

Vocational Education, Skill Formation, and Social Development

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Vocational education plays a crucial role in cultivating high-quality skilled professionals to meet the demands of social development and is intrinsically linked to industrial upgrading. Concurrently, the rapid advancement of the Fourth Industrial Revolution and the ongoing process of economic digitalization are reshaping the global financial structure, leading to profound transformations and a reconfiguration of the international landscape. In response to this evolving context, vocational education systems should continuously innovate their objectives, training practices, and assessments to better align with industrial demands. To enhance national comprehensive strength, secure a competitive advantage in talent development, and establish an international edge, countries worldwide are accelerating the formulation of skill-based personnel training strategies. This includes the introduction of various policies and initiatives to improve vocational education systems in these countries and position themselves favorably in international competition. The effectiveness of these policy implementations, their impact on skilled personnel, and their alignment with the direction of societal progress are critical areas of ongoing research.

1. The Increasing Importance of Vocational Education in Global Education Systems

In recent years, enhancing the alignment between vocational education and social development needs has become a strategic consensus shared by nations worldwide. China has placed significant emphasis on the role of vocational education in cultivating highly skilled professionals and master artisans, continuously strengthening its policy support. For example, in 2023, eight ministries, including the Ministry of Education of the People's Republic of China, jointly issued the "Implementation Program for Enhancing Action on Vocational Education Industry-Education Integration and Empowerment (2023–2025)" ([National Development and Reform Commission of the People's Republic of China, 2023](#)). This initiative focuses on five key areas: demonstrating the effort of deepening industry-education integration, optimizing the professional offerings of vocational colleges and universities, increasing state financial support, promoting industry-university-research collaboration and innovation, and implementing various incentives and support measures. Furthermore, the Chinese government has introduced programs such as the "1 + X" certificate system pilot ([Ministry of Education of the People's Republic of China, 2019](#)), which encourages students to acquire multiple vocational qualifications alongside academic certificates to better meet the evolving demands of the labor market.

Moreover, the United States is actively promoting vocational education through legislative changes and the introduction of new initiatives. In 2018, the enactment of the Strengthening Career and Technical Education for the 21st Century Act marked a comprehensive reform of the U.S. vocational education system, emphasizing the importance of school-business partnerships ([Edgerton, 2022](#)). Germany, a leading example of the dual



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vocational education model, also launched the Vocational Education Excellence Program in 2022 (OECD, 2024). This program aims to enhance vocational education quality and international competitiveness by improving teachers' professional competence, expanding opportunities for student participation in international collaborations, and strengthening connections with industry.

In China, vocational education is often perceived as an independent segment of the education system. However, vocational education, when viewed in a broader sense, should not be confined to a specific type of education. Its core value lies in developing skills with deeper and more expansive connotations. Vocational education should be considered a multidimensional and cross-cutting educational process in this broader context. It encompasses the transmission of technical skills and the development of innovative capabilities, professionalism, and lifelong learning, all of which are essential for adapting to the needs of a rapidly changing society and economy. To improve the quality of vocational education development at a deeper level, we need to start from the following three perspectives. First, we focus on the employment quality and career development prospects of vocational education graduates, ensuring their better integration into society and helping them realize their value through enhanced employment guidance and services. Second, a more scientific and rational development plan for vocational education should be formulated and implemented to ensure the optimal allocation and effective use of educational resources. Third, we advocate promoting the internationalization of vocational education by strengthening international exchanges and cooperation, drawing on advanced global educational concepts and experiences, and advancing the international development of vocational education.

2. Vocational Education: A Key Driver of Skill Formation and Social Development

Vocational education is an important engine for skill formation and social change, as it aims to promote individual skill development and social development through training. On the one hand, vocational education plays a key role in skill formation and social progress by fostering personal skill development and contributing to societal advancement. On the other hand, vocational education is closely linked to social development, directly supplying the labor market with skilled workers and training professionals whose skills are highly aligned with market demands, significantly increasing social employment rates. In addition, technological progress is a major driving force for economic development, and skilled talent is essential for technological innovation and industrial upgrading, as well as for enhancing national technological innovation and improving international competitiveness.

