

The "Yanpei Special-order Class" Model of Integrated Secondary and Higher Vocational Education: The Cradle of Innovative Skilled Talents in Wenzhou Packaging and Printing Industry

Peijie Chen¹, Jun Jiang¹, Zhijian Xiao¹, Guan Wang²

¹Zhejiang Dongfang Polytechnic, Wenzhou, China

²Wenzhou Lingang Packaging Co., Ltd., Wenzhou, Zhejiang, 325000, China

Abstract

This paper focuses on the Wenzhou packaging and printing industry and deeply explores the cultivation of innovative skilled talents through the "Yanpei Special-order Class" model of integrated secondary and higher vocational education. Through case analysis, comparative research, and investigation methods, a cultivation model with a structure of multi-party collaborative education, personalized curriculum system, and double-qualified teaching staff is constructed. In practice, this model has significantly improved students' skills and employment quality and has been highly recognized by enterprises. However, during the implementation process, challenges such as the integration of educational resources, the adaptability of talent cultivation, and changes in the external environment are faced. This research provides a new path and reference for vocational education talent cultivation and industrial development.

Keywords

Integrated secondary and higher vocational education; Yanpei Special-order Class; Wenzhou packaging and printing industry; Innovative skilled talents.

1. Introduction

In the wave of economic globalization and industrial upgrading, the Wenzhou packaging and printing industry, as one of the local traditional pillar industries, is facing unprecedented challenges and opportunities. On the one hand, with the rapid development of digital and intelligent technologies and the increasing demands of consumers for the quality, design, and environmental performance of packaging products, the industry urgently needs to transform towards high-end, intelligent, and green. On the other hand, the intensification of industry competition has made enterprises more eager for innovative skilled talents. Such talents not only need to master solid professional knowledge and skills but also should possess innovative thinking, practical ability, and good professional qualities. However, the current talent cultivation situation in the Wenzhou packaging and printing industry is not optimistic. The traditional vocational education model has difficulties in meeting the diverse needs of the industry for innovative skilled talents due to problems such as poor connection between secondary and higher vocational education and insufficient depth of school-enterprise cooperation. In this context, the "Yanpei Special-order Class" model of integrated secondary and higher vocational education has emerged. Guided by Huang Yanpei's vocational education thought, this model realizes the precise connection between talent cultivation and enterprise needs by integrating secondary and higher vocational education resources and deepening school-enterprise cooperation. Its significance lies not only in supplying a large number of high-quality innovative skilled talents for the Wenzhou packaging and printing industry and promoting the transformation and upgrading of the industry but also in exploring a new path of vocational education talent cultivation with regional characteristics and demonstration

effects, providing references for the development of vocational education in other regions and industries.

2. The Connotation of the "Yanpei Special-order Class" Model

The "Yanpei Special-order Class" model takes the vocational education thought of the famous educator Huang Yanpei as the core, emphasizing "combining hands and brains, integrating learning and doing", and "parallel development of theory and practice, and equal emphasis on knowledge and skills". This model has distinct order-based characteristics. Colleges and enterprises sign talent cultivation orders and formulate personalized talent cultivation plans according to enterprise needs. Order-based talent cultivation ensures the pertinence and practicality of talent cultivation. Enterprises are deeply involved in the whole process of talent cultivation, integrating actual enterprise needs and production standards into curriculum settings, teaching contents, and practical teaching links. At the same time, it focuses on cultivating students' specialties and tapping students' individual potentials. According to students' interests and talents, it provides personalized development paths, enabling students to form unique competitive advantages on the basis of mastering general skills. In addition, this model is practice-oriented. Through teaching methods such as work-study alternation and project-driven, students can learn and practice in a real work environment, improving their practical ability and ability to solve practical problems.

3. Analysis of the Current Situation of the Wenzhou Packaging and Printing Industry

3.1. Industrial Development Scale and Trend

After years of development, the Wenzhou packaging and printing industry has formed a large industrial scale. At present, Wenzhou has numerous packaging and printing enterprises, covering multiple fields such as publication printing, packaging and decoration printing, and other printed matter printing, with obvious industrial cluster effects. Taking Longgang City as an example, as the Printing City of China, it has formed a complete industrial chain from plate making, printing, post-press processing to raw material supply, and its products are sold at home and abroad. In recent years, with the changes in domestic and foreign market demands, the Wenzhou packaging and printing industry has shown a steady growth trend. However, in the process of industrial development, it also faces a series of challenges. On the one hand, factors such as fluctuations in raw material prices and rising labor costs have compressed the profit margins of enterprises. On the other hand, the increasingly fierce industry competition has made enterprises face competition pressure from domestic and foreign counterparts. In addition, with the continuous improvement of environmental protection requirements, green printing has become an inevitable trend in the development of the industry, which has put forward higher requirements for the technological innovation and transformation and upgrading of Wenzhou packaging and printing enterprises.

