

Construction of intelligent construction industry-education integration training base based on comprehensive education and training by combining posts, courses, competitions and certificates

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Abstract

Under the dual background of on-the-job courses, competitions, and certification, as well as industry-education integration, the construction of intelligent building training bases is particularly important. This paper integrates school-enterprise resources to build a comprehensive training platform that combines teaching, research, production, and services, aiming to meet the demand for high-quality technical and skilled talents in the intelligent building technology cluster. The construction of the training base not only focuses on basic skills training but also emphasizes scientific research innovation, social services, and the simulation of real production environments to enhance students' overall abilities. Through deep cooperation with enterprises, the training base achieves alignment between teaching content and actual enterprise needs, improving students' employability and entrepreneurial capabilities. Additionally, the training base provides rich learning materials and practical environments through modular practice project development and resource library construction, fostering students' abilities in digital design, industrialized component manufacturing, and intelligent construction and management. The development of the base not only enhances the quality of intelligent building talent cultivation but also provides strong talent support for regional economic development and industrial upgrading.

Keywords

Integration Of Industry And Education; Prefabricated Building; Post-Course Competition Certificate; Intelligent Construction Talent Training; Practical Training Base Construction

1. Introduction

1.1 Purpose and significance

The State Council issued the "National Vocational Education Reform Implementation Plan" (Vocational Education 20 Measures), which states: to increase policy guidance and fully mobilize the enthusiasm of all parties for deepening vocational education reform and innovation, driving governments at all levels, enterprises, and vocational colleges to build a number of high-level vocational education training bases that share resources and integrate practical teaching, social training, real production in enterprises, and social technical services. It encourages vocational colleges to construct or co-build on-campus training bases with enterprises, enhancing the construction of key majors and the level of talent cultivation through school-enterprise cooperation. This provides a new path for the construction of practical training bases in higher vocational colleges, promoting the integration of industry and education in collaborative talent development.

In April 2021, the National Vocational Education Conference proposed to promote the integration of "positions, courses, competitions, and certificates" to improve educational quality. In October of the same year, the General Office of the Central Committee of the Communist Party of China and the General Office of the State Council pointed out in their "Opinions on Promoting High-Quality Development of Modern Vocational Education" that it is necessary to improve the comprehensive talent cultivation mechanism of "positions, courses, competitions, and certificates." How to integrate the construction of vocational training bases with positions, courses, competitions, and certificates is an urgent topic for in-depth research by higher vocational colleges.

In July 2020, the Ministry of Housing and Urban-Rural Development and thirteen other departments jointly issued the "Guidelines for Promoting the Synergistic Development of Intelligent Construction and Building Industrialization." It clearly states that by 2025, China will have basically established a policy and industrial system for the synergistic development of intelligent construction and building industrialization. With the upgrading of the construction industry and the promotion of new technologies, significant changes have occurred in the construction sector. We need to seriously consider how construction education in the new era should proceed? How should practical training bases be built? Current talent cultivation in the construction field must be closely integrated with industry transformation and trends in new building technologies to truly produce talents that meet market demands.

To sum up, under the background of integrating education and training based on positions, courses, competitions and certificates, and integrating industry and education for collaborative education, how to build an intelligent construction training base that starts from the needs of job skills, refines the knowledge, ability and quality requirements that students need to master, reconstruct the curriculum system, and play the role of "linker" of industry and education in skills competitions.

1.2 Research status

Sichuan Open University proposes that higher vocational colleges should uphold standard leadership and promote the integration of "positions, courses, competitions, certificates, and projects" to enhance the adaptability of vocational education. Based on development needs and student characteristics, it explores tiered and categorized training; adheres to the organic integration of "positions, courses, competitions, certificates, and projects," deepens reforms in talent cultivation models, and aims to cultivate more high-quality technical and skilled talents, master craftsmen, and national artisans.

Huzhou Vocational and Technical College has put forward the specific practice of the "integration of posts, courses, competitions and certificates" talent training model for civil engineering majors. The talent training of the civil engineering technology major cluster mainly corresponds to key positions in the digital design, intelligent production, intelligent construction, smart management and maintenance stages throughout the entire life cycle of the construction industry chain.

Harbin Vocational and Technical College believes that in the practice process, the school-enterprise co-built training laboratory under the background of vocational education and industry integration faces various challenges. It analyzes the necessity of domestic vocational colleges in carrying out educational reform, and puts forward a series of measures for school-enterprise co-built training laboratory under the background of vocational education and industry integration.

