

Secondary-to-Undergraduate Articulation: China's Innovative Pathway for Vocational and Higher Education Integration

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Abstract: As an innovative educational mode, “Secondary-to-Undergraduate Articulation” refers to the integrated training mode between secondary vocational education and undergraduate education. For over a decade, various regions have explored training modes such as “3+4” and “five-year consistent system,” and Jiangsu Province has widely promoted and applied them. Various regions have established curriculum systems and teaching quality assurance mechanisms to promote the alignment between talent cultivation and industry demand. “Secondary-to-Undergraduate Articulation” provides students with dual opportunities for further education and employment, promotes efficient allocation of educational resources, and serves regional economic development. In the future, further improvement and optimization are needed to promote the high-quality development of the mode. The study helps to reveal the theoretical and practical path of integrating secondary vocational education with undergraduate education.

Keywords: Vocational education; Undergraduate education; Cultivation mode; Collaborative education

Online publication: 4th September 2025

1. Introduction

With the increasingly urgent demand for high-quality technical and skilled talents in society, the integration of vocational education and undergraduate education has become an important direction of educational reform. The “Secondary-to-Undergraduate Articulation” training mode has emerged as the times require, providing students with a continuous development path from vocational skill training to undergraduate-level further studies.

2. The concept and development of “Secondary-to-Undergraduate Articulation”

“Secondary-to-Undergraduate Articulation” refers to an integrated training mode that combines secondary vocational education with undergraduate education. It aims to integrate resources from both secondary

vocational and undergraduate education, providing students with a more comprehensive and systematic learning experience^[1]. Unlike the EU's "Vocational and Higher Education Articulation" and Germany's "Dual System"^[2,3], this mode achieves curriculum integration, teacher sharing, resource sharing, and other aspects through deep cooperation between secondary vocational schools and undergraduate institutions, cultivating high-skilled talents who can meet the needs of socio-economic development.

In 2014, Shanghai Municipal Education Commission issued the "Notice on the Pilot Work of Implementing the Integrated Training mode of Secondary Vocational Education and Applied Undergraduate Education," marking the official implementation of the "Secondary-to-Undergraduate Articulation" training mode. According to the pilot program, students who have completed the secondary vocational education stage can be directly admitted to undergraduate colleges for further studies after passing the transfer examination.

In recent years, the national and local governments have provided solid policy guarantees for the "Secondary-to-Undergraduate Articulation" education mode through a series of policy documents. In 2021, the General Office of the Central Committee of the Communist Party of China and the General Office of the State Council, PRC issued the "Opinions on Promoting the High Quality Development of Modern Vocational Education," which proposed to "support the implementation of long-term education in professional fields with long training cycles and high skill requirements." The revised Vocational Education Law of the People's Republic of China in 2022 also stipulates that "secondary vocational schools may, in accordance with relevant national regulations, implement integrated enrollment and training with higher vocational school education in relevant majors."

3. Research review

Since 2015, the number of academic papers related to the theme of "Secondary-to-Undergraduate Articulation" has shown a rapid growth trend. Researchers have defined the concept of "Secondary-to-Undergraduate Articulation" from different perspectives, gradually forming a consensus, emphasizing its characteristics of connectivity, cohesion, and synergy, making the connotation of the concept of "Secondary-to-Undergraduate Articulation" clearer.

Xu pointed out that "Secondary-to-Undergraduate Articulation" is an innovative mode that breaks down the barriers between vocational and undergraduate education and achieves the integration of talent cultivation^[4]. Dai further emphasized that the core of "Secondary-to-Undergraduate Articulation" lies in the integration and connection of the curriculum system^[5]. In terms of theoretical foundation, the research is mainly based on the theories of lifelong education, vocational education, and transitional education, and has constructed a theoretical basis for the "Secondary-to-Undergraduate Articulation." Liu et al. analyzed the necessity and feasibility of integrating secondary vocational education, higher vocational education, and undergraduate education from the perspective of lifelong education^[6]. Liu combined vocational education theory to explore the implementation mechanism of "Secondary-to-Undergraduate Articulation"^[7].

In addition, scholars have expanded the research field of "Secondary-to-Undergraduate Articulation" from multidisciplinary perspectives such as education, management, and sociology. Nian Chaoxu analyzed the path of collaborative education between secondary vocational schools, undergraduate colleges, and enterprises from the perspective of management, while Yang Xinyi explored the significance of "Secondary-to-Undergraduate Articulation" for social mobility and talent cultivation^[8,9].

4. Practice of “Secondary-to-Undergraduate Articulation”

4.1. Exploration of cultivation mode

4.1.1. “3+4” mode

This is one of the main modes of “Secondary-to-Undergraduate Articulation,” also known as the “Secondary-to-Undergraduate Connection.” Students study for 3 years in vocational school and then enter the undergraduate stage for 4 years, obtaining a bachelor’s degree after completing their studies. In the “3+4” mode, students do not need to participate in selection exams, but instead enter applied undergraduate universities through process assessments and final transition assessments based on the cooperation agreement between the former secondary vocational school and the latter applied undergraduate university.

Jiangsu Province is one of the earliest provinces in China to launch the “3+4” pilot project. Since 2012, this project has been widely promoted and applied in Jiangsu Province, with the number of pilot projects increasing year by year and the enrollment scale continuously expanding (**Table 1**). The participating vocational and undergraduate colleges actively promote innovation and practice in talent training modes. For example, since 2014, Liyang Polytechnic School of Jiangsu Province has launched the “3+4” integrated training program for logistics management majors. Through a talent cultivation mode guided by standards, curriculum linkage, and integrated education, it has cooperated with universities and enterprises in multiple fields and achieved significant results.