3.2. Technological Innovation Needs

In the digital and intelligent era, the technological innovation needs of the Wenzhou packaging and printing industry are becoming more and more urgent. First, intelligent production has become an important direction in the development of the industry. Enterprises need to introduce advanced automatic and intelligent printing equipment and production management systems to improve production efficiency and product quality. For example, some enterprises have begun to use robots for the handling and sorting of packaging and printing, realizing the automation of the production process. Second, the research and development and application of green printing technology have become the consensus of the industry. Enterprises need to

develop environmentally friendly printing materials and inks, improve printing processes, and reduce environmental pollution. In addition, the growth of personalized customization needs has prompted enterprises to strengthen the application of digital design technology. Through technologies such as big data and cloud computing, they can quickly respond to customer needs and produce personalized products.

3.3. Talent Demand Characteristics

With the transformation and upgrading of the Wenzhou packaging and printing industry, the talent demand of enterprises has shown diversified and high-end characteristics. First, enterprises need interdisciplinary composite talents. Such talents not only need to master packaging and printing professional knowledge but also need to understand related fields such as marketing, design aesthetics, and information technology, and be able to provide comprehensive solutions for enterprises. Practical ability and innovation ability have become important criteria for enterprises to select talents. Enterprises hope to recruit talents who can quickly adapt to work positions, skillfully operate advanced equipment, and solve practical problems in the production process. At the same time, talents with innovative thinking and innovation ability can bring new technologies and concepts to enterprises and promote the technological innovation and product upgrading of enterprises. In addition, good professional qualities such as a sense of responsibility, teamwork spirit, and communication ability are also the qualities that enterprises value.

4. The Structure and Implementation of the "Yanpei Special-order Class" Model

4.1. Model Structure

4.1.1. Multi-party Collaborative Education Mechanism

The effective operation of the "Yanpei Special-order Class" model of integrated secondary and higher vocational education depends on the collaborative cooperation of the government, colleges, enterprises, and industry associations. In the process of project cooperation and implementation, the government plays an important role in policy guidance, financial support, and overall coordination. By issuing relevant policies, it encourages enterprises to participate in vocational education and provides support such as tax preferences and financial subsidies for school-enterprise cooperation. Vocational colleges, as the main body of high-skilled talent cultivation, are mainly responsible for formulating talent cultivation plans, organizing teaching implementation, and student management. Enterprises and industries are also an important part of integrated talent cultivation. They mainly participate in the revision of talent cultivation plans, the construction of vocational college training teaching, the evaluation of skilled talent assessment, and finally provide internship and employment positions.

4.1.2. Personalized Curriculum System

Taking the "Yanpei Special-order Class" jointly opened by a vocational school in Wenzhou and a local packaging and printing enterprise as an example, the construction of the curriculum system fully reflects personalization and practicality. In the public basic courses, in addition to opening regular courses such as Chinese, mathematics, and English, cultural literacy courses related to the packaging and printing industry, such as the history of printing and packaging culture, are also added to enhance students' cultural heritage.

Practical courses occupy an important position in the entire curriculum system. Through work-study alternation, enterprise internships, graduation projects, and other links, students can consolidate their learned knowledge and improve their practical ability in practice. For example, after students complete the basic course learning in the first academic year, they start a half-year internship in the enterprise in the second academic year, participate in the actual

production projects of the enterprise, find problems during the internship, and return to school to continue the subsequent course learning with the problems, realizing the organic combination of theory and practice.

4.1.3. Construction of Double-qualified Teaching Staff

The double-qualified teaching staff is the key to ensuring the teaching quality of the "Yanpei Special-order Class". Professional teachers in the school should not only have solid theoretical knowledge but also rich practical experience. The school improves teachers' practical ability by sending teachers to enterprises for temporary positions and participating in enterprise technology research and development projects. At the same time, it actively introduces high-level talents with enterprise work experience to enrich the teaching staff.

4.2. Implementation Path

4.2.1. Integration of Enrollment and Recruitment

The "Yanpei Special-order Class" adopts the method of integrating enrollment and recruitment, realizing the goal of students' employment upon enrollment. Colleges and enterprises jointly formulate enrollment and recruitment plans and jointly carry out enrollment publicity and interview work. During the enrollment process, detailed information about the cultivation model, employment prospects, and enterprise treatment of the order class is introduced to students and parents to attract students to apply.