3. Social Development: New Challenges and Opportunities for Vocational Education and Skill Formation

Vocational education is confronted with unprecedented challenges and opportunities in the context of technological innovation, industrial transformation, and the diversification of labor markets. While traditional vocational education systems have often focused on industry-specific technical operations, the rapid advancement of emerging technologies demands a shift toward cultivating cross-disciplinary competencies. The spread of digitalization and artificial intelligence calls for vocational education to train "tool users" and innovative talent who possess creativity, critical thinking skills, and a high degree of adaptability. In addition, vocational education continues to face deeply ingrained social biases. In some countries, it is still perceived as a "second-class" form of education, lacking the social status associated with academic education. This cognitive bias, which is particularly prevalent in specific cultural contexts, limits the widespread recognition

of vocational education. As a result, many families view it as supplementary education, which influences students' choices and discourages familial support. The social value and potential of vocational education are not fully acknowledged, causing some young people who aspire to pursue technical careers to lack the recognition and support they need from their families and society. This, in turn, exacerbates the challenges faced by vocational education and hinders its development as a respected and viable pathway for future careers.

Despite the numerous challenges facing vocational education, technological innovation and policy support have created new opportunities for its development. The integration of emerging technologies, such as online education platforms, virtual reality (VR), and augmented reality (AR), has led to the introduction of more flexible and efficient teaching models for vocational training. Moreover, government support has significantly increased the advancement of vocational education. Through measures such as increased financial investment, the optimized allocation of educational resources, and strengthened school–business collaboration, the government has provided vital support to the sector. Notably, in China, national policy explicitly aims to promote the deep integration of vocational education with industrial development, driving its transformation toward greener, more digital, and intelligent pathways to meet evolving societal needs (Fan, 2020).

To fully capitalize on these opportunities and address challenges, vocational education requires innovations in curriculum design, teaching models, resource allocation, and policy guidance to increase social value and recognition. This Special Issue explores the relationships among vocational education, skill formation, and social development, examining how to respond to current and future challenges. It also highlights the achievements of policies and various stakeholders in opening new avenues for the future development of vocational education.

4. Future Perspective

With the acceleration of social development and industrial transformation, vocational education and skill formation play increasingly critical roles in the modern labor market. Future vocational education must focus on cultivating skilled talent, enhancing students' comprehensive qualities, and advancing social equity and economic development.

First, attention should be directed toward the disruptive impact of technological innovations on the evolving needs of vocational education. The integration of artificial intelligence, big data, and other technologies into vocational education should be explored, particularly with respect to how these tools can optimize course design, teaching methods, and the overall student learning experience. By leveraging flexible education models, online learning platforms, and practical project-based courses, vocational education can more effectively foster skill development and improve students' employability.

Second, the holistic development of students' soft skills should be prioritized. In an increasingly globalized world, vocational education must also focus on enhancing students' cognitive abilities and critical thinking and cultivating versatile talent from an international perspective. Particularly in environments where globalization and localization intersect, vocational education struggles to balance global demands with local cultural characteristics. This issue must be addressed in future curricula and training programs.

Third, attention should be given to the relationship between the widespread expansion of general higher education and the evolving social perception of vocational education. While broadening access to degree programs has increased educational opportunities for many, it has also contributed to the stigmatization of vocational education in some societies. In certain regions, vocational education is still viewed as “low-end” education, lacking social recognition and value. Future research should explore how the growth

of general higher education influences public attitudes toward vocational education and investigate ways to promote the complementary development of vocational and general higher education by enhancing the social standing and recognition of vocational education.

Fourth, attention should be given to the social responsibility of vocational education in supporting disadvantaged groups. Vocational education plays a crucial role in improving the economic status of marginalized populations, particularly in economically underdeveloped regions. It provides employment opportunities for students and contributes to enhancing social equity and mobility. Future research should focus on how vocational education can more effectively fulfill its social responsibility, especially in assisting students from low-income families, ethnic minorities, and other marginalized groups in gaining access to development opportunities.

Fifth, the positioning and future development of vocational education warrant further exploration. Future research should investigate the role of vocational education within the broader education system, particularly its relationship with higher education. Additionally, the development of vocational bachelor's degree programs deserves closer attention. Research should strengthen theoretical discussions and provide practical guidance to support advancing vocational education, especially with respect to how to promote sustainable development through the integration of industry and education and through school–enterprise collaboration.

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