



# Theoretical and Practical Research on Empowering Vocational Education Through Labor Education

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## Abstract

The digital age has given rise to a career-oriented form of digital labor, fostering the advancement of labor education in vocational colleges toward digitalization. This shift holds significant historical, social, educational, and developmental value. In this context, labor education in vocational colleges is evolving to embrace digitalization, which is crucial for contemporary society, education, and overall development. This article examines the pathways for the digital development of labor education through the lens of Marxist labor theory, fundamental concepts of labor education, the educational attributes of digital technology, and the categorization of vocational education types. Vocational colleges can effectively facilitate the digital transformation of labor education by establishing a cross-disciplinary integrated digital curriculum system, creating digital teaching resources that blend virtual and real-world experiences, enhancing the digital literacy of educators who possess both technical and pedagogical skills, and developing a digital evaluation model that focuses on value-added processes. Research findings indicate that students participating in the experiment achieved a career success score of at least 7.8. Labor education not only improves students' vocational skills and literacy but also enhances their innovative capabilities and awareness of career development, thereby providing robust support for the cultivation of high-quality professional talent.

## Keywords

Digital Labor Education; Vocational Education; School Enterprise Cooperation; Skill Development; Innovation Ability

## 1. Introduction

Continuously improving the adaptability of vocational education is an important channel for cultivating high-level skilled technical talents and optimizing the vocational education personnel system. It is also a key measure to support the modernization of Chinese style education and promote high-quality development of education. This is also an inevitable way to continuously deepen the integration of general education, industry and education, school enterprise cooperation, and meet the lifelong learning needs of the people.

This article aims to explore how labor education empowers vocational education, and demonstrate its impact and effectiveness through theoretical and practical research. Firstly, this article introduces the importance of vocational

education and current research progress; Secondly, it elaborates on the specific methods of constructing engineering practice and labor education practice platforms, including school-enterprise cooperation, modular practical teaching models, and the integration of engineering training and labor education courses; Next, this article describes the design and implementation of the experiment, and demonstrates the impact of labor education on student skill development, cross-border integration of digital courses, simulation of actual work environments under school enterprise cooperation, and cultivation of innovative abilities. Finally, the long-term impact of labor education on students' career development awareness was summarized, emphasizing its important role in vocational education.

## 2. Related Works

Experts have long conducted specialized research on vocational education. McGrath S explored theoretical methods over the past decade and proposed the key competency theory for vocational education and training. He believes that it can provide new ideas for educational transformation and support a broader transformation agenda (McGrath S, 2022). Kovalchuk V I pointed out that technological development requires the digitalization of education to improve the quality of vocational training. Vocational education needs to cultivate professional talents who can adapt to digital technology. This places high demands on the digital literacy of students and teachers to achieve educational goals (Kovalchuk V I, 2023). Li J reviewed research in the fields of vocational education and training, comparative political economy, comparative education research, and international human resource management, exploring the perspectives of different disciplines on policy transfer (Li J, 2023). Allais S explored the challenges faced by the TVET system in sub-Saharan Africa: slow industrialization, scarcity of high-paying technical jobs, lagging economic development, inadequate changes in the labor market, and low quality of education (Allais S, 2022). Young M discussed the development direction of vocational education in the early 21st century through dialogue. He discussed the relationship between career and academic pathways, the significance of technical education, the purpose of vocational qualifications, the role of unions and employers, and the necessity of providing skill pathways for low-educated individuals (Young M, 2022).

Silliman M used the regression discontinuity design of Finland's centralized admission process to study the returns of vocational education and general secondary education in the labor market. The results show that vocational education can increase initial annual income, and this benefit lasts until the age of 30. Life cycle benefits are unlikely to turn negative after retirement (Silliman M, 2022). Dahalan F conducted a systematic literature review and found that research interest in Asia has increased since 2020, mainly focusing on the fields of engineering and healthcare. Research has shown that gamification can improve learner performance, engagement, and motivation, and it is recommended to further study the optimal strategies (Dahalan F, 2024). Kilag O K explored the impact of integrating technology into livelihood education on teacher empowerment and student preparation for a digital future. Research has shown that integrating technology into vocational education can increase student engagement, improve learning outcomes, and personalize teaching (Kilag O K, 2023). Manoharan K has developed a training and guidance model for construction site workers aimed at improving productivity. The key knowledge, skills, and abilities that affect building productivity were identified through qualitative and quantitative methods (Manoharan K, 2023). Mansurjonovich J M explored how to draw on advanced foreign experiences, improve China's vocational education system, and cultivate qualified and competitive talents for the labor market through the introduction of primary, secondary education, and secondary specialized vocational education stages (Mansurjonovich J M, 2022). The current research on vocational education has made some progress, but there are still some bottlenecks. This includes high requirements for the integration of education digitization and technology, and the need to improve the digital literacy of students and teachers.