After students enroll, they sign employment agreements with enterprises, clarifying the rights and obligations of both parties. Enterprises provide certain living subsidies and scholarships for students to encourage them to study hard. For example, a packaging and printing enterprise in Wenzhou cooperates with a local vocational school and provides a living subsidy of 5,000 yuan per year for students in the order class and sets up excellent student scholarships, which are awarded according to students' academic performance and practical performance. This method of integrating enrollment and recruitment not only solves the employment concerns of students but also reserves high-quality talents for enterprises.

4.2.2. Teaching Process Implementation

Taking the "Yanpei Special-order Class" of Longgang Vocational School as an example, in the teaching process, multiple teaching methods such as work-study alternation and project teaching are adopted. Work-study alternation means that students alternate between school learning and enterprise practice. During school learning, mainly theoretical knowledge learning and school training are carried out; during enterprise practice, students go deep into the production line of enterprises and participate in the production and management of actual projects.

The project teaching method takes the actual project of the enterprise as the carrier and integrates the teaching content into the project. Students learn knowledge and skills in the process of completing the project. For example, in the packaging design course, the teacher introduces the real packaging design project of the enterprise, and students complete the project tasks in groups, from market research, design conception, scheme production to final result display, simulating the actual work process of the enterprise throughout. During the project implementation process, teachers and enterprise part-time teachers jointly guide students and solve the problems encountered by students in a timely manner. Through this teaching method, students not only master professional knowledge and skills but also improve their teamwork ability, communication ability, and ability to solve practical problems.

4.2.3. Assessment and Evaluation System

To ensure the quality of talent cultivation, the "Yanpei Special-order Class" has constructed a diversified assessment and evaluation system. The assessment content includes not only students' mastery of theoretical knowledge but also the evaluation of students' practical ability,

innovation ability, and professional qualities. For example, in the course assessment of an order class in a vocational school in Wenzhou, the usual performance, practical operation performance, and final exam performance are comprehensively evaluated according to a certain proportion. The usual performance includes students' classroom performance, homework completion, group project participation, etc.; the practical operation performance is evaluated according to students' performance in enterprise internships and school training; the final exam focuses on examining students' comprehensive application ability of theoretical knowledge.

5. The Effect of Cultivating Innovative Skilled Talents

5.1. Improvement of Students' Skills

Through the cultivation of the "Yanpei Special-order Class" model, students' professional skills have been significantly improved. In various professional skills competitions, students in the order class have won many awards. For example, in the Printing Media Technology event of the National Vocational College Skills Competition, students in the order class of a vocational school in Wenzhou have won awards many times. Students have demonstrated solid professional knowledge and proficient operation skills in the competitions and have been highly recognized by judges and peers. In terms of obtaining vocational qualification certificates, the pass rate of students in the order class is also much higher than that of ordinary classes. Since the curriculum system is closely connected with the vocational qualification standards, students can prepare for the exams simultaneously during the learning process and can successfully obtain relevant vocational qualification certificates. For example, in the examinations of packaging designers, printing operators, and other vocational qualification certificates, the pass rate of students in the order class has reached more than 90%, laying a solid foundation for students' future employment.

5.2. Improvement of Employment Quality

The "Yanpei Special-order Class" model realizes the precise connection between talent cultivation and enterprise needs, and the employment quality of students has been significantly improved. According to statistics, the employment matching rate of students in the order class has reached more than 95%, much higher than that of ordinary vocational school graduates. After graduation, students can directly enter the cooperative enterprises to work in positions related to their majors, realizing the application of what they have learned. In terms of salary 待遇, the starting salary of students in the order class is generally higher and has good career development prospects. Since students have accumulated rich practical experience during their studies, possess strong professional skills and professional qualities, and can quickly adapt to the work requirements of enterprises and create value for enterprises, they are favored by enterprises. For example, a packaging and printing enterprise in Wenzhou provides a starting salary for graduates of the order class that is about 20% higher than that of ordinary new employees and formulates personalized career development plans for them, encouraging them to be promoted and developed in the enterprise.

5.3. Enterprise Satisfaction

Enterprises are highly satisfied with the talents cultivated by the "Yanpei Special-order Class". By participating in the whole process of talent cultivation, enterprises can cultivate talents who meet the job requirements according to their own needs, reducing the recruitment and training costs of enterprises. For example, the person in charge of a packaging enterprise said that after students in the order class enter the enterprise, they can quickly adapt to the work environment and master job skills, saving a lot of training time and costs for the enterprise. At the same time, enterprises have established long-term and stable cooperative relationships with colleges, can

obtain the latest industry technology and talent information in a timely manner, and provide support for the technological innovation and development of enterprises. In addition, through participating in talent cultivation, enterprises have enhanced their social image and popularity and attracted more excellent talents to join.

