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Research on the Mechanisms and Practical Pathways Through Which Project-Based Learning Enhances College Students' Career Decision-Making Self-Efficacy

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Abstract: Higher-quality employment has imposed higher requirements on talent cultivation in higher education, and the enhancement of college students' career cognition, decision-making ability, and developmental confidence has increasingly become an important component of higher education reform. As an instructional approach primarily characterized by authentic problem orientation, task-based practice, and the presentation of outcomes, project-based learning is capable of establishing a closer connection among knowledge acquisition, competence development, and career preparation. To enhance career decision-making self-efficacy, it is necessary to further construct a tiered project system oriented toward career development, improve a multi-agent collaborative support mechanism for project implementation, and establish an educational mechanism integrating process evaluation with reflective transformation.

Keywords: project-based learning; career decision-making self-efficacy; college students; high-quality employment

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1. Introduction

In 2024, the General Office of the CPC Central Committee and the General Office of the State Council issued the Opinions on Accelerating the Construction of a High-Quality Employment Service System for Graduates of Regular Higher Education Institutions, which proposed the implementation of an employment-first strategy, the prioritization of college graduate employment, and the improvement of curriculum standards for career education and employment guidance[1]. According to data released by the Ministry of Education, the scale of college graduates increased from 848,000 in 1999 to 12.7 million in 2026, representing a fourteen-fold increase over a period of twenty-seven years. During the period of rapid expansion, higher education has encountered a series of problems affecting college graduates' employability and employment outcomes, including sharp quantitative growth, insufficient quality, and structural mismatch[2].

As new quality productive forces accelerate their formation, social expectations of college graduates have shifted from the mere mastery of knowledge to the cultivation of higher-level comprehensive competencies[3]. From the perspective of promoting students' growth and development so as to realize high-quality employment, "project-based" teaching reform enables students to participate in the planning, organization, and execution of authentic projects, thereby

systematically strengthening their leadership, self-directed learning ability, teamwork, and practical innovative capacity. It also significantly enhances vocational skills and employability, strengthens career planning awareness, and improves job-search competitiveness[4].

2. Connotation, Characteristics, and Educational Value of Project-Based Learning

Project-based learning is an instructional approach centered on authentic problems or complex tasks, with student participation as its core and outcome production as its orientation. Compared with traditional classroom teaching, which is primarily characterized by knowledge transmission and passive reception, project-based learning places greater emphasis on the entire process through which students discover problems, analyze problems, integrate resources, and solve problems within specific contexts[5]. Students are no longer merely recipients of knowledge; rather, they become active constructors of learning activities, participants in project tasks, and creators of learning outcomes[6].

Project-based learning is principally manifested in three key characteristics: authenticity, public products, and driving questions. Authenticity requires that project themes originate from real-life situations, social practice, or authentic issues in professional fields, while also requiring that learning activities, evaluation criteria, and the application of outcomes be operable and practically oriented, so that students can solve real problems in contexts close to the real world. Public products constitute an important external marker of project-based learning, meaning that at the conclusion of a project, students are expected to produce concrete works and present and share them with peers, teachers, or the public, thereby making learning outcomes, inquiry processes, and evaluative feedback visible. Driving questions constitute the core of project advancement; they must be connected to specific contexts, point to core disciplinary concepts, and possess a certain degree of challenge, openness, and motivational force, so as to continuously stimulate students' learning interest and inquiry motivation and promote the completion of knowledge construction and competence development through "learning by doing" [7, 8].

Project-based learning accords with the developmental trend of education and teaching from knowledge transmission toward competence and literacy cultivation. It is capable of integrating knowledge acquisition, competence training, value cultivation, and meaning construction within a unified process, thereby promoting the coordinated development of students' practical ability, inquiry capacity, higher-order thinking, and core competencies, and thus possessing significant curricular, practical, and educational value[9].

3. Mechanisms Through Which Project-Based Learning Enhances College Students' Career Decision-Making Self-Efficacy

Self-efficacy refers to individuals' subjective judgments of their own abilities. It concerns whether they are able to use their existing knowledge and skills to complete specific tasks, while also influencing their motivational level, intensity of confidence, and degree of effort during task execution. The higher an individual's self-efficacy, the more likely that individual is to believe that he or she can effectively regulate behavioral processes, overcome real difficulties, and maintain strong persistence and initiative in the face of challenges[10]. In the domain of career development, self-efficacy is further manifested as the level of trust and evaluation individuals place in their capacity to complete tasks related to career choice and career development. It is mainly reflected in self-appraisal, information gathering, goal selection, planning, and problem solving, and it represents college students' psychological preparedness and confidence in career exploration, career positioning, and career action[11, 12].

3.1. Strengthening Career Competence Beliefs

Successful experience is an important source of the formation of individual self-efficacy. Compared with traditional teaching modes centered on knowledge transmission, project-based learning emphasizes students' sustained engagement

with authentic problems and concrete tasks, enabling them to gain direct practical experience in project design, material integration, plan implementation, and outcome presentation. In the process of completing project tasks, students are able to transform abstract knowledge mastery into concrete demonstrations of competence and gradually develop positive judgments regarding their own capabilities[13, 14].

The successful experiences accumulated through the completion of authentic tasks possess strong contextuality and transferability. They can strengthen students' affirmation of their own expressive ability, organizational and coordination ability, and analytical and problem-processing ability, while also enhancing their expectations of adaptation to future occupational situations. In other words, by externalizing learning outcomes into perceptible and verifiable practical achievements, project-based learning enables students to gradually develop stable beliefs in their own career competence through the continuous completion of tasks, thereby strengthening their confidence and sense of control in career decision-making.