## 3. Methods

### 3.1 Construction of Engineering Practice and Innovation Practice Platform, Building a Brand for Technical Skill Accumulation and Service

The college has strengthened cooperation with high-tech enterprises and designated robot training bases and intelligent manufacturing collaborative innovation centers as training bases (Didier, N, 2022). At the same time, in response to the smart manufacturing industry in the Yangtze River Delta region, it can continuously improve the quality of the teaching staff by providing talent and technical support for the smart manufacturing industry. The teaching staff has continuously accumulated their own experience and achieved some breakthroughs through the explanation and practice of intelligent manufacturing production lines and technology applications, promoting the development of teaching, scientific research, and talent. Their teaching level is high, just like their teachers. Their level of intelligent manufacturing is also high, which can provide high-quality services for the manufacturing industry in the Yangtze River Delta and establish a good education and service brand (Schmidt, R., 2022).

### 3.2 Implementation of the Integration of Engineering Training and Labor Education Practice in Universities

#### 3.2.1 Engineering training courses

The Engineering Training Center of some colleges in Guangdong is a demonstration center for experimental teaching in Guangdong Province. The center has complete equipment and can meet the needs of more than 300 people conducting practical training and experiments simultaneously. The center mainly undertakes the teaching tasks of "engineering training" for relevant majors in the hospital, with 12 training programs including traditional machining, casting, CNC machining, special machining, and advanced manufacturing technology (Fiaschi, D., 2022). Each training program can be divided into three levels based on the teaching outline, from high to low: basic training, comprehensive training, and innovative training, achieving personalized teaching. These training courses focus on cultivating students' hands-on operation of various equipment and tools, practical operation ability to master basic engineering skills, and innovative consciousness of actively seeking novelty, difference, and change.

#### 3.2.2 Integration of engineering training and labor education

To effectively integrate labor education into the talent cultivation system of vocational colleges, the following measures can be taken: firstly, vigorously promote campus culture and create a labor-oriented campus environment. In vocational schools, it is necessary to integrate the promotion and integration of labor education into school culture. For example, by organizing labor culture and creative activities, inviting model workers and craftsmen to give lectures, and focusing on "labor spirit", various forms of club activities should be carried out to integrate labor education into campus culture. Secondly, it is necessary to strengthen top-level design and establish a coordinated implementation mechanism for labor education collaboration; A scientific curriculum system can be established to strengthen off-campus internships and ensure that students engage in all activities during their studies. It can increase investment in labor education, establish a sound curriculum system and evaluation system, and ensure the smooth implementation of various activities. Thirdly, it is necessary to strengthen the teaching research and teaching of teachers and improve the knowledge integration ability of students.

## 4. Results and Discussion

### 4.1 Experimental Preparation

In order to deeply explore how labor education empowers vocational education, the article designed and implemented a series of experiments. The preparation stage of the experiment includes determining the experimental purpose, designing the experimental plan, selecting participants, and developing an implementation plan. Firstly, the article has clarified that the main purpose of the experiment is to evaluate the impact of labor education on students' vocational skills, professional literacy, and innovation ability. Secondly, the article has designed a detailed implementation plan for multiple experimental components, including labor education courses, digital teaching resources, and simulation of actual work environments.

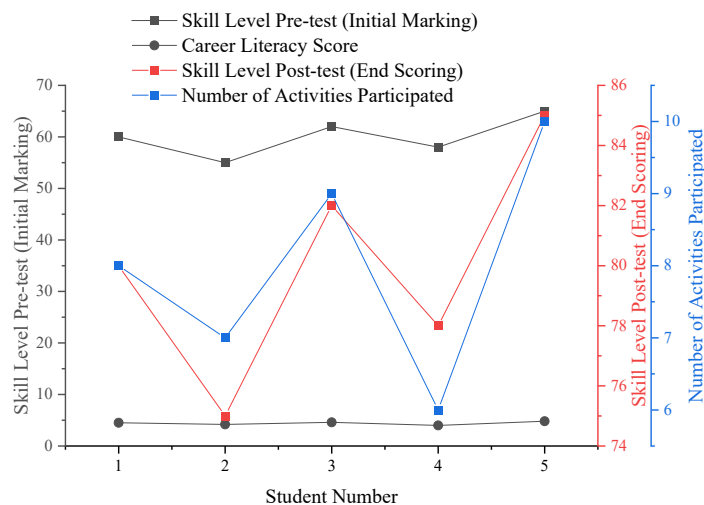


Figure 1. The impact of labor education on student skill development.