According to the requirements of industrial post skills, Wuxi Institute of Technology and Vocational Education has explored the construction plan of practical training base and built an integrated practical training platform integrating "education and teaching-scientific research and development-technical service-skill training-post production-quality cultivation-entrepreneurship incubation".

The above-mentioned higher vocational colleges have fully explored the mode of talent cultivation by post-course competition and certificate, carried out the integration of industry and education, and improved the quality of students' technical skills training. However, they have not considered the integration of multiple elements such as post-course competition and certificate + industry and education integration in the process of construction of training bases.

Based on this, relying on the new vocational education law, we aim to create an intelligent construction training base for the new era of vocational education. We will build an intelligent construction training platform and a quality system for talent cultivation, further solidifying the effectiveness of high-tech skills training. Our goal is to establish a leading intelligent construction industry-education integration training base within the province and at the national level, setting a benchmark and demonstrating leadership among higher vocational colleges.

To sum up, it can be seen that the construction of intelligent construction training base under the mode of "post-course competition certificate + industry-education integration" is an educational innovation practice with far-reaching significance.

2. Research methods and steps

2.1 Research plan and ideas

Referring to the national "Directory of Vocational Education Specialties" and relevant standards for laboratory construction, based on the professional training concept of traditional + intelligent construction, and in line with the integration model of "job certification competition course," this initiative introduces new technologies such as BIM, virtual simulation, big data, artificial intelligence, cloud computing, and the Internet of Things. It covers four modules: safe construction experience, smart construction experience, prefabricated construction training, and comprehensive training in building decoration techniques, aiming to create a comprehensive practical base for the School of Civil Engineering.

The construction idea of the construction center of the School of Architecture and Engineering is divided into four steps:

(1) Based on industry analysis, the target positioning of professional groups should be defined

Based on the current development of the industry, analyze the employment needs of enterprises and combine them with the training positioning of this major to output new talents who have the talent ability requirements of their original majors. At the same time, expand their ability to move towards intelligent construction and cultivate compound talents in the direction of intelligent construction, so as to realize the dual training of engineering construction and information technology application.

(2) Reconstruct the curriculum system of professional groups based on target positioning

Based on the training objectives of professional groups, the new curriculum system is restructured, digital and intelligent technologies are integrated, and new technology courses that match industry needs and enterprise employment requirements are encouraged to be opened, so as to build related courses of "engineering construction ability line" and "information technology ability line".

(3) Based on the curriculum system, build a professional group training base

By introducing intelligent construction technology, virtual simulation technology, big data, artificial intelligence, cloud computing, Internet of Things and other new technologies, we will build a comprehensive practice base. By using various information software and hardware equipment, we will carry out practical training and practice of intelligent construction management professional groups and cultivate talents for intelligent construction and management.

(4) Build high-quality resources of professional groups based on training bases

Focusing on the reform of the three major teachings, we design independently matched information-based teaching methods for each course, applying them to daily teaching and practical training; we systematically construct teaching resources, forming a systematic professional cluster resource library; we develop new types of

information-based and digital textbooks to support the teaching and practice of the curriculum system; we achieve an integrated system for preparation, instruction, practice, examination, and evaluation, realizing digital management of the teaching process.

3. Construction content of the training room

3.1 Intelligent Construction Man-machine Collaborative Training Laboratory

1. Functional positioning

The Smart Construction Human-Machine Collaborative Training Lab leverages core technologies such as the Internet of Things (IoT), Building Information Modeling (BIM), artificial intelligence, and big data to create a digital, online, and intelligent smart construction site scenario in the training base. This setup facilitates practical training and teaching, with real-time data collection from on-site personnel, videos, tower cranes, and other sources. It automatically identifies risks and promptly sends alarm data to managers, providing intelligent solutions that ensure project risks are manageable. The design philosophy integrates smart construction equipment with intelligent construction sites through interactive means. By utilizing advanced technologies like building robots and IoT, it helps students learn information data modeling, equipment application and maintenance, and smart construction operation and management. Students can understand and master the implementation processes and operational steps of various application scenarios in the field of smart construction.

2. Construction content

The Smart Construction Human-Machine Collaborative Training Lab is equipped with an intelligent video monitoring system for smart construction sites, a labor management information system, and a virtual-real interactive tower crane monitoring system. It also features building-class smart tiling robots, smart masonry robots, robot collaborative control systems, artificial intelligence, and IoT training platforms. The lab is staffed with interpretive robots to guide students through node knowledge introductions, from basic understanding to practical application in smart construction sites, and on to research and training in the application of smart robots and IoT devices. This setup aims to comprehensively and multi-dimensionally cultivate students' cognitive and comprehensive abilities in the field of smart construction.

