

# Research on Talent Cultivation Mode Based on Industrial Colleges: Taking TCL Ace Industry College of Huizhou Technician Institute as an Example

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**Abstract:** Industrial colleges represent a new form of vocational colleges and are an innovative school-enterprise cooperation model. The main participants in this collaborative construction are industries, enterprises, and schools. In higher vocational education and applied undergraduate programs, the development of industrial colleges has become relatively mature. However, in vocational colleges and technical schools, the construction of industrial colleges is still in its initial stage. There are no mature experiences to refer to. Therefore, determining a talent cultivation mode that is practical and distinct from higher vocational and applied undergraduate education is of significant theoretical and practical importance for vocational colleges. This paper aims to explore the current status and existing problems of the talent cultivation mode in industrial colleges of vocational colleges. Taking the Intelligent Design and Manufacturing TCL Ace Industry College, jointly built by Huizhou Technician Institute and TCL Group, as an example, it discusses the research on talent cultivation mode in the innovative cooperation of industrial colleges, providing theoretical support and practical guidance for promoting the construction and development of industrial colleges.

**Keywords:** Specialized Industrial College; Talent Cultivation Mode; Industry-Education Integration; Intelligent Manufacturing

## 1. Introduction

Industrial colleges represent a new form of vocational colleges and an innovative model of

school-enterprise cooperation [1]. They serve as important carriers and platforms for vocational education to implement industry-education integration and play a vital role in cultivating high-quality technical and skilled talents and serving regional economic and social development [2]. In recent years, the construction of industrial colleges in higher vocational colleges and applied undergraduate colleges in China has become relatively mature, achieving remarkable results [3-5]. However, the construction of industrial colleges in secondary vocational schools is still in its initial exploratory stage, lacking mature experiences to draw upon [6]. Therefore, developing a talent cultivation model for industrial colleges at the secondary vocational level that aligns with industry and enterprise needs and differentiates from higher vocational and applied undergraduate education is of significant theoretical and practical importance for promoting the construction of industrial colleges in secondary vocational schools [7]. Currently, research on the talent cultivation model of industrial colleges in vocational schools mainly focuses on the following aspects: First, studies on the positioning of talent cultivation goals in industrial colleges, exploring how to scientifically and rationally set talent cultivation goals based on industry development needs and job competency requirements [8]. Second, research on curriculum system development in industrial colleges, investigating how to organically integrate industry and enterprise professional standards and vocational skill level standards into the curriculum system, achieving the alignment of professional course content with production processes [9]. Third, research on teaching model innovation in industrial colleges, examining the application of work-

study alternation, project-based teaching, modern apprenticeship, and other teaching models in talent cultivation in industrial colleges [10]. However, these studies primarily concentrate on the higher vocational and applied undergraduate levels, and the exploration of the distinctive talent cultivation in secondary vocational industrial colleges is not sufficiently in-depth, necessitating further theoretical and practical research.

This paper takes the Intelligent Design and Manufacturing TCL Ace Industry College, jointly built by Huizhou Technician Institute and TCL Group, as an example to investigate the talent cultivation model under the innovative cooperation of industrial colleges in secondary vocational schools, aiming to provide theoretical support and practical guidance for promoting the construction and development of industrial colleges in secondary vocational education.

## **2. Based on the Practical and Application-Oriented Talent Training Model of the Industrial College**

The talent training model of industrial colleges is distinctively characterized by its practical and application-oriented approach, emphasizing hands-on experience, industry-relevant skills, and real-world applications. This model is designed to bridge the gap between theoretical knowledge and practical skills, ensuring that graduates are not only academically proficient but also well-prepared to meet the specific demands of the intelligent manufacturing industry.

### **2.1 Practical Training and Industry-Relevant Curriculum**

One of the core features of the industrial college talent training model is the integration of practical training into the curriculum. By incorporating industry-relevant projects, case studies, and hands-on exercises, students are exposed to real-world challenges and scenarios, enabling them to develop practical skills and problem-solving abilities. The curriculum is designed in collaboration with industry experts and professionals, ensuring its relevance and alignment with current industry trends and practices.

