

Research on Classroom Reform and Teaching Innovation in Vocational Colleges from the Perspective of Rural Talent Revitalization——Taking the Course of “Architectural CAD Drawing” as an Example

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Abstract: Vocational education, as a type of education, can eliminate the hollowing out of human resources through multi-factor investment, integration of industry and education, and educational radiation, which is conducive to rural governance. However, how vocational education can effectively assist in the revitalization of rural talents and achieve common prosperity is a major challenge. As an important part of vocational education, vocational colleges have the important positioning of providing talents for undergraduate vocational education and cultivating skilled workers for society. To further realize the grand vision of rural talent revitalization, this project takes the reform of professional course teaching as a breakthrough point, explores the curriculum reform methods of vocational education to assist the transformation process of rural talent revitalization, and also provides a reference for other curriculum reforms.

Keywords: Rural talent revitalization; Reform in education; Teaching practice research

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1. Introduction

The key to rural revitalization lies in people. Vocational education, as a type of education, can eliminate the hollowing out of human resources through multi-factor investment, industry education integration, and educational radiation, which is conducive to rural governance^[1,2]. It can also serve the strategy of rural revitalization and cultivate practical talents in rural areas with new professional farmers as the main body^[3-5]. In 2022, Sichuan pointed out the implementation of the “Beautiful Sichuan, Livable Countryside” construction action, which has increased the demand gap for rural talents^[6,7]. In 2022, C City was designated as a national demonstration county for rural revitalization, with 7 vocational colleges under its jurisdiction. It is also an important city in the construction of the Chengdu Chongqing modern and efficient characteristic agricultural

belt. To further promote the revitalization of rural talents, this project takes the reform of professional courses in vocational colleges as a breakthrough point, combined with the current economic development status of C city, to explore the methods of curriculum reform in the process of vocational education assisting the transformation of rural talent revitalization.

2. Course practice and innovation

2.1. Course selection and teaching objectives update

Based on the current situation of rural revitalization in C city, a shared resource library has been established, and a questionnaire survey has been set up in conjunction with reform goals to design and analyze talent demand. Based on the curriculum design plan and standards for the professional development needs and professional ethics of the construction profession^[8], 8 courses including architectural CAD drawing, construction engineering construction, construction surveying, quantity measurement, construction process quality inspection, and engineering data recording and organization were selected as pilot courses. Typical work tasks were extracted based on questionnaire survey results and actual work processes. The traditional knowledge points were divided into task-oriented teaching, with knowledge points interspersed throughout the teaching process, reflecting the students' subject status, and learning through learning and doing throughout the course^[9,10]. The talent revitalization demand positions corresponding to the "Architectural CAD Drawing Course" include architectural designers and environmental planners, with the main teaching objective of mastering the drawing of small and medium-sized houses. Skills, rural environmental surveying and design mapping.

2.2. Situational teaching objectives

Taking the architectural CAD drawing course as an example, the traditional scattered teaching knowledge points are combined with the job skills requirements of designers and environmental planners, as well as the requirements of provincial competitions to reorganize the teaching content into six teaching scenarios: creating sample files, partial renovation of small houses, design of local characteristic homestays, design and decoration of integrated rural restaurants, and renovation of living environments in small residential villages. The knowledge points of the six teaching scenarios are connected before and after, and the difficult points of the course are progressively advanced. During the explanation, teaching methods such as storytelling, role-playing, and case analysis are introduced to jointly overcome the teaching difficulties, guide students to actively participate and think seriously, improve their understanding of textbook knowledge and mastery of job skills, and better achieve teaching goals^[11]. The corresponding teaching scenario diagram is shown in **Table 1**.