3. Functional layout

The overall style of the Intelligent Construction Human-Machine Collaboration Training Lab is characterized by digitalization, intelligence, and technological advancement. The interior of the exhibition hall maintains consistency with the main content of other modules in the intelligent construction area. Through advanced technologies such as building robots and IoT, the lab helps students learn infor-

mation data modeling, equipment application and maintenance, intelligent construction operation and management, and understand and master the implementation processes and operational steps of various application scenarios in the field of intelligent construction.



Figure 1. Real scene of intelligent construction man-machine collaborative training laboratory

4. Construction mode

The Intelligent Construction Human-Machine Collaborative Training Laboratory is built on the foundation of the Digital Construction Industry College, with joint construction, investment, and sharing by schools and enterprises. It actively creates favorable conditions for teaching, research, training, and social services. Both parties lead in the construction of experimental and practical training venues, leveraging their advantageous resources to promote digital construction technologies within a certain region and ensure their widespread use. The Intelligent Construction Human-Machine Collaborative Training Laboratory will be co-built with Guanglianda Technology Co., Ltd.

5. Construction results

- (1) Support the teaching of "Introduction to Intelligent Construction", "Smart Management of Engineering Projects", "Intelligent Construction of Building Engineering", "Practical Training of Intelligent Machinery Application" and other courses.
- (2) Cultivate the national university BIM graduation design innovation competition-intelligent construction and management innovation competition, "Guanglianda Cup" intelligent construction competition, national vocational college skills competition-Internet of Things technology application competition, national university Internet of things application innovation competition, building robot technology innovation competition team.
- (3) Connect with 1+X building information modeling skills certificate, registered builder, BIM engineer, smart construction engineer, eight staff, and smart construction engineer training.

3.2 Safety construction training laboratory

1. Functional positioning

The Safety Construction Training Laboratory is a multifunctional and comprehensive training base for construction safety education, integrating safety perception, safety standard learning, safety practice, safe production, accident handling, and practical assessment. At its core are virtual reality and augmented reality technologies, encompassing three main modules: the Safety Perception Teaching Area, the Safety Construction Practice Area, and the Safety Knowledge Assessment Area.

2. Construction content

The safety construction training laboratory is divided into three main parts, including the safety awareness teaching area, the safety construction training area, and the safety knowledge assessment area. The safety awareness teaching area features a labor protection equipment display system, where students learn about the correct usage of protective items such as safety belts, hard hats, and safety shoes, along with incorrect usage demonstrations. The safety sign interactive learning system allows students to understand safety signs through touch.

3. Functional layout

The overall layout combines virtual and real elements to create a realistic construction project scenario, offering dynamic experiences and immersive practical operations. This approach integrates the cognitive-experiential-evaluation process, aiming to prepare students for their future roles by learning safety knowledge in advance. It familiarizes them with common skills such as on-site construction, fire safety, emergency response, and equipment usage, enhancing their safety awareness to prevent accidents. Additionally, it improves their ability to manage emergencies when unexpected incidents occur.



Figure 2. Real scene of safety construction training room

4. Construction mode

Based on the Digital Construction Industry College, the school and enterprises jointly build a smart safety construction training laboratory. Guanglianda Technology Co., Ltd. will undertake the overall design and implementation of the rendering effects, providing some software for free, while we will purchase hardware equipment and other software devices. The operating model adopts the president's responsibility

system under the leadership of the board of directors, promoting the construction of the practice base and its promotion and widespread use within a certain area.

5. Construction results

- (1) To meet the practical teaching of special training "Construction Safety Education" (10 class hours/student) for freshmen after entering the School of Civil Engineering, so as to improve students' safety awareness;
- (2) Solve the traditional teaching problems such as "invisible" construction project planning, "inaccessible" construction implementation stage and "difficult to achieve" daily management, and solve the problems of insufficient safety education and poor scene experience in traditional construction courses;
- (3) Cooperate with the safety education knowledge points in the courses of Construction Technology, Project Management, Project Information Management and Introduction to Intelligent Construction to improve the teaching effect;
- (4) Carry out professional experience activities for primary and middle school students and teachers;
- (5) Meet the safety education and related communication of the industry and enterprise.