### **2.2 School-Enterprise Cooperation and Work-Integrated Learning**

School-enterprise cooperation is a key component of the talent training model in industrial colleges. Through partnerships with industry leaders, enterprises, and research institutions, students have the opportunity to engage in work-integrated learning experiences, such as internships, apprenticeships, and collaborative projects. This cooperation facilitates the exchange of knowledge, expertise, and resources between academia and industry, enriching the learning environment and enhancing the practical relevance of the education provided.

### **2.3 Emphasis on Innovation and Technological Advancement**

The intelligent manufacturing industry is characterized by rapid technological advancements and innovation. Therefore, the talent training model of industrial colleges places a strong emphasis on fostering innovation, creativity, and technological proficiency among students. Through research projects, innovation challenges, and technology-driven courses, students are encouraged to explore new ideas, develop innovative solutions, and acquire advanced technological skills, preparing them to contribute to the continuous advancement and competitiveness of the industry.

### **2.4 Continuous Professional Development and Lifelong Learning**

Recognizing the dynamic nature of the intelligent manufacturing industry and the evolving demands for specialized skills, the talent training model of industrial colleges emphasizes the importance of continuous professional development and lifelong learning. By providing opportunities for further education, training, and professional certification, industrial colleges enable graduates to stay abreast of industry developments, expand their knowledge and skills, and adapt to changing industry requirements throughout their careers.

## **3. Practice in the Construction of Industrial Colleges**

The construction and development of industrial colleges involve a multifaceted approach that requires collaborative efforts from various stakeholders, including educational institutions, industry partners enterprises. This section

delves into the practical aspects of establishing and operating industrial colleges, highlighting key practices and strategies that have been implemented to promote their successful development.

### **3.1 Collaborative Framework and Partnership Building**

The establishment of industrial colleges necessitates a strong collaborative framework involving partnerships between educational institutions and industry stakeholders. Engaging in dialogue, fostering mutual understanding, and building trust among stakeholders are crucial steps in establishing effective partnerships. Through joint planning, resource sharing, and collaborative decision-making, industrial colleges can leverage the expertise and resources of both academia and industry to create a synergistic environment conducive to talent cultivation.

### **3.2 Curriculum Design and Development**

The design and development of the curriculum in industrial colleges are tailored to meet the specific needs and requirements of the intelligent manufacturing industry. Collaborative efforts involving educators, industry experts, and curriculum developers are essential to ensure that the curriculum is relevant, up-to-date, and aligned with industry standards and practices. Emphasizing practical training, hands-on experience, and industry-relevant projects, the curriculum aims to equip students with the necessary knowledge, skills, and competencies to excel in their respective fields.

### **3.3 Infrastructure and Facility Planning**

The construction of modern, state-of-the-art facilities and infrastructure is a vital aspect of the development of industrial colleges. Investing in advanced technologies, equipment, and facilities enables industrial colleges to provide students with access to cutting-edge resources and learning environments. By creating a simulated industrial setting, students can gain practical experience and hands-on training, preparing them for the challenges and demands of the intelligent manufacturing industry.

### **3.4 Talent Cultivation and Development Programs**

To ensure the successful cultivation and development of talent, industrial colleges implement a range of talent cultivation and development programs. These programs may include internship opportunities, apprenticeships, mentorship programs, and professional development workshops. By providing students with opportunities to engage with industry professionals, gain real-world experience, and develop professional networks, industrial colleges facilitate the transition from education to employment and support the continuous growth and development of their graduates.

### **3.5 Quality Assurance and Continuous Improvement**

Ensuring the quality and effectiveness of talent cultivation in industrial colleges requires robust quality assurance mechanisms and continuous improvement processes. Implementing rigorous assessment and evaluation procedures, soliciting feedback from stakeholders, and conducting regular reviews and revisions of the curriculum and programs are essential practices to maintain and enhance the quality of education and training provided by industrial colleges.

## **4. Discussion**

The emergence of industrial colleges as a unique form of vocational education has presented a new paradigm for talent cultivation, especially within the context of the intelligent manufacturing industry. This innovative approach to education is characterized by its school-enterprise cooperation model, which aims to bridge the gap between academia and industry, and to equip students with the practical skills and knowledge required to meet the evolving demands of the industry.

One of the key features of industrial colleges is their practical and application-oriented talent training model. Unlike traditional vocational education programs, which often focus on theoretical knowledge, industrial colleges prioritize hands-on experience, industry-relevant curriculum, and real-world applications. This approach ensures that graduates are not only academically proficient but also well-prepared to tackle the specific challenges and tasks encountered in the intelligent manufacturing industry.