6. Challenges and Coping Strategies

The "Yanpei Special-order Class" of integrated secondary and higher vocational education faces a series of challenges, including difficulties in integrating educational resources. For example, the connection of curriculum systems between secondary and higher vocational colleges is not good, with phenomena such as repeated or disjointed curriculum content. Some professional basic courses in secondary vocational schools are repeated in higher vocational schools, and some courses lack transitions, affecting students' learning. There are obvious obstacles to the sharing of school-enterprise resources. Enterprises are difficult to open equipment and materials due to business secrets and production tasks, while the courses and equipment in schools are obsolete and cannot meet the talent cultivation needs of enterprises. The distribution of resources among regions and colleges is uneven and difficult to coordinate. Colleges in developed regions have obvious resource advantages, while those in underdeveloped regions are weak. There are large differences in management systems and teaching concepts, and cross-regional cooperation is not easy. There are also problems with the adaptability of talent cultivation. The industry develops rapidly and talent needs change. The adjustment of the cultivation plan of the order class lags behind. Courses such as emerging digital printing and green packaging materials application have not been updated in a timely manner. It is difficult to implement personalized cultivation. There are many students and limited teaching staff, and it is difficult to fully tap the specialties of some students. The cultivation of professional qualities is insufficient. Students lack a sense of responsibility, cooperation, and communication abilities and have difficulty adapting to the enterprise environment. In addition, there is an impact from changes in the external environment. The industry is transforming towards high-end, intelligent, and green. The original cultivation orientation of the order class is difficult to meet the needs of high-end technology and composite talents. With the rapid development of science and technology, artificial intelligence and other technologies are widely used in the packaging and printing field, and the teaching content and methods of the order class are not updated in a timely manner. Policies are constantly adjusted, and if talent cultivation does not adapt in a timely manner, it will face risks. Strengthen professional quality education and integrate it into curriculum, practice, and campus culture construction. Finally, enhance the adaptability. Establish an early warning mechanism for industrial structure adjustment, cooperate with industry associations and enterprises, plan majors and courses in advance. Increase teacher training, encourage teachers to participate in academic activities and enterprise practice, and introduce enterprise talents as part-time teachers. Pay attention to policy dynamics, set up a group to interpret policies, adjust development strategies according to requirements, and strive for policy support.

7. Fund Projects

1. Employment Education Project of Supply and Demand Docking of the Ministry of Education: Research on the Cultivation of Skilled Talents through School-Enterprise Cooperation from the Perspective of the Integration of Industry and Education, Project Number: 2023122987006
2. Employment Education Project of Supply and Demand Docking of the Ministry of Education: Research on Cultivating Innovative Skilled Talents through the "Yanpei Special-order Class" Model of Integrated Secondary and Higher Vocational Education, Project Number: 2023122908436

3. The Second Batch of Teaching Reform Projects of Zhejiang Higher Vocational Education during the "14th Five-Year Plan": Research and Practice on the New-Quality Teaching Reform of the Art Design Specialty Group Empowered by AIGC in Vocational Colleges, Project Number: jg20240290

References

- [1] WANG Pengli, QUAN Chunfeng. Exploring the Integrated Secondary and Higher Vocational Education Talent Cultivation of the Automobile Major Taking the "Group-style" Education Talent Assistance as an Opportunity [J]. *Automobile Maintenance Technician*, 2024, (24): 62-63.
- [2] HUANG Jiahong. Dilemmas, Attributions and Optimization Paths of the Construction of the Integrated Secondary and Higher Vocational Education Curriculum System [J]. *Vocational Education Development Research*, 2024, (04): 61-70.
- [3] LI Peng. Research on the Teaching Connection Strategies of the Electrical Automation Major in the Context of Regional Integrated Secondary and Higher Vocational Education [J]. *The Road to Success*, 2024, (33): 113-116.
- [4] SUN Haitao, LI Mucheng. Development and Design of the Quality Evaluation Standards for the Integrated Secondary and Higher Vocational Education Talent Cultivation——Taking the Reserve Talents of "Outstanding Kindergarten Teachers" in Zhejiang as an Example [J]. *Journal of Ningbo Institute of Education*, 2024, 26(05): 9-14.