry resources and the precise connection between the employment needs of enterprises and the professional settings of colleges and universities, an efficient coordination mechanism for the connection between industry and education has been formed. In the dimension of school enterprise collaboration, it is suggested to promote the in-depth collaboration mode of building industrial colleges. By promoting the joint research of the curriculum system, the sharing of training bases, and the exchange of teachers, educators will promote the in-depth adaptation of vocational education talent cultivation to the demands of industrial development, and ultimately realize the collaborative leap forward of the education chain, talent chain, and industrial chain.

4.2. Optimizing the cultivation system of human resources

The optimization of the professional system of vocational education should follow the development principle of “demand-driven, characteristics highlighted”, and realize the precise connection between the professional layout and industrial demand by establishing a dynamic adjustment mechanism. In terms of docking with emerging industries, people should focus on key areas such as clean energy development in ethnic areas, digital economy transformation, cultural and tourism integration development, and set up emerging specialties such as photovoltaic engineering technology, ethnic cultural and creative design, and cross-border e-commerce. In the dimension of characteristic specialty construction, it is necessary to fully tap the advantages of cultural resources in ethnic areas. In addition, people can continue to deepen the reform of the “1+x” certificate system, integrate the certification of ethnic characteristics into the vocational qualification evaluation system, and establish characteristic certificates such as the level certification of Miao embroidery technology skills and the professional qualification certification of Matouqin production, so as to effectively improve the professional recognition and social recognition of vocational education, and promote the formation of a differentiated and characteristic development pattern of vocational education^[10].

4.3. Strengthen the construction of teachers and basic ability

To optimize the construction of vocational education teachers in ethnic areas, it is necessary to implement a special training plan and systematically improve the structure of teachers through multiple paths of talent introduction, on-the-job training, and resource sharing. In the dimension of talent introduction strategy, it can attract highly skilled talents with rich practical experience with preferential treatment, and build a professional education expert resource reserve. At the same time, the attraction to high-quality teachers will be enhanced through the establishment of preferential policies and special allowance incentives. In terms of on-the-job training, relying on the ethnic vocational education teachers’ teaching innovation team construction project, educators should build a normalized teacher enterprise practice mechanism and effectively improve teachers’ practical teaching ability. In addition, with the help of digital education technology, build a regional vocational education teacher sharing platform, and promote the balanced allocation of high-quality teacher resources across regions through innovative forms such as remote live teaching and virtual teaching, and research cooperation.

4.4. Perfecting system guarantee and social identity

In order to promote the high-quality development of vocational education in ethnic minority areas, it is necessary to systematically crack the system and mechanism barriers at the policy level, and comprehensively improve the social identity of vocational education. First, build a special supervision and evaluation system, incorporate the development effect of vocational education into the core indicators of local government performance appraisal,

and ensure the accurate implementation of relevant policies and measures, such as configuration, by establishing a strict supervision mechanism. Secondly, educators should improve the path of vocational education, expand the enrollment scale of “vocational education college entrance examination”, and implement the system of “examination-free admission for talents with excellent skills” in higher vocational colleges in ethnic areas, so as to open up a direct access for excellent graduates to further study in application-oriented undergraduate colleges. In the dimension of social cognition shaping, educators should improve the social status and treatment level of skilled talents, strengthen the publicity and recognition of highly skilled talents with outstanding contributions, and create a good social atmosphere of “No. 1 in all walks of life”, vividly showing the development effect of vocational education in ethnic areas. At the same time, educators should promote the equal development of vocational education and general education, scientifically set the proportion of technical and skilled talents in unit recruitment and other links, eliminate institutional employment discrimination, and effectively play the key role of vocational education in the development of human resources in ethnic areas, making it an important engine to drive regional economic and social development.

