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Research on the Construction Strategy of Higher Vocational Curriculum System Based on Work Process

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Abstract: The construction of a curriculum system based on work process is the core path for higher vocational education to deepen the integration of production and education and improve the quality of talent cultivation. Based on the essential characteristics of higher vocational education, "vocationality, practicality, and openness," this paper defines the core connotation of a work process-based curriculum system, analyzes its essential differences from the traditional subject-based curriculum system, and systematically proposes implementation strategies for curriculum system construction from five dimensions: vocational post research, typical work task analysis, curriculum content reconstruction, teaching model innovation, and evaluation system optimization. The research aims to provide theoretical reference and practical paradigms for higher vocational colleges to solve the problem of "disconnection between learning and application" and cultivate technical and skilled talents meeting industrial needs.

Keywords: Higher vocational education; Work process; Curriculum system; Construction strategy; Technical and skilled talents

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1. Introduction

As an important part of China's education system, higher vocational education undertakes the mission of cultivating high-quality technical and skilled talents for the frontlines of production, construction, service, and management. Currently, with the accelerated industrial transformation and upgrading, new technologies, processes, and norms are emerging continuously, putting forward higher requirements for the vocational abilities of higher vocational talents. The traditional subject knowledge-oriented curriculum system, plagued by problems such as "valuing theory over practice" and "disconnection between knowledge and post needs", can no longer meet the demands of industrial development for talent cultivation. The construction of a curriculum system based on work process, taking the actual work tasks of vocational posts as the logical starting point, breaking the constraints of systematic subject knowledge, and reconstructing curriculum content and teaching

processes, has become an inevitable choice for higher vocational education reform. In recent years, domestic scholars have conducted numerous explorations on work process-oriented curriculum development. For example, Jiang Dayuan‘s “work process systematization“ curriculum theory has provided important theoretical support for curriculum system construction [1]; some institutions have formed distinctive curriculum models through school-enterprise cooperation practices, but there is still a lack of promotable systematic construction strategies nationwide. Therefore, in-depth research on the construction path of a work process-based higher vocational curriculum system is of great theoretical and practical significance.

2. Core connotation and construction principles of a work process-based higher vocational curriculum system

2.1. Core connotation

A work process-based higher vocational curriculum system refers to a curriculum system that takes the actual work processes of vocational posts as the basis, transforms work tasks into learning tasks, organizes curriculum content according to the completeness and systematicness of work processes, and realizes the “alignment between learning processes and work processes, and between curriculum content and vocational standards” [2]. Its core characteristics are reflected in: first, taking vocational competence as the training goal, emphasizing the formation of students‘ comprehensive vocational literacy; second, taking work tasks as the curriculum carrier, breaking the chapter boundaries of traditional subject knowledge; third, taking action orientation as the teaching method, highlighting students‘ dominant position in the learning process; fourth, taking school-enterprise cooperation as the implementation path, carrying out practical teaching relying on the real working environment of enterprises.

2.2. Construction principles

(1) Vocational orientation principle: The construction of the curriculum system must be based on the needs of vocational posts. Through in-depth research on the development status of industries and enterprises and the employment requirements of vocational posts, the talent training goals and specifications are clarified to ensure that the curriculum content is highly consistent with the work tasks and vocational standards of vocational posts [3].

(2) Work process systematization principle: Organize curriculum content in accordance with the logical order of work processes to ensure the completeness and systematicness of the curriculum system. Transform the typical work tasks of vocational posts into continuous learning tasks in accordance with the idea of “task decomposition—ability reconstruction—curriculum integration,” realizing the synchronization of work processes and learning processes [4].

(3) Competence-based principle: Focus on the formation and improvement of students‘ vocational abilities, taking into account the coordinated development of professional abilities, method abilities, and social abilities. The curriculum setting not only pays attention to the cultivation of professional skills but also emphasizes the shaping of students‘ ability to solve practical problems, teamwork ability, and lifelong learning ability [5].

(4) Openness and dynamics principle: The curriculum system should maintain an open attitude, actively connect with industrial development trends, timely absorb new technologies, processes, and norms, and adjust the curriculum content and structure. Establish a regular curriculum update mechanism to ensure

the adaptability and forward-looking nature of the curriculum system [6].

(5) School-enterprise collaboration principle: Give full play to the main role of enterprises in the construction of the curriculum system, invite industry and enterprise experts to participate in the entire process of vocational post research, typical work task analysis, and curriculum content design, realizing the in-depth integration of the curriculum system with the actual production of enterprises [7].