## 4.2 Impact of Labor Education on Student Skill Development

In the theoretical and practical research on empowering vocational education through labor education in Figure 1, the article conducted multiple experiments to evaluate the impact of labor education on students. Firstly, the article found through experiments on the impact of labor education on student skill development that students who participate in labor education activities generally show significant improvement in their skill levels.

## 4.3 Effectiveness of Cross-border Integration of Digital Labor Education Courses

As can be seen from the experimental data in Figure 2, students' math course grades from 1 to 5, technology use competency scores and student satisfaction scores ranged from 75 to 85, from 3.5 to 4.5, and from 4.0 to 5, respectively. This indicates that the use of digital technology in labor education not only enhances academic performance, but also enhances students' understanding and ability to use technology.

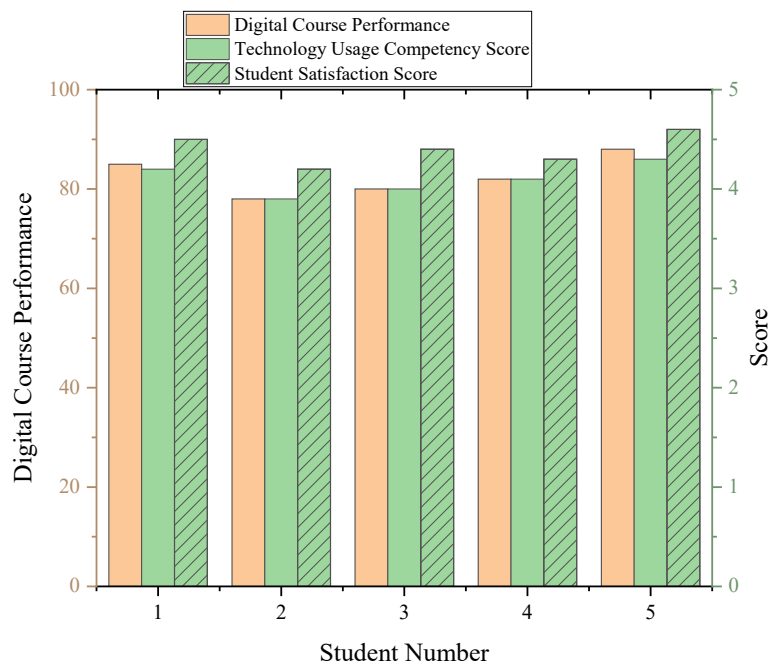


Figure 2. Evaluation of the effectiveness of cross-border integration of digital labor education courses.

## 4.4 Simulation Effect of Actual Working Environment Under School Enterprise Cooperation

The evaluation of the simulation effect of the actual work environment under school-enterprise cooperation shows that students not only improved their skill scores during the internship but also significantly improved their professional attitude scores. This indicates that by simulating a real work environment, students can better understand the actual value of labor and professional responsibility, thereby cultivating a rigorous work attitude and sense of social responsibility, as shown in Figure 3.

The experiment on the impact of labor education on students' innovation ability in Table 1 shows that students participating in labor education show significant improvements in innovation project scores, innovation thinking scores, and innovation attitude scores. This indicates that labor education is not only about imparting skills but more importantly, it cultivates students' innovative spirit and problem-solving ability, enabling them to cope with complex challenges and changes in practical work.

The long-term tracking experiment in Table 2 shows that labor education has a significant long-term impact on students' career development awareness. Through the evaluation of career planning scores, continuous learning scores, and career success scores, the article found that students who participate in labor education exhibit higher awareness and enthusiasm in career development planning and self-improvement, thereby better adapting to and responding to various challenges and opportunities in their careers.

