

Research on Optimizing the Integrated Talent Training Model of Vocational Education Based on the Background of Long Term Education System

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Abstract. In the context of economic globalization and industrial upgrading, long-term vocational education plays a significant role in cultivating high-quality technical and skilled talents. This paper focuses on the integrated talent cultivation model of long-term vocational education. First, it explains the research background, highlights the shortcomings of traditional three-year secondary vocational education, and clarifies the support from national policies for long-term vocational education. When summarizing the integrated talent cultivation model of long-term vocational education, relevant concepts and common forms are introduced, along with its characteristics in terms of training objectives and curriculum systems, as well as its advantages in talent cultivation quality and employment competitiveness. Current analysis shows that issues such as unclear training objectives still exist under policy support. Case studies of Wenzhou Vocational Education in Zhejiang and Guangdong Institute of Mechanical and Electrical Technology are selected for analysis. Both cases exhibit notable features and clear effectiveness in curriculum system construction and teaching method application, leading to improvements in talent cultivation quality and employment competitiveness. Existing problems are addressed through strategies such as improving policies, optimizing course structures, and strengthening faculty, aiming to comprehensively enhance the quality of talent cultivation in long-term vocational education.

Keywords: Long-term Vocational Education; Integrated talent training mode; Current situation analysis; Case study; Optimization strategy.

1. Introduction

During the development of long-term vocational education, numerous issues and challenges coexist^[1]. The imperfections in the integrated talent cultivation model significantly constrain the development of long-term vocational education. Currently, the connection between different stages of long-term vocational education is not tight enough, and there is a lack of systematicness and coherence in the curriculum system. Issues such as repetitive teaching content are prominent. As a result, students' learning outcomes and career development are affected, and the quality and appeal of long-term vocational education are also reduced. Optimizing the integrated talent cultivation model for long-term vocational education and improving the quality of talent cultivation is an urgent issue that needs to be addressed in the current field of vocational education.

2. Overview of the integrated talent training mode of vocational education with long schooling system

The integrated talent cultivation model of long-term vocational education clearly focuses on industry needs and job requirements^[2]. For example, in the field of intelligent manufacturing, students master core technologies such as industrial robot programming and operation, and the debugging and maintenance of automated production lines. They also possess the ability to solve practical problems in intelligent manufacturing and can undertake tasks such as those of an intelligent manufacturing engineer or an automation equipment maintenance engineer.

Compared to traditional training models, the integrated long-term education model for talent cultivation has significant advantages^[3]. In terms of quality of talent development, the long-term education model provides students with more systematic and comprehensive education and training. For example, in the three-year vocational nursing program, the focus is on basic nursing skills^[4]. However, in the long-term education model, after laying a foundation during the vocational stage, students can further deepen their knowledge and skills in higher vocational or undergraduate stages, such as critical care nursing and nursing management, making their professional knowledge more solid and their skill levels more comprehensive. In nursing skills competitions, the award-winning rate for students from the long-term education nursing program reaches 40%, while it is only 20% for students from the three-year vocational nursing program. In terms of employment competitiveness, students with longer study periods and stronger professional skills have an increasingly prominent advantage in the job market. Survey results also show that the average starting salary for long-term education students is about 1000 yuan higher than that of three-year vocational students, and they also have greater advantages in employment stability and professional alignment.

3. Status quo of long-term vocational education

In recent years, the state has increasingly emphasized the development of long-term vocational education and introduced a series of policies to support its growth^[5]. In 2019, the State Council issued the "National Vocational Education Reform Implementation Plan," which proposed "expanding the enrollment scale for integrated junior high school and higher vocational education... exploring long-term cultivation of high-end technical and skilled talents." This clearly identified the significant role of long-term vocational education in cultivating high-end technical and skilled talents^[6]. The transformation from integrated to long-term cultivation marked a shift in vocational education, as noted in the "Opinions on Promoting High-Quality Development of Modern Vocational Education" issued by the General Office of the Central Committee of the Communist Party of China and the General Office of the State Council in 2021, which stated "supporting long-term cultivation in professional fields with longer training cycles and higher skill requirements." This further emphasized key areas for long-term cultivation and provided clear policy guidance to facilitate its development. In 2022, the "Opinions on Deepening the Reform of the Modern Vocational Education System" proposed supporting high-quality secondary vocational schools in collaborating with higher vocational colleges to offer five-year integrated programs, while also promoting the connection between secondary vocational education and vocational undergraduate education. This policy further specifies the main content of long-term cultivation, providing more concrete basis and guidance for the deepening and implementation of long-term vocational education.

4. Case analysis of integrated vocational education talent training mode with long schooling system

4.1 Case selection and introduction

This study selects Wenzhou Vocational Education in Zhejiang and Guangdong Institute of Mechanical and Electrical Engineering as case studies to conduct an in-depth analysis of the implementation of integrated talent cultivation models for long-term vocational education. Wenzhou Vocational Education has actively explored and innovated in long-term training, demonstrating significant regional characteristics. Guangdong Institute of Mechanical and Electrical Engineering has achieved notable success in professional development and school-enterprise cooperation, providing valuable experience for long-term vocational education.