3. Differences between the work process-oriented curriculum system and traditional subject-based curriculum system

A work process-oriented curriculum system and a traditional subject-based curriculum system follow different educational logics in essence. There are fundamental differences between them in terms of construction basis and content organization, which directly determine the adaptability between talent cultivation effects and post needs. The specific differences are mainly reflected in the following two dimensions:

3.1. Different logical starting points and construction bases

The traditional subject-based curriculum system takes the systematicness of subject knowledge as the logical starting point, and its construction basis originates from the inherent development context of subject theories, emphasizing the completeness and logical rigor of the knowledge system. Its curriculum setting often progresses in accordance with the subject hierarchy of "basic theory—professional theory—application expansion." For example, mechanical majors first offer theoretical courses such as "Advanced Mathematics" and "Mechanical Principles," and then set up application courses such as "Mechanical Manufacturing Technology," which is essentially the replication and transmission of static subject knowledge. In this model, the curriculum system lacks a direct connection with the actual needs of vocational posts, which is likely to lead to the problem of "disconnection between knowledge reserve and application needs."

The work process-oriented curriculum system takes the actual work scenarios of vocational posts as the logical starting point, and its construction basis is the typical work tasks and vocational ability requirements of industries and enterprises. Through in-depth research on industrial development status and post employment standards, the real work process is transformed into the core framework of curriculum construction. For example, when Shenzhen Polytechnic and Googol Technology co-built the curriculum system, they first jointly formulated the post competency model for motion control field engineers, and then designed curriculum modules around work links such as "equipment commissioning—project management—on-site optimization." Its essence is the generation and reconstruction of practical knowledge in a dynamic action system, realizing the precise alignment between the curriculum system and vocational needs.

3.2. Different content organization and knowledge sequencing

The traditional subject-based curriculum system organizes content according to the attribution of knowledge categories, and the knowledge sequencing follows the principle of "theory first, practice subordinate." The curriculum content is dominated by explicit theoretical knowledge, and knowledge points are divided through the format of "part—chapter—section." For example, the "Financial Accounting" course for accounting majors explains accounting methods according to the classification of accounting elements, which lacks correspondence with the real accounting processing process of enterprises. This organization method leads to knowledge being fragmented into isolated pieces, making it difficult for students to form comprehensive abilities to solve practical

problems. A higher vocational education quality report in a province shows that nearly 30% of majors have insufficient practical class hours (accounting for less than 40%), which significantly restricts skill development.

The work process-oriented curriculum system organizes content according to the implementation logic of work tasks, and the knowledge sequencing follows the principle of "application orientation, integration of theory and practice." Through the idea of "task decomposition—ability reconstruction—curriculum integration," professional knowledge, skills, and literacy are integrated into work links. For example, the work order-based loose-leaf textbooks developed by Ordos Institute of Technology design learning tasks in accordance with the work process of "information—planning—decision—implementation—inspection—evaluation," allowing theoretical knowledge to be naturally embedded in the practical process. In this model, the total amount of knowledge does not decrease, but the transformation from "storage-based knowledge" to "application-based knowledge" is realized, and implicit practical knowledge and explicit theoretical knowledge form an organic whole.

4. Implementation strategies for the construction of a work process-based higher vocational curriculum system

4.1. Conduct in-depth vocational post research to clarify talent cultivation orientation

Vocational post-research is the premise and foundation for curriculum system construction, and its depth and breadth directly determine the pertinence and applicability of the curriculum system. Higher vocational colleges should form a research team composed of professional teachers, industry experts, and enterprise technical backbones, and carry out comprehensive research using various methods such as literature research, questionnaire surveys, on-site interviews, and post practice. The research content should include: the current status and trends of industry development, the quantity and structure of enterprise talent demand, the setting and qualification requirements of vocational posts, typical work tasks and processes, vocational ability requirements, and career development paths [8]. During the research process, platforms such as industry associations and enterprise human resources departments can be used to expand the research scope and ensure the authenticity and representativeness of research data. Through sorting and analyzing the research data, a "Vocational Post Research Report" is formed, clarifying the talent cultivation goals, vocational ability specifications, and core basis for curriculum system construction, laying the foundation for subsequent curriculum development.

4.2. Analyze typical work tasks to reconstruct the curriculum content system

Typical work task analysis is the key link connecting vocational posts and curriculum content. After completing the vocational post research, the research team should invite enterprise technical backbones, post experts, and professional teachers to jointly hold a typical work task analysis meeting to sort out, screen, and integrate the work tasks of vocational posts, and extract representative and comprehensive typical work tasks [9]. Subsequently, in accordance with the logical order of work processes, the typical work tasks are decomposed, and the knowledge, skills, and literacy required to complete each task are clarified, forming a corresponding relationship of "work tasks—vocational abilities—knowledge and skills." On this basis, taking typical work tasks as the carrier, the knowledge system of traditional subject courses is broken, and scattered knowledge and skills are integrated into modular curriculum content, constructing a curriculum structure of "basic ability module + core ability module + extended ability module." The basic ability module focuses on the basic knowledge and general skills necessary for vocational posts; the core ability module cultivates students‘ professional core skills around

typical work tasks; the extended ability module sets personalized elective courses in combination with industry development trends and students‘ career development needs, realizing “integration of general and professional education, teaching students in accordance with their aptitude.”