3.3 Prefabricated construction training laboratory

1. Functional positioning

The construction of the prefabricated training area closely aligns with the economic and construction development needs of the country and Zhejiang Province. Focusing on the development of specialized clusters, it aims to improve the prefabricated building training base, making it a hub for applied talent cultivation in the prefabricated building sector, a 1+X assessment and training center, a professional skills training base for veterans, an employee training base, and a modern vocational worker training base.

2. Construction content

(1) Vocational skills simulation training system for prefabricated buildings

The simulation training system includes the production of components (material testing, concrete mix design, mold placement, rebar binding and embedded part fixation, component casting, pre-treatment and curing, component lifting and storage, quality inspection and acceptance) and assembly construction (component entry testing and hoisting, grouting, cast-in-place connections, construction quality inspection). It covers teaching, training, and assessment of process simulations for these positions.

(2) Modular construction job simulation and practical operation system

According to the requirements of the Construction Standards for Vocational Skill Certificate Assessment Sites for Prefabricated Component Manufacturing and Installation, the post simulation operation system assessment includes four contents: prefabricated component manufacturing, prefabricated component assembly, sleeve grouting, and joint waterproofing construction.

(3) Vocational skill certificate examination management auxiliary system

The system assists in the administrative management of the 1+X modular building component manufacturing and installation vocational skill certification process. It can maintain information on examinees, test site equipment, evaluators, allocate intelligent examination rooms, arrange examination sequences, manage the examination process, and summarize examination results. By leveraging information technology, it enhances examination efficiency and frees up human resources.

3. Functional layout

According to the requirements of the Construction Standards for Vocational Skill Certificate Assessment Sites for Prefabricated Component Manufacturing and Installation, the practical assessment includes four contents: prefabricated component manufacturing, prefabricated component assembly, sleeve grouting, and joint waterproofing construction. The training base is also divided into four training areas accordingly.



Figure 3. Real scene of prefabricated construction training room

4. Construction mode

The prefabricated training area is a joint project between the school and the enterprise. In terms of construction, the school mainly takes on the building of practical training rooms and equipment, creating conditions for prefabricated building training. The enterprise primarily handles the design and construction of the cultural environment in the training room. Regarding industrial worker training, the school is mainly responsible for applying for training sites and organizing training activities, while the enterprise assists the school in applying for training assessment sites and cultivating trainers for industrial workers. In terms of teaching, both the school and the enterprise jointly undertake the development and construction of relevant courses, resources, and textbooks, promoting the application of new technologies such as prefabricated buildings and intelligent construction in educational reform, thereby broadening and deepening teaching content.

5. Construction results

(1) 400 students per academic year for practical training courses such as prefabricated component production, prefabricated building installation, prefabricated

grouting and prefabricated building sealing;

(2) Meet the requirements of "1+X" prefabricated building component manufacturing and installation vocational skill level certificate for 400 people per day;

(3) To meet the training of prefabricated components production and social training at prefabricated building construction sites for 500 people per day;

(4) Meet the requirements of 200 people per day for the Zhejiang selection competition and national final of the National Vocational Skills Competition on prefabricated Building in the national industry.

3.4 Prefabricated decoration training room

1. Functional positioning

To meet students' needs for intuitive learning, practical skills training in modular decoration is conducted to understand the texture and color of various main materials and master the construction techniques of building decoration modular systems. An ecological educational environment integrating "teaching, demonstration, and practice" is created. Focusing on core professional courses, a practical teaching laboratory that combines theory with practice is established. By using practical toolkits in conjunction with integrated training venues, the specialized skills required for decoration construction are enhanced. The practical animation software teaching system facilitates auxiliary learning and teaching. Once completed, the laboratory will not only provide an environment for hands-on operation but also, through innovative and distinctive teaching designs, address the key challenges in practical teaching.

2. Construction content

The wall layout integrates the main materials of architectural decoration using prefabricated construction techniques. As a sample training area, it showcases the material texture and construction techniques of decorative main materials, including wood, stone, metal, etc., sponsored by Wenzhou Honglian Building Materials Chain Co., Ltd., with a total amount of 350,000 yuan. Each node has a corresponding sign, which is affixed to the appropriate position on the model using acrylic or stainless steel materials. QR codes are printed on the signs for students to scan later through terminal technology, allowing them to access more detailed construction process videos and node information.

3. Functional layout plan

The surrounding area of the laboratory is equipped with prefabricated decoration technology and corresponding materials, as well as integrated kitchen and bathroom space. In the middle area, 48 practical work stations are set up for theoretical teaching and practical operation.