4.2 Case implementation results

After the implementation of a long-term integrated talent cultivation model in Wenzhou, Zhejiang's vocational education has shown significant results. In terms of talent quality, students' professional skills have greatly improved. For example, under the "integration of medium and high-level enterprises" model for intelligent manufacturing, the average score of key skills such as industrial robot programming and automated production line debugging reached over 85 points based on skill assessment results, an increase of 15 points compared to before the implementation of this model. In terms of professional ethics, the cultivation of students' professional morals, teamwork, and innovative spirit has also achieved good results. Feedback from enterprises indicates that students demonstrate strong responsibility and team cooperation awareness during internships and work, capable of proactively handling various tasks they encounter. During an internship at one company, a student from this major proposed an optimization plan for an automated production line, which increased production efficiency by 15% and received high recognition from the company. Table 4 shows the comparison of skill assessment scores for the "integration of medium and high-level enterprises" intelligent manufacturing program in Wenzhou's vocational education.

Table 4 Comparison of skill assessment results of students majoring in intelligent manufacturing of "integration of medium and high enterprises" in Wenzhou vocational education

Skill assessment items	Average performance before implementation	Average performance after implementation	Increase (points)
Industrial robot programming	70	85	15
Automation production line debugging	72	88	16

In terms of employment, students' competitiveness in the job market has significantly improved, and companies have shown a strong preference for their graduates, leading to noticeable improvements in employment quality. For instance, the employment rate for graduates from 2023 in the field of intelligent manufacturing is 98%, with 70% entering high-quality enterprises, earning an average monthly salary of 5,500 yuan, which is 1,000 yuan higher than before the implementation of this model. In terms of job stability, only 5% leave within one year, lower than the turnover rate under traditional training models. Table 5 compares the employment situation of graduates from Wenzhou's vocational education "integration of medium and high-level enterprises" program in intelligent manufacturing.

Table 5 Comparison of employment situation of graduates majoring in intelligent manufacturing with integrated medium and high enterprises in Wenzhou vocational education

A particular year	Employment rate (%)	The proportion of employment in high-quality enterprises (%)	Average monthly salary (yuan)	Turnover rate within one year (%)
Before implementation (2020)	90	50	4500	15
After implementation (2023)	98	70	5500	5

The implementation of the "3+2" integrated secondary and higher vocational education model at Guangdong Institute of Mechanical and Electrical Engineering has shown remarkable results. In terms of talent cultivation quality, students' overall qualities have been comprehensively improved. The Electrical Automation Technology program serves as a prime example; students have performed well in skills competitions, with the provincial Electrical Automation Skills Competition winning rate increasing by 15%. In terms of theoretical knowledge, through analysis of course exam scores, the average score has increased by more than 10 points, indicating a stronger grasp of

professional knowledge among students. For practical skills, students can apply their learned knowledge and skills to complete real-world projects. During internships at companies, one student from this program successfully completed an electrical control system upgrade project for a company, receiving high praise from the company.

5. Conclusions

This study focuses on the integrated talent cultivation model of long-term vocational education. It is not hard to see from the current situation that policy support has increased enrollment and improved majors, diversified teaching methods have emerged, and school-enterprise cooperation has deepened. However, issues also exist: vague training objectives, incomplete course structures, uneven distribution of teaching resources, shallow levels of school-enterprise cooperation, and single evaluation methods. To address these shortcomings, specific improvements can be made through strategy optimization: enhancing the standardization and completeness of policies and standards, increasing investment; optimizing course content to better align with practical needs; strengthening faculty to improve their support capabilities; innovating models in deepening school-enterprise cooperation; using multiple stakeholders and multidimensional evaluation methods in a comprehensive quality improvement system, thereby achieving overall talent development.

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References

- [1] Shao Yuekun. Research on the Pathways for Cultivating Health-Oriented Applied Talents in Vocational Education through “Integration of Physical Education and Health” under the Vision of Healthy China[J]. International Education Forum, 2024, 2(10): 83-88.
- [2] Jia Yingxuan, Yan Shuo. The Connotation, Mode and Path of Talent Training in Higher Vocational Education in the Era of Artificial Intelligence[J]. Education Reform and Development, 2024, 6(10): 100-106.
- [3] Ying Yuan. "vocational education going sea" Under the threshold of Digital trade talent training mode Construct concept, Framework and Elements of explore [J]. Exploration of Educational Management (Exploration of Educational Management), 2024, 2(10):
- [4] Ou Xueying, Yang Weiqing. Optimization and Practical Analysis of Talent Training Mode of Deep Integration of Vocational Education and Production[J]. Education Reform and Development, 2024, 6(8): 260-266.
- [5] Chen Yajuan, Zhang Huili, Qi Yunxia. Research and Practice on the Talent Cultivation Model of Dual Integration of Academic Mentors and Modern Apprenticeship System under the Background of Vocational Education[J]. Advances in Vocational and Technical Education, 2024, 6(4):
- [6] He Xichun. Comparative Study on the Impact of Talent Cultivation Policies on the Quality of Higher Vocational Education[J]. International Education Forum, 2024, 2(6): 175-182.