4.3. Innovate action-oriented teaching models to promote the alignment between teaching processes and work processes

The innovation of teaching models is the guarantee for the effective implementation of a work process-based curriculum system. Higher vocational colleges should abandon the traditional indoctrinative teaching model of “teachers lecture, students listen“ and fully implement action-oriented teaching methods, including the project teaching method, task-driven teaching method, case teaching method, and situational teaching method [10]. In the teaching process, guided by learning tasks, create teaching situations consistent with the real working environment of enterprises, allowing students to actively acquire knowledge, exercise skills, and improve literacy in the process of completing learning tasks [11]. For example, in the teaching of professional core courses, real enterprise projects can be introduced into the classroom, and teaching can be organized in accordance with the work process of “project initiation—plan design—task implementation—achievement acceptance—summary and reflection,” allowing students to participate in project development and practice throughout the process, realizing “learning by doing, doing by learning.” At the same time, relying on school-enterprise cooperation training bases, carry out “post-course-competition-certificate” integrated teaching, integrating vocational skill level certificate assessment content and vocational skill competition standards into curriculum teaching, improving students’ post-adaptability and vocational competitiveness [12].

4.4. Construct a diversified evaluation system to ensure the quality of talent cultivation

A work process-based curriculum system requires a matching diversified evaluation system as support. It is necessary to break the traditional single evaluation model dominated by theoretical examinations and construct a diversified evaluation system that “combines process evaluation with summative evaluation, knowledge evaluation with ability evaluation, and on-campus evaluation with enterprise evaluation.” Process evaluation focuses on students’ performance in the learning process, including task completion, teamwork ability, and innovative thinking, which can be conducted through classroom observation, homework submission, and project reports; summative evaluation focuses on assessing students’ comprehensive vocational abilities, which can be in the form of skill operations, project defenses, and achievement displays; enterprise evaluation invites enterprise technical backbones to participate in evaluating students from the aspects of on-the-job practice performance and vocational literacy, ensuring the objectivity and authenticity of evaluation results. At the same time, establish an evaluation feedback mechanism, and timely apply the evaluation results to curriculum content adjustment and teaching method optimization, forming a closed-loop management of “evaluation—feedback—improvement” to continuously improve the quality of talent cultivation [13].

4.5. Strengthen school-enterprise collaboration guarantees to consolidate the foundation for curriculum system implementation

School-enterprise collaboration is the key to the construction and implementation of a work process-based curriculum system [14]. Higher vocational colleges should deepen school-enterprise cooperation, establish long-term and stable cooperative relationships with leading enterprises and backbone enterprises in the industry, and co-build teaching platforms such as industrial colleges, training bases, and curriculum resource libraries. First,

co-build training bases, construct on-campus training bases in accordance with enterprise production standards, introduce real enterprise production equipment and management models, and build off-campus training bases relying on enterprises to provide students with a real working environment; second, co-build teaching teams, hire enterprise technical backbones and skilled craftsmen as part-time teachers to participate in curriculum teaching and practical guidance, and organize on-campus teachers to take temporary positions in enterprises to improve their practical teaching ability; third, co-build curriculum resources, jointly develop textbooks, courseware, micro-courses, virtual simulation teaching resources, etc., to ensure that the curriculum content is synchronized with the actual enterprise production; fourth, co-build management systems, establish school-enterprise collaborative curriculum management, teaching operation, and quality monitoring systems to ensure the smooth implementation of the curriculum system [15].

5. Conclusion

The construction of a work process-based higher vocational curriculum system is a core measure for higher vocational education to adapt to industrial development needs and improve the quality of talent cultivation, and its essence is to realize the in-depth integration of vocational education and industrial development. In the process of curriculum system construction, higher vocational colleges should adhere to principles such as vocational orientation, work process systematization, competence-based education, and school-enterprise collaboration. Through strategies such as conducting in-depth vocational post research, analyzing typical work tasks, innovating action-oriented teaching models, constructing a diversified evaluation system, and strengthening the school-enterprise collaboration guarantee, they can break the constraints of the traditional subject-based curriculum system and build a curriculum system highly consistent with vocational post needs and closely aligned with work processes. This process requires the collaborative participation of multiple subjects, such as institutions, industries, and enterprises, teachers, and students, as well as continuous exploration and practice, to continuously improve the scientificity, pertinence, and applicability of the curriculum system, providing strong support for cultivating more high-quality technical and skilled talents and serving the high-quality development of the economy and society.

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