2.3. Reorganize course teaching resources

The effective use of course teaching resources can greatly enhance learning outcomes and achieve teaching objectives. In the process of this teaching reform, traditional teaching resources will be transformed into information-based teaching resources^[12,13]. The pre-class open PK mode guides students to preview or review knowledge, the in-class open challenge mode guides students to memorize knowledge content, and the post-class open point reward mode guides students to summarize and transfer knowledge points^[14], which improves students' enthusiasm and initiative, overcomes key and difficult points while increasing the fun of knowledge points, and also facilitates students' unrestricted use of teaching resources in various venues and forms.

Table 1. Corresponding diagram of teaching scenarios

Course name	Teaching scenario design	Teaching objectives
Architectural CAD Drawing	Create sample file	Master the relevant regulations of national architectural drafting standards Master the expression methods of engineering forms Master the creation methods of elevation and grid Master the basic operation commands of software
	Partial renovation of idle farmhouses	Graphic survey and mapping Reading, expression, and drawing of architectural engineering drawings Establish the basic professional ethics of architects who strictly follow “national standards”
	Design of local characteristic homestays Integrated Rural Restaurant Design and Decoration Renovation of Residential Environment in Small Residential Villages	Familiar with the tasks and processes of the architect’s scheme design position Design a “material library” framework and search for effective resources to organize and organize Understand the design concepts and methods of adapting to local conditions, green buildings, and prefabricated buildings Establish an architectural design concept that respects ethnic cultural diversity and starts from a humanistic perspective Master the design process of small and medium-sized buildings and optimize it Establish a team collaboration awareness of co-construction and sharing

2.4. Innovation of course teaching strategies

2.4.1. Deepen enterprise practice and cultivate “dual teacher” teachers

The members of the teaching team first set up a questionnaire survey based on the reform goals, designed and analyzed talent needs, and then connected with school-enterprise cooperation units according to the specific work tasks of the reform goals. Based on real projects, they transformed the projects, redesigned the teaching content, and integrated it with industry standards and world competition standards to create high-quality classrooms that meet social needs and achieve the dual purpose of cultivating “dual teacher” teachers^[15].

2.4.2. Introduce industry-renowned teachers and improve the supporting materials required for course teaching

In the process of teaching reform, renowned teachers from enterprises, staff from rural functional departments, and pioneers in the construction industry from school-enterprise cooperation units were invited to complete the teaching outline and module design of this course, as well as the selection of corresponding knowledge points. The course standards and lesson plans were improved, and teaching courseware, teaching resource library and integrated work pages were jointly produced to further improve teaching supporting resources.

2.4.3. Integrate provincial competitions and extract skill points

The rest of the provincial competition skill points and course content integration combines actual work content with learning content, enhances students’ sense of professional identity and professional qualities, strengthens their ability to solve and understand problems, and cultivates their teamwork awareness of co-construction and sharing.

2.5. Curriculum teaching evaluation reform

To improve the quality of teaching and strictly control the teaching process, a process assessment is implemented in the reform process from three aspects: knowledge, skills, and qualities. During the training process, not only is the cognitive ability development stage of students emphasized but also the comprehensive quality cultivation of students in the learning process is valued. During the evaluation process, enterprise

famous teachers, rural functional department staff, and construction industry pioneers are invited to evaluate students' design plans together and provide comprehensive comments. The best designer is selected to promote students' comprehensive development.

3. Summary

To further promote the revitalization of rural talents and to achieve common prosperity, this project takes the teaching reform of architectural CAD courses in the construction profession as a breakthrough point in the context of rural talent revitalization in C city. It explores the teaching reform methods of vocational colleges to assist rural talent revitalization and the transformation of traditional vocational colleges to engineering integration under the background of rural revitalization. It not only enables teachers to understand the current situation of the industry, familiarize themselves with work processes, refine teaching objectives, promote regional rural talent revitalization, and increase the strength of school-enterprise cooperation, but also further enhances students' learning interest, standardizes their learning habits, cultivates their ability to think independently and solve problems, promotes curriculum reform and teaching innovation under the talent cultivation mode in the context of rural revitalization, and provides a reference for other curriculum reforms.

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