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Research on the Practical Path of Labor Education for College Students Based on Project-Based Learning

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Abstract

Labor education is a critical factor for universities in the new era to fulfill the fundamental task of cultivating morality and to build a system of "Integration of the Five Educations." However, labor education suffers from formalism, fragmentation, and students' misunderstandings currently. To address these issues, this study introduces the concept of Project-Based Learning (PBL) and builds an integrated labor education curriculum system containing ten practical projects relying on online teaching platforms. It systematically discusses the theoretical basis and practical effects of integrating PBL into labor education. The results show that this model effectively improves students' recognition of labor's value and their practical abilities. Finally, this paper proposes a five-part practice model—goal orientation, project design, platform support, process implementation, and multiple evaluations—to provide a reference for the systematic implementation of labor education in colleges.

Keywords

Project-based learning, college students, labor education, online courses, practice path

1. Introduction

In March 2020, the CPC Central Committee and the State Council issued Guidelines on Comprehensively Strengthening Labor Education in Universities, Middle and Primary Schools in the New Era, which clearly proposed that labor education should be integrated into the whole process of talent cultivation. In July of the same year, the Guidelines for Labor Education in Primary, Secondary, and Tertiary Schools (Trial), issued by the Ministry of Education, systematically arranged the objectives, contents, implementation approaches, and evaluation mechanisms of labor education. It marks that labor education has risen from skill training in the traditional sense to an important part of the national education strategy, and has become the only way to train new people in the era of national rejuvenation.

However, looking at the current implementation status of labor education in colleges and universities shows its educational effectiveness has not been fully released. Wang Yang's investigation pointed out that most colleges and universities lack special feasibility teaching plans, and labor education tends to be fragmented and formalized (Wang, Y., 2020, pp. 103-108). Le Xiaorong and others further confirmed that there are obvious shortcomings in college labor education in terms of atmosphere cultivation, content provision, and policy support, and the dispersion of carriers makes it difficult to form collaborative educational forces (Le, X. R., & Hu, L., 2020, pp. 96-101). What's more serious is that there is a certain degree of deviation in college students' labor values. Jian Chaozong and Zhang Yonghong's survey shows that some students have phenomena such as "valuing mental labor over manual labor", "materialization of labor value orientation" and "discrepancy between knowledge and practice" (Jian, C. Z., & Zhang, Y. H., 2019, pp. 71-76). This cognitive deviation directly leads to tokenistic labor education and makes it difficult to touch students' hearts. Meanwhile, Project-Based Learning (PBL), as a student-centered and real problem-oriented teaching paradigm, has attracted more attention in educational reform owing to its emphasis on active exploration and interdisciplinary integration. Su Rui claims that interdisciplinary project-based learning, which is based on multidisciplinary knowledge and concreted on problem solving, can effectively connect theoretical learning and social practice (Su, R., 2025, pp. 3-7). Introducing project-based learning into labor education is not only an innovation in teaching methods, but also the restructuring of the logic of talent cultivation. By creating real labor situations, it guides students to experience the hardships of labor, enjoy the joy of labor, and learn labor skills in the process of solving practical problems, so as to overcome the stubborn diseases of traditional labor education.

According to this study, relying on the online course platform, designs and implements a labor practice curriculum including 10 projects. The study aims to answer the following three core questions based on empirical data: First, what is the real situation and pain points of college students' labor education? Second, can project-based learning improve the educational effect of labor education effectively? Third, how to build a replicable and promotable project-based labor education practice model? Through in-depth discussion of these questions, we hope to provide a theoretical basis and practical examples for the implementation of labor education in colleges and universities in the new era.

2. Literature Review

2.1 The Theoretical Foundation of Labor Education

The legitimacy of labor education is rooted in the basic principles of Marxism. As Marx states in Das Kapital, "The combination of productive labor with intellectual education and physical education... is the only way to create people with comprehensive development." This assertion deeply reveals the ontological status of labor in the all-round development of individuals. In The Part Played by Labour in the Transition from Ape to Man, Engels further clarified the scientific proposition that "labor creates

man himself" and established the philosophical basis of labor as the essential activity of humankind.