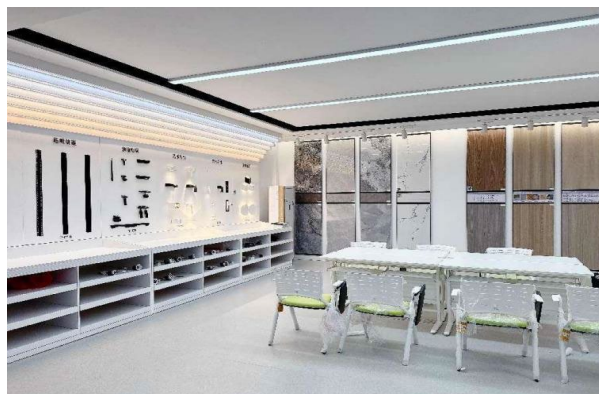


Figure 4. Real scene of prefabricated decoration training room

4. Construction mode

- (1) The enterprise products enter the school, donate professional training base construction, and Wenzhou Honglian Building Materials Chain Co., Ltd. donates materials to jointly build and share base resources.
- (2) Connect with science and technology enterprises, cooperate with enterprises to build practical courses, research and develop new smart education and training methods, and donate some software.
- (3) The technical backbone of leading enterprises shall participate in the knowledge and skill explanation of practical training and integrated theory and practice courses, participate in the writing of new forms of teaching materials, and provide detailed node case materials of real projects.

5. Construction results

- (1) To meet the needs of independent learning such as intuitive learning, online and offline integration, virtual reality integration, and the integration of traditional and new processes, and to help innovate the talent training mode.
- (2) Cooperate with the theoretical teaching, practical teaching and training week of courses such as "Decorative Materials and Technology", "Modular Decoration", "Building Decoration Design" and "Building Decoration Project Management" to carry out practical teaching and skill training, so that professional knowledge can be transformed into professional skills.
- (3) In the process of practical training, students are influenced by the corporate culture, which is conducive to the formation of students' professional quality.
- (4) The enterprise system, work process, norms and standards have become an important part of students' work and study. Students are trained to become technical management talents needed by enterprises.
- (5) Help students to participate in the National Interior Design Skills Competition and the National Building Decoration Technology Application Skills Competition.

4. Optimal path of integrating "post, course, competition and certificate" to cultivate talents

We have explored the integration of industry and education in multiple dimensions, practiced the innovative practice of "job, course, competition and certificate" four-dimensional integration, and built a multi-level talent training channel. The exploration and practice are mainly carried out from the following aspects:

4.1 Based on job competency requirements, empower resource restructuring

Vocational colleges should promote the integration of "job-course-competition-certification" in talent cultivation based on their school and program positioning. Starting from job requirements, they should rely on national teaching standards and refer to industry and enterprise job standards, integrating various resources from industries and enterprises. They should plan systematically and advance comprehensively. By strengthening the deep alignment between the talent cultivation process and social production processes, using systematic thinking to coordinate all development elements, they can improve the professional talent cultivation plan that integrates "job-course-competition-certification," promoting the deep integration of production and teaching elements. Combining the requirements for skills from various certificates and construction skill competitions, they should refine and decompose quality standards, scientifically set up teaching modules, add practical empowerment courses, build a framework of capability alignment and integration, and advance in layers and categories, gradually deepening each level.

4.2 Relying on the reform of the three teachings, promote the cross-border integration of courses and posts

The "post-course-competition-certificate" integrated talent training mode with cross-border, cross-industry and cross-domain characteristics has a direct penetration force for improving the characteristics of the reform of the three teachings.

First, The course is the most micro problem in education, but it solves the most fundamental problem in education. The core of "position-course-competition-certification" is the course, and the integration of course and certificate, as well as the integration of course and competition, are all based on the reform of the course.

Second, Textbook development is a crucial vehicle for curriculum reform. Under the perspective of integrating "positions, courses, competitions, and certification," vocational college textbook development must incorporate elements such as moral education and professional competence into the textbooks. At the same time, it should strengthen collaboration between textbook development and enterprises, combining necessary theoretical knowledge with enterprise work tasks. New textbooks should be developed based on the content, standards, and norms of enterprise positions, forming operational teaching modules to ensure a high degree of alignment between textbook content and the needs of enterprise job positions.

Third, teachers play a crucial role in implementing the integration of "positions, courses, competitions, and certification." Our college has launched a dual-teacher capability enhancement project, promoting five transformations in teacher functions: from knowledge possessors to knowledge integrators, from knowledge transmitters to learning guides, from course implementers to course developers, from homework assigners to resource aggregators, and from evaluators of right and wrong to facilitators of opinion exchange.