The curriculum in industrial colleges is

designed in collaboration with industry experts and professionals, ensuring its relevance and alignment with current industry trends and practices. By incorporating industry-relevant projects, case studies, and hands-on exercises, students are exposed to real-world challenges and scenarios, enabling them to develop practical skills, problem-solving abilities, and critical thinking skills. This industry-driven curriculum is instrumental in fostering a deeper understanding of the intelligent manufacturing processes and technologies, and in preparing students to contribute effectively to the continuous advancement and competitiveness of the industry.

School-enterprise cooperation is a cornerstone of the talent training model in industrial colleges. Through partnerships with industry leaders, enterprises, and research institutions, students have the opportunity to engage in work-integrated learning experiences, such as internships, apprenticeships, and collaborative projects. This cooperation facilitates the exchange of knowledge, expertise, and resources between academia and industry, enriching the learning environment and enhancing the practical relevance of the education provided.

The intelligent manufacturing industry is characterized by rapid technological advancements and innovation. Therefore, the talent training model of industrial colleges places a strong emphasis on fostering innovation, creativity, and technological proficiency among students. Through research projects, innovation challenges, and technology-driven courses, students are encouraged to explore new ideas, develop innovative solutions, and acquire advanced technological skills. This focus on innovation is essential for driving the continuous advancement and competitiveness of the intelligent manufacturing industry.

Continuous professional development and lifelong learning are also emphasized in the talent training model of industrial colleges. Recognizing the dynamic nature of the intelligent manufacturing industry and the evolving demands for specialized skills, industrial colleges provide opportunities for further education, training, and professional certification. This enables graduates to stay abreast of industry developments, expand their knowledge and skills, and adapt to changing

industry requirements throughout their careers. In conclusion, the talent cultivation model in industrial colleges represents a promising and innovative approach to vocational education, offering a practical and effective solution to the challenges and demands of the intelligent manufacturing industry. By integrating practical training, fostering school-enterprise cooperation, emphasizing innovation, and promoting continuous professional development, industrial colleges offer a comprehensive and adaptive approach to talent cultivation in vocational education settings. As industrial colleges continue to evolve and expand, their role in shaping the future of vocational education and contributing to the sustainable development of the intelligent manufacturing industry is expected to become increasingly significant.

## 5. Conclusion

The emergence of industrial colleges as a specialized form of vocational education represents a transformative approach to talent cultivation, particularly within the context of the intelligent manufacturing industry. Through their innovative school-enterprise cooperation model, industrial colleges have demonstrated a commitment to bridging the gap between academia and industry, fostering practical skills, and preparing students to meet the evolving demands of the industry.

The practical and application-oriented talent training model employed by industrial colleges emphasizes hands-on experience, industry-relevant curriculum, school-enterprise cooperation, innovation, and continuous professional development. These key features not only enhance the relevance and effectiveness of the education provided but also contribute to the development of versatile, skilled, and industry-ready professionals capable of contributing to the continuous advancement and competitiveness of the intelligent manufacturing industry.

In practice, the successful construction and development of industrial colleges require a collaborative framework, effective partnership building, curriculum design tailored to industry needs, investment in modern infrastructure and facilities, and robust quality assurance mechanisms. By implementing these practices and strategies, industrial colleges can create a synergistic environment conducive to talent

cultivation, ensuring the alignment of education with industry requirements and facilitating the seamless transition of graduates into the workforce.

Looking forward, the ongoing development and refinement of the talent cultivation model in industrial colleges will continue to be a focal point, necessitating continuous innovation, adaptation to technological advancements, and responsiveness to industry changes. As industrial colleges evolve and expand, their role in shaping the future of vocational education and contributing to the sustainable development of the intelligent manufacturing industry is expected to become increasingly significant.

In conclusion, the construction and development of industrial colleges represent a promising and innovative approach to vocational education, offering a practical and effective solution to the challenges and demands of the intelligent manufacturing industry. By fostering collaboration, innovation, and continuous improvement, industrial colleges are well-positioned to play a pivotal role in cultivating the next generation of skilled professionals and driving the ongoing success and competitiveness of the intelligent manufacturing industry.

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