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Original Research Article

Core connotation, theoretical basis and policy evolution of collaborative innovation among vocational education, higher education and continuing education

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Abstract: Vocational education, higher education and continuing education each have different function directions, meanwhile they supplement and support each other mutually. Breaking the obstacles of separate development and achieving deep cooperation among the three kinds of education is an inevitable tendency that is for adapting to high-quality economic and social development and promoting individuals' lifelong all-round development. This research systematically puts in order the core meaning, theoretical basis, and policy development background of the cooperative innovation of the three kinds of education, therefore it aims to offer theoretical references for pushing their deep integration and building an integrated talent training system in the new era.
Keywords: vocational education; higher education; continuing education; collaborative innovation

1. Introduction

The 20th National Congress report of Communist Party of China clearly puts forward the strategy of "overall planning the cooperative innovation of vocational education, higher education and continuous education", therefore it is regarded as a key strategic arrangement which is for constructing a powerful nation in education, hence it is a core means which is for elevating the high-quality education system and cultivating the nationwide lifelong learning pattern[1].

Vocational education, higher education and continuing education each have distinct functional orientations and are mutually complementary and supportive. Breaking down barriers to independent development and achieving in-depth collaboration among the three types of education is an inevitable trend that adapts to the high-quality development of the economy and society and supports individuals' lifelong and all-round development. The collaborative innovation of the "three educations" is not a simple superposition of different education types; rather, underpinned by synergy theory, symbiosis theory and lifelong education theory, it aims to improve quality and efficiency through multi-stakeholder collaboration, resource integration and institutional innovation . Over decades of policy iteration, the collaborative development of the "three educations" in China has evolved through stages from independent development and communication-connection to coordinated collaborative innovation. Against this backdrop, this study systematically elaborates on the core connotation, theoretical foundation and policy evolution context of the collaborative innovation of the "three educations", so as to provide theoretical references for promoting the in-depth integration of the three types of education and constructing an integrated talent training system in the new era.

2. Core connotation of collaborative innovation among the "three educations"

The collaborative innovation of the "three educations" refers not to a mere juxtaposition of education types, but to the process whereby vocational education, higher education and continuing education, with the participation of multiple stakeholders including governments, schools, enterprises and industries, achieve coordinated symbiosis and complementary advantages among subsystems through institutional design, resource integration and mechanism innovation, ultimately generating synergistic effects that surpass the independent operation of any single education type[2].

According to synergy theory, such synergistic effects arise from the exchange of matter, information

and energy among subsystems, with core characteristics as follows:

Ecological nature: As organic components of the educational ecosystem, the "three educations" are interdependent and dynamically adaptive, forming a cyclical and complementary chain of "cognition–practice–relearning".

Sharing the nature: Emphasizing the opening flow of high-quality education resources among the "three educations", and realizing the best resource configuration through cross-enrollment, credit confirmation and teacher sharing.

Sustainability: Under the direction of lifelong study, building education roads that cross individuals' work lives to satisfy their lifelong demands for all-round development.

From the aspect of function localization, vocational education puts key point on technique and skill cultivation, higher education lays stress on theory innovation and academic leading, and continuing education does specialization in knowledge renewal and skill promotion. By means of the cooperation, the three parties have formed an education system which covers the whole talent cultivation life cycle.

3. Theoretical basis of collaborative innovation among the "three educations"

The theory of synergy offers method guarantee for the cooperative innovation of the "three educations". This theory, which was put forward by German scholar Hermann Haken in the year 1971, emphasizes that inside a system the subsystems change from disorder to order by means of synergy, producing synergistic effects in which the whole is larger than the total of its individual parts. In the cooperation work of the "three educations", this theory gets embodied in breaking the barriers between different education kinds, promoting the free flow and high-efficiency distribution of resource factors by means of coordinated planning and system innovation.

The theory of symbiosis has further made revelation of the internal mechanism of the "three educations" cooperative work. This theory takes vocational education, higher education and continuing education as three symbiosis units, which form a symbiosis connection of "mutual dependence and mutual penetration" through heterogeneous complementary, model advancement, environment promotion and interface activation. Its core principle is to make clear the function position of every kind of education, hence realizing resource sharing, responsibility sharing and win-win interests.

The theory of lifelong study gives the direction of value to the cooperative innovation of the "three educations". This theory puts emphasis that education ought to cover a person's whole life, smash the limits of stage-based education, and build a flexible and open lifelong study mode. The cooperative innovation of the "three educations" just exactly acts as a practice carrier of the lifelong education idea, satisfying individual learning demands at different life stages through constructing connected education channels and learning result authentication mechanisms.

4. Policy evolution of collaborative innovation among the "three educations"

The policy development of cooperative innovation among the "three educations" in China is deeply consistent with the nation education development strategy and the requirements of economic and social transformation, it undergoes a gradual evolution from comparatively independent development to communication-link, and further to overall cooperative innovation. The change through these three phases not only reflects the internal rules of education development, but also refracts the nation's deepened cognition on the functions that the education system has.