4.3 Aggregating skills competition resources and deepening the integration of courses and competitions

Vocational skills competitions are organized by official bodies based on national occupational skill standards, combining practical production and business operations. These events focus on testing operational skills and the ability to solve real-world problems. In the process of integrating "positions, courses, competitions, and certification," vocational skills competitions lead the reform of vocational education, playing crucial roles such as setting benchmarks, establishing standards, and catalyzing change. Our institute integrates skills competitions with teaching and collaborates with enterprises to refine the integration of competition and education, enhancing the inclusiveness of these events.

4.4 Select professional certificates to improve the system of education and training

Professional qualification certificates serve as one of the credentials to assess whether technical and skilled personnel possess comprehensive occupational abilities. They are crucial nodes in the vocational education talent cultivation chain and key links in implementing the integration of "positions, courses, competitions, and certificates." The integration of "positions, courses, competitions, and certificates" cannot be achieved without a combined model of horizontal expansion and vertical extension in training and education. Vocational colleges must adhere to a systematic talent cultivation model that emphasizes both moral and technical development and progressive capability enhancement. It is essential to manage the relationship between moral education and personal growth, the complementary relationship between teaching and skill training, and the mutually beneficial relationship between specialization and versatility, promoting the organic combination of education and training.

4.5 Expand the integration field and promote the effectiveness of integrated education

The integration of "positions, courses, competitions, and certificates" in talent cultivation is a systematic project that requires an integrated approach with principles such as holistic thinking, hierarchical advancement, diverse collaboration, interactive connection, and innovative integration. It aims to build a multi-departmental linkage mechanism involving institutional coordination, departmental collaboration,

faculty promotion, and full participation. The project expands the integration of workplace and academic fields, with "integration" as the main thread and "courses" at the core. It integrates "positions," "competitions," and "certificates" into "courses," promoting the convergence of multiple elements and modules. This enhances the course design that progressively advances basic skills, core skills, and comprehensive skills, reinforcing the teaching aspect of "combining work and study, integrating knowledge and action."

5. Summary

This paper delves into the issues encountered in the construction of intelligent building and management professional clusters under the background of job-course-competition-certification integration and industry-education fusion. It analyzes the bottlenecks and challenges in the development of practical training bases based on job-course-competition certification. Through research and practice, we have collaborated with domestic construction enterprises to jointly build an intelligent building training center, achieving the following beneficial explorations and practices:

(1) The quality of personnel training has been effectively improved

The integration of "job, course, competition, and certification" in talent cultivation requires incorporating the actual skill requirements of positions into course content, truly putting knowledge and skills into practice. The quality of training has significantly improved; since the construction of the laboratory, off-campus students have won over a hundred awards in skill competitions, including 30 national first-prize projects, achieving a historic breakthrough.

(2) Strongly build a team of two teachers with dual skills, and present high-quality teaching resources in multiple ways

Taking the renovation of practical training laboratories as an opportunity, we aim to promote the integration of theoretical and practical teaching by professional teachers, professional operations, the transformation and development of practical training equipment, and textbook development. We will advance the reform and innovation of new classroom teaching methods such as three-dimensional models, interactive, case-based, and task-driven approaches, which are diverse and composite. By offering information technology practice courses, we will leverage virtual simulation, cloud classrooms, BIM competitions, smart construction sites, and other methods that combine virtual and real-world design to broaden students' learning paths. Since the establishment of the practical training laboratory, we have developed three new forms of textbooks for school-enterprise cooperation, are currently writing five more textbooks, and have five provincial-level textbooks in progress.

(3) In-depth development of regional integration of industry and education

Implementing the integration of industry and education, as well as school-enterprise cooperation, to build distinctive construction training and teach-

ing demonstration bases, setting benchmarks across the country or region. While meeting the needs of on-campus teaching, sharing improvements in local vocational education with construction departments, sister institutions, and related enterprises. Since its completion in April 2023, it has conducted 3,164 social training sessions; hosted 114 visits and exchanges from government, schools, industries, and enterprises, including high praise from leaders such as Deputy Director of the Housing and Urban-Rural Development Bureau and leaders from the Provincial Department of Education.

The achievements not only improve the quality of education and teaching in our college, but also provide students with a broader space for career development. At the same time, they also provide useful exploration and practical experience for the reform of education and teaching in colleges and universities.

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