3.2. Deepening Self-Cognition and Career Cognition

The effective unfolding of career decision-making is grounded in relatively clear self-cognition and career cognition. Through task-driven processes, role differentiation, and contextual embedding, project-based learning enables students to undergo continual self-examination, self-adjustment, and self-confirmation in concrete practice, thereby promoting more objective understandings of their ability structures, interest preferences, and developmental potential[15, 16].

Different students assume differentiated roles according to task demands and display distinct competence characteristics in practical activities such as communication and coordination, data analysis, creative design, and implementation and advancement. Self-cognition formed on the basis of practical performance is more authentic, stable, and developmentally oriented than self-evaluation confined to subjective judgment. Students encounter relatively authentic occupational situations and job logics, thereby deepening their understanding of occupational content, competence requirements, and developmental pathways. The simultaneous enhancement of self-cognition and career cognition can effectively reduce ambiguity and uncertainty in career choice.

3.3. Enhancing Decision-Making Ability and Confidence in Career Action

Career decision-making inherently involves complex information processing, comparison of alternatives, anticipation of outcomes, and the selection of actions; it is therefore a typical problem-solving process. Career decision-making self-efficacy is manifested not only as subjective trust in one's own abilities, but also as a belief in one's capacity to judge, choose, and act within complex situations. Students need to confront multiple challenges, including the coordination of task division, insufficiency of resource allocation, optimization and adjustment of plans, progress control, and responses to unexpected problems, and accordingly engage in continuous information collection, problem analysis, comparison of pathways, and decision revision. This substantively strengthens students' analytical ability, judgment ability, executive ability, and adaptive capacity in complex situations[17, 18].

4. Practical Pathways of Project-Based Learning for Enhancing Career Decision-Making Self-Efficacy

4.1. Constructing a Tiered Project System Oriented Toward Career Development

For project-based learning to effectively serve the enhancement of college students' career decision-making self-efficacy, it is necessary to strengthen a career-development orientation at the conceptual level, expanding project goals from mere knowledge training to the collaborative construction of knowledge acquisition, competence development, and career preparation. Project content should proactively align with occupational competence requirements, career development tasks, and real job contexts, incorporating such elements as industry research, job analysis, social service, innovation and entrepreneurship, professional practice, and school-enterprise collaboration into project design, so that students can

gradually form concrete and realistic understandings of the occupational world through project participation.

The construction of the project system should also embody the principle of stratification and categorization. Significant differences exist among students of different grades, majors, and developmental stages with respect to career cognition, competence foundations, and preparedness for decision-making, and project design should therefore not adopt a homogeneous model. For lower-year students, the emphasis should be placed on self-exploration, disciplinary cognition, and career initiation; for upper-year students, greater emphasis should be placed on job simulation, practical application, and linkage with employment.

4.2. Improving a Multi-Agent Collaborative Support Mechanism for Project Implementation

The effective implementation of projects depends not only on the scientific design of the projects themselves, but also on the quality and intensity of guidance and support during implementation. It is therefore necessary to make efforts to construct a collaborative educational mechanism led by teachers and jointly involving multiple internal and external actors, so as to enhance the professionalization and authenticity of project implementation.

On the one hand, higher education institutions should strengthen teachers' professional training in project-based teaching, career education, and process guidance, promoting a transformation in teachers' roles from transmitters of knowledge to organizers of learning, guides of process, and facilitators of development, so that they acquire the capacity to organically integrate coursework, competence cultivation, and career development. On the other hand, the boundaries between the classroom and society should be broken down through the introduction of enterprise mentors, industry experts, outstanding alumni, and career guidance instructors to participate jointly in project design, process guidance, and outcome evaluation.

4.3. Establishing an Educational Mechanism Integrating Process Evaluation and Reflective Transformation

The enhancement of career decision-making self-efficacy is characterized by dynamic generation. Accordingly, evaluation systems should not be confined to outcome-based assessment, but should instead emphasize sustained attention to students' participation processes, competence development, and psychological construction. To this end, a comprehensive evaluation mechanism should be established, with process evaluation as the core and outcome evaluation as a supplement, incorporating such dimensions as task engagement, role assumption, collaborative performance, problem solving, staged reflection, and outcome presentation, so as to present more comprehensively students' authentic developmental trajectories within projects.

At the same time, project reflection and outcome transformation should also be incorporated into the educational system. After project completion, higher education institutions may use reflective journals, developmental portfolios, project summary reports, and career planning documents to guide students in systematically sorting out their task responsibilities, competence development, problem-handling processes, and experiential shortcomings within the project, so that practical experience is transformed from temporary activity-based experience into relatively stable competence cognition and a basis for career judgment.

5. Conclusion

Against the background of high-quality employment and the development of new quality productive forces, college students need not only solid professional knowledge, but also strong career cognition, decision-making ability, and developmental confidence. Through authentic task-driven learning, collaborative inquiry, practical reflection, and the presentation of outcomes, project-based learning provides an effective pathway for enhancing college students' career decision-making self-efficacy and can play a positive role in deepening self-cognition, expanding career cognition, training decision-making ability, and strengthening confidence in action. Higher education institutions should further optimize

project design, strengthen collaborative education, improve evaluation mechanisms, and promote the deep integration of project-based learning with career education and employment guidance, so as to better serve the goal of high-quality and full employment for college students.

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