5. Conclusion

The implementation of the path of vocational education to improve human resources in ethnic areas is essential to build a four-in-one development system of “skill cultivation, cultural continuity, production and education coordination, and system innovation.” This system is deeply in line with the cross logic of human resources theory, collaborative innovation theory, and cultural capital theory. It is not only a practical solution to the practical dilemma of vocational education in ethnic areas, but also an important exploration to improve the theory of vocational education with Chinese characteristics. It consolidates the “productivity attribute” of human resources through skill cultivation, continuously strengthens the “cultural identity attribute” of human resources by relying on culture, activates the “industrial adaptation attribute” of human resources by means of production and education collaboration, and finally ensures the “value realization attribute” of human resources by institutional innovation. Through deepening the innovation of the integration mechanism of industry and education, educators can break the collaborative barriers between education supply and industrial demand; Rely on the optimization of dynamic professional system to accurately match the needs of regional economic development; Strengthen the construction of teaching staff and consolidate the foundation of talent training quality; Improve the policy and system guarantee, and reshape the social value cognition of vocational education. This systematic promotion strategy will fully activate the engine role of vocational education in the economic and social development of ethnic areas, and provide continuous and powerful talent support and intellectual guarantee for achieving the goal of common prosperity and promoting the great rejuvenation of the Chinese nation.

Funding

Chizhou University High level Talent Research Launch Fund Project (First Batch of 2025) “Research on Non Cognitive Abilities and Vocational Education Collaborative Assistance to Empower and Increase Income for Low income Rural Population” (CZ2025YJRC44); Policy-Advisory Research Project of the Institute of Culture and Education for the Chengdu-Chongqing Twin-City Economic Circle “Research on the Construction of a Long-term Mechanism for Vocational Education to Support Rural Talent Revitalization in the Chengdu-Chongqing Region” (CYY-ZZ20250302).

Disclosure statement

The authors declare no conflict of interest.

References

- [1] President of the CPC, 2021, Promote the High-quality Development of the Party's Ethnic Work in the New Era with the Main Line of Building a Strong Sense of the Chinese Ethnic Community. *People's Daily*, August 29, 2021, 1.
- [2] Li Q, Ren SH, 2020, Analysis on the Path of Inheriting Ethnic Culture of Vocational Education in Ethnic Areas — Based on the Perspective of Social Organization Participation. *China Vocational and Technical Education*, 2020(22): 74–79.
- [3] Wang YJ, Wang JC, Qiu WJ, 2023, Strategic Orientation, Connotation Composition and Operation Mechanism of Collaborative Innovation of “Three Education”. *Modern Distance Education Research*, 35(5): 57–65.
- [4] Wang JJ, Du HQ, 2022, Research on the Development of New Forms of Vocational Education under the Background of Industry and Education Integration. *Education and Career*, 1006(6): 109–112.
- [5] Hu DX, Sun YH, 2025, The Current Situation, Characteristics, Key Challenges and Path Selection of the Integration of Production and Education in China's Vocational Undergraduate Education. *Vocational and Technical Education*, 46(15): 65–73.
- [6] Chen QM, 2017, Research on the Lack of Ethnicity and Compensation of Vocational Education in Ethnic Areas, thesis, Southwest University.
- [7] Liu K, 2025, The Underlying Logic and Practical Path to Enhance the Adaptability of Vocational Education under the Background of Building an Education Power. *Modern Education Management*, 2025(4): 120–128.
- [8] Liu HL, Ma HQ, Xiao B, 2018, Research on the Coupling Mechanism of “Double Qualified” Vocational Teacher Training under the Background of Made in China 2025 — Taking Guangdong D Vocational and Technical College as an Example. *Education Academic Monthly*, 2018(9): 42–49.
- [9] Xu FH, 2016, Targeted Poverty Alleviation: A New Orientation for the Development of Vocational Education in Ethnic Areas. *Higher Education Research*, 37(11): 64–69 + 76.
- [10] Jiang T, Yang ZS, 2022, The Value, Logic and Path of Vocational Education Promoting Common Prosperity in Ethnic Areas. *Research on Ethnic Education*, 33(2): 146–152.

Publisher's note

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.