4.1. Stage of relatively independent development (1950s–late 20th century)

The core mission of this stage was to build each organizational system for the "three educations", thus accomplishing a jump from having none to being built. In the early years of the People's Republic of China, amid the need to build an industrial system and address talent shortages, the Decision of the Government Administration Council of the Central People's Government on Reforming the School System (1951) first established the development pattern of secondary specialized education, higher education and adult education, laying an institutional foundation for the independent development of the three types of education[3] . In 1985, the Decision of the CPC Central Committee on the Reform of the Educational System clarified the development orientations for different education sectors: Higher education was granted the

mandate to "expand school-running autonomy", vocational education was set for "vigorous development", and adult education was positioned to "respond to social demands". This policy further consolidated the independent development trajectory of each education type. The promulgation and implementation of the Outline for China's Education Reform and Development in 1993 and the Education Law of the People's Republic of China in 1995 defined the legal status and development objectives of vocational education, higher education and continuing education from the policy and legal perspectives respectively, forming a pattern in which the three sectors developed in parallel with independent institutional systems. During this period, higher education was highly recognized as an elite educational resource. Vocational education undertook the mission of cultivating technical and skilled talents for the industrial system, while continuing education centered on the function of academic qualification compensation . Although the three sectors formed functional complementarity, there was a lack of systematic design for collaborative mechanisms.

4.2. Stage of communication and connection (early 21st century–2018)

With the popularization of higher education and the growing demand for optimizing talent structure amid economic and social development, policy priorities have shifted toward breaking down the barriers among vocational education, higher education and continuing education, and promoting the interconnection of various educational types. The Decision of the CPC Central Committee and the State Council on Deepening Educational Reform and Comprehensively Promoting Quality-oriented Education issued in 1999 first proposed "establishing an educational system that enables communication and articulation across different types of education", marking the transformation of the relationship among the three categories of education from isolated development to coordinated articulation. The National Medium and Long-Term Outline for Education Reform and Development (2010–2020) released in 2010 explicitly put forward the initiative to "build an overpass for lifelong learning and facilitate vertical articulation and horizontal communication among education at all levels and of all types". It also made specific arrangements for the articulation between vocational education and higher education, as well as the connection between continuing education and formal education[4] . The Decision on Accelerating the Development of Modern Vocational Education promulgated in 2014 advocated "exploring the development of undergraduate-level vocational education", which opened up a pathway for the vertical integration of vocational education and higher education. In 2016, the Outline of the 13th Five-Year Plan for National Economic and Social Development incorporated "formulating the national qualifications framework" into top-level institutional design for the first time, providing institutional guidance for the mutual recognition of learning outcomes across the three education sectors.During this period, the Report to the 16th National Congress of the Communist Party of China replaced the traditional concept of "adult education" with "continuing education". The academic qualification compensation function of continuing education gradually declined, while its service function for lifelong learning was continuously strengthened. Articulation pathways among the three types of education were gradually established; nevertheless, collaborative mechanisms remained underdeveloped, accompanied by the prominent problem of policy fragmentation.

4.3. Stage of coordinated collaborative innovation (2019–present)

As higher education entered the universal access stage and high-quality development demanded the overall efficiency of the education model, collaborative innovation among the "three educations" became a national strategy, with policy design emphasizing systematicness, holism and synergy. In 2019, General Secretary Xi Jinping pointed out at the Fourth Plenary Session of the 19th Central Committee that reforms in the new era "have higher requirements for systematicness, holism and synergy", providing fundamental guidelines for the coordinated development of the "three educations". In the same year, the National Vocational Education Reform Implementation Plan explicitly called for "improving the mechanism for coordinated development of vocational and technical education, higher education and continuing education" and launched pilot programs for the national qualifications framework. The report of the 20th National Congress of the Communist Party of China (2022) designated "coordinating the collaborative innovation of vocational education, higher education and continuing education" as a key task for building an educationally strong country, solidifying its status as a national strategy. The newly revised Vocational Education Law of the People's Republic of China (2022) stipulates that "mechanisms for the accreditation, accumulation and transfer of credits, qualifications and other learning outcomes across all levels and types of school education and vocational training shall be established and improved", granting legal protection

to the collaboration of the "three educations"[5]. The Outline for Building an Educationally Strong Country (2024–2035) further detailed the institutional design and practical pathways for the collaborative innovation of the "three educations", emphasizing the systematic synergy of "promoting the integration of vocational and general education, industry-education integration, and science-education convergence". At this stage, policy focus shifted from "channel articulation" to "model synergy", strengthening the community awareness of the "three educations" from the top-level design and fostering a collaborative innovation model covering the entire talent training lifecycle and all elements of resource allocation.

Analyzing the internal logic of policy evolution, the transformation of relationships among the "three educations" closely aligns with the progression of higher education from elite to mass and then to universal access. In the elite stage, the "three educations" exhibited a complementary relationship, meeting the educational needs of different groups respectively; in the mass stage, a competitive relationship became prominent, with the social value recognition of vocational and continuing education facing challenges; in the universal access stage, they evolved into a coordinated relationship, focusing on enhancing the overall efficiency of the education model through coordinated collaboration. Essentially, this evolution reflects the transition of national education policies from "scale expansion" to "quality improvement" and from "decentralized development" to "systematic integration", demonstrating a profound understanding of educational laws and the needs of economic and social development.

5. Conclusion

Collaborative innovation among the "three educations" is a pivotal strategic initiative that aligns with the lifelong education concept and adapts to the systematic development of the education system. Its essence lies in breaking down development barriers among the three types of education underpinned by diverse theories, and achieving holistic educational effectiveness through resource sharing and complementary advantages. Throughout China's education development, the "three educations" have evolved from independent parallelism and interconnection to a mature stage of coordinated collaboration, with a continuously improving policy system and a clear development logic, adapting to national education upgrading and changes in social talent demand. At present, challenges such as imperfect mechanisms and inadequate resource integration persist in the collaborative development of the "three educations". In the future, it is essential to remain grounded in the goal of building an educationally strong country, deepen institutional and mechanism innovation, open up articulation channels across different types of education, strengthen the ecological symbiosis and in-depth integration of the three educations, continuously improve a full-cycle and integrated talent training system, and fully unleash the educational value and development momentum of the collaborative innovation of the "three educations".

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