Table 1. Pilot Projects for the “Secondary-to-Undergraduate Connection” in Jiangsu Province from 2012 to 2024

Year	Number of approved projects	Number of participating undergraduate colleges	Number of participating secondary vocational schools
2012	5	3	5
2013	35	14	25
2014	94	21	44
2015	106	25	45
2016	96	24	44
2017	93	22	41
2018	84	25	40
2019	62	20	33
2020	63	21	36
2021	42	15	26
2022	37	14	24
2023	33	10	23
2024	33	13	26

Source: According to the approval documents for the construction project of modern vocational education system by Jiangsu Provincial Department of Education.

4.1.2. “Five-year consistent system” mode

Students study for 3 years in secondary vocational education, 2 years in higher vocational education, and then 2 years in undergraduate education through transfer exams. This mode, also known as “Secondary-Higher-Undergraduate Articulation,” has been widely applied in Gansu and other places, ensuring the quality of students’ learning through process elimination and transition exams.

4.1.3. “Targeted Vocational Enrollment” mode

“Targeted Vocational Enrollment” refers to a specialized higher education admission pathway where regular universities enroll graduates from secondary vocational schools (including vocational high schools, specialized vocational schools, and technical schools). This process evaluates students through examinations in cultural subjects (such as Chinese, Mathematics, and English) alongside professional foundation courses and specialized vocational courses. Through the selective examination method of “Targeted Vocational Enrollment,” graduates from secondary vocational schools have the opportunity to continue their learning in applied undergraduate universities.

4.1.4. International Secondary-to-Undergraduate Articulation program

Shanghai Normal University Tianhua College International Secondary-to-Undergraduate Articulation Program offers international courses such as IELTS and TOEFL, and collaborates with well-known universities in countries such as the UK and Australia to provide students with a “dual student status + one-stop overseas education” educational mode. This mode not only broadens students’ international perspectives but also provides them with more diverse options for further education and employment.

4.2. Curriculum system setting

Vocational and undergraduate colleges jointly develop a curriculum system, exploring modular and project-based curriculum integration methods to make the curriculum more closely connected. In terms of curriculum design, emphasis is placed on strengthening students’ foundational subjects while emphasizing both professional theory and practical skills. For example, some schools in Shanghai focus on both the learning of general knowledge and the cultivation of professional abilities in the curriculum of Secondary-to-Undergraduate Articulation majors. Chongqing Chemical Industry Vocational College has established an integrated training curriculum system of “Secondary-Higher-Undergraduate,” which has improved the fit between talent cultivation and regional industrial needs. The construction of the curriculum system provides a solid curriculum foundation for the “Secondary-to-Undergraduate Articulation” mode, ensuring that students can smoothly transition through different stages of learning.

4.3. Teaching quality assurance

In order to ensure the teaching quality of the “Secondary-to-Undergraduate Articulation,” many regions and schools have established interschool joint meetings and joint teaching inspection systems for talent cultivation, in order to enhance communication and cooperation between vocational and undergraduate colleges and improve the teaching quality of integrated majors. At the same time, some schools are also attempting to establish a diverse and mixed structure of teaching staff, including “dual teacher dual ability” teachers and part-time teachers from industry enterprises, to improve the quality of talent cultivation. Some schools have established an evaluation mechanism that combines process evaluation and summative evaluation, focusing on the comprehensive quality evaluation of students, and the evaluation mechanism is more complete. In addition, the promotion of teaching methods such as project-based teaching, case teaching, and situational teaching has strengthened the practical teaching process, deepened teaching reform, and further improved teaching quality.

5. Retrospect and prospect

Over a decade of practice has shown that the “Secondary-to-Undergraduate Articulation” mode has achieved

remarkable educational outcomes.

The mode has opened up a “green channel” for students to advance in their studies, effectively balancing the dual needs of further education and employment development. The Vocational-Undergraduate Connection Project in Jiangsu, Shanghai, Zhejiang, and other places has attracted a large number of high-scoring candidates. Students can enjoy the national free policy in the secondary vocational stage, while avoiding the pressure of “Exam-oriented Education” and planning their career in advance.

The mode also promotes the efficient allocation of educational resources. Universities and vocational schools collaborate to develop integrated courses that cover the entire process from basics to practice, meeting the learning needs of students at different stages. For example, Chongqing Chemical Industry Vocational College has collaborated with 13 secondary and higher education institutions and enterprises to develop integrated courses, enhancing the alignment between talent cultivation and regional industrial demands.

In addition, the mode has played an important role in serving regional economic and social development. The practice in Jiangsu, Zhejiang, Shanghai and other places has shown that students trained through the “Secondary-to-Undergraduate Articulation” have a high local employment rate, meet the needs of local industries, and promote regional economic development.

In the future, the integrated mode needs to further improve the collaborative education mechanism, deepen curriculum reform, strengthen the construction of the teaching staff, improve the policy support system, promote the comprehensive growth of students, and better meet the demand for high-skilled talents in social and economic development. At the same time, the mode can also improve the overall level of vocational education in China through international cooperation and exchange, drawing on advanced international experience.

Funding

The 2023 Special Project on Educational Reform at Nanjing Xiaozhuang University, “Innovation and Practice of International Talent Cultivation in Tourism Management under the Background of New Liberal Arts Construction” (Project No.: 4142308)

Disclosure statement

The authors declare no conflicts of interest.

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