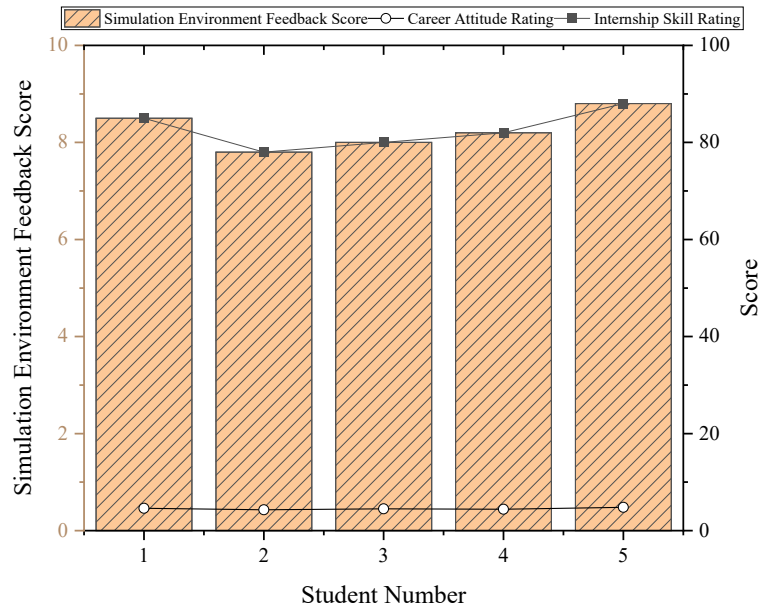


Figure 3. Evaluation of the simulation effect of the actual working environment under school-enterprise cooperation.

Table 1. The impact of labor education on students' innovation ability

Student Number	Innovation Project Score	Innovative Thinking Rating	Innovation Attitude Rating
1	85	4.5	4.6
2	78	4.2	4.3
3	80	4.4	4.5
4	82	4.3	4.4
5	88	4.6	4.8

Table 2. Long-term impact of labor education on students' career development awareness

Student Number	Career Planning Score	Continuous Learning Score	Career Success Score
1	4.5	4.6	8.5
2	4.2	4.3	7.8
3	4.4	4.5	8
4	4.3	4.4	8.2
5	4.6	4.8	8.8

### 5. Conclusions

In the process of implementing the strategy of building a strong education country, on the one hand, the status and role of vocational education continue to be highlighted, increasingly demonstrating the characteristics of the era of high coverage, wide disciplinary fields, and multiple application scenarios. On the other hand, with the new formats, new ideas, and new concepts of the skills society, facing new materials, new industries, and new fields under the new labor formats, this article explores the important role and specific implementation paths of labor education in empowering vocational education through theoretical and practical research. The research results indicate that labor education not only significantly improves students' professional skills and professional qualities, but also demonstrates high technical proficiency and satisfaction in cross-border integrated digital courses.

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## References

- Allais, S. (2022). Skills for industrialization in sub-Saharan African countries: Why is systemic reform of technical and vocational systems so persistently unsuccessful? *Journal of Vocational Education & Training*, 74(3), 475-493.
- Dahalan, F., Alias, N., Shaharom, M. S. N. (2024). Gamification and game-based learning for vocational education and training: A systematic literature review. *Education and Information Technologies*, 29(2), 1279-1317.
- Didier, N. (2022). Are we ready? Labor market transit to the digital economy. *Journal of Adult and Continuing Education*, 28(1), 73-97.
- Fiaschi, D., Tealdi, C. (2022). Young people between education and the labor market during the COVID-19 pandemic in Italy. *International Journal of Manpower*, 43(7), 1719-1757.
- Kilag, O. K., Miñoza, J., Comighud, E., et al. (2023). Empowering teachers: Integrating technology into livelihood education for a digital future. *Excellencia: International Multi-disciplinary Journal of Education (2994-9521)*, 1(1), 30-41.
- Kovalchuk, V. I., Maslich, S. V., Movchan, L. H. (2023). Digitalization of vocational education under crisis conditions. *Educational Technology Quarterly*, 2023(1), 1-17.
- Li, J., Pilz, M. (2023). International transfer of vocational education and training: A literature review. *Journal of Vocational Education & Training*, 75(2), 185-218.
- Manoharan, K., Dissanayake, P., Pathirana, C., et al. (2023). A competency-based training guide model for laborers in construction. *International Journal of Construction Management*, 23(8), 1323-1333.
- Mansurjonovich, J. M. (2022). Current status of the science of informatics and information technologies in the professional education system, existing problems and solutions, principles and content of the science organization. *Galaxy International Interdisciplinary Research Journal*, 10(12), 327-331.
- McGrath, S., Powell, L., Alla-Mensah, J., et al. (2022). New VET theories for new times: The critical capabilities approach to vocational education and training and its potential for theorizing a transformed and transformational VET. *Journal of Vocational Education & Training*, 74(4), 575-596.
- Schmidt, R., Kristen, C., Mühlau, P. (2022). Educational selectivity and immigrants' labor market performance in Europe. *European Sociological Review*, 38(2), 252-268.
- Silliman, M., Virtanen, H. (2022). Labor market returns to vocational secondary education. *American Economic Journal: Applied Economics*, 14(1), 197-224.
- Young, M., Hordern, J. (2022). Does the vocational curriculum have a future? *Journal of Vocational Education & Training*, 74(1), 68-88.