Entering the new era, General Secretary Xi Jinping's series of important statements on labor education have pointed out the direction for labor education in colleges and universities. At the National Education Conference in 2018, General Secretary Xi Jinping emphasized that we should "carry forward the spirit of labor, educate and guide students to uphold and respect labor," and pointed out that labor is the most glorious, noble, great, and beautiful undertaking. This is not only the inheritance and development of the Marxist labor doctrine, but also the requirements for talent cultivation standards in the new era. Professor Tan Chuanbao further pointed out that the core of labor education is to "make 'labor' a kind of 'education,' that is, to realize value guidance and character shaping through the labor process" (Tan, C. B., 2022, pp. 97-104). These theories jointly constitute the logical starting point of this project-based labor education design.

2.2 The Theoretical Connotation and Educational Value of Project-Based Learning

Project-based learning (PBL) originated from John Dewey's theory of "learning by doing" and evolved from William Heard Kilpatrick's project method. It has now become a globally recognized deep learning model. Its core characteristics are as follows: driven by real and complex problems; emphasizing students' independent exploration and collaborative construction; paying attention to the migration and application of interdisciplinary knowledge; focusing on the experience of the learning process and the public display of the results.

In the field of labor education, project-based learning (PBL) shares a high degree of internal compatibility with the inherent requirements of labor education. Firstly, they both emphasize "practicality"; secondly, they both focus on "comprehensiveness" and demand the integrated application of multidisciplinary knowledge to solve practical problems; thirdly, they both center on "educational nurturing" and aim at cultivating the ability to solve problems and correct values. Introducing PBL into labor education can concretize the abstract labor concept into specific project tasks, so that students can learn how to be a decent person through practical work, so as to realize the transformation from passive acceptance of labor to active exploration of labor, and effectively avoid the boredom caused by simple physical consumption.

2.3 Contributions and Shortcomings of Existing Research

In recent years, there have been a lot of research findings on labor education in the academic community. On the one hand, scholars focus on the policy interpretation and value connotation of labor education. For example, Liu Xiangbing analyzed the new connotation of labor education in the new era (Liu, X. B., 2018, pp. 17-21), and Peng Zeping discussed its practical strategy (Peng, Z. P., & Zou, N. F., 2020, pp. 1-5). On the other hand, the theoretical research on PBL is also becoming more and more mature, containing multiple dimensions such as model construction, discipline application, technical support, and so on.

Nevertheless, there are obvious gaps in existing research. Firstly, there are lots of macro-level policy studies on labor education, but few micro-level specific teaching model designs; there are lots of general theoretical studies on PBL, but a lack of empirical research to deeply integrate it with specific courses (such as labor education). Secondly, the evaluation system remains simplistic. Traditional labor education evaluations focus on the final labor results or attendance rate and ignore the emotional experience and value changes of students in the process of labor.

Based on this, this study tries to make up for these shortcomings and provide detailed empirical data by building a hybrid online-offline PBL education model for enriching the theoretical and practical results in this field.

3. Research Design and Curriculum Design

3.1 Research Framework and Object

This research adopts a mixed research method and follows the technical route of "theoretical construction—curriculum design—current situation analysis—practical verification."

The research participants are undergraduates majoring in education technology from the 2022 to 2024 grades at a university. 210 valid questionnaires were collected in the pre-test, and 164 valid questionnaires were recovered in the post-test. The sample covers different grades, of which males account for about 22% and females account for about 78%, which is in line with the characteristics of the student source structure of the major and has good representativeness.

3.2 Interview Design and Implementation

In order to gain an in-depth understanding of students' learning status, the researchers conducted a semi-structured interview with 15 students, covering five dimensions: prior labor experience, cognition of labor education, motivation for participation, understanding of PBL, and suggestions for the curriculum. After transcription and coding, the interview data are used to guide the subsequent design of course content and provide qualitative support for the interpretation of quantitative data.

3.3 Questionnaire Survey Tools

The questionnaire design is divided into three parts:

1) Basic information: including grade, gender, and other demographic variables.

2) Labor education cognition: based on relevant literature to measure students' understanding of the connotation and value of labor education.

3) Learning experience and satisfaction: evaluate the implementation effect of the course and the improvement of students' ability.

3.4 Project-based Course Design Based on an Online Platform

Relying on a mature online teaching platform, this research has built a labor education curriculum system containing 10 projects, with a total of 63 tasks. The curriculum design strictly follows the six elements of PBL: core knowledge, driving questions, high-order cognition, learning practices, public

results, and whole-process evaluation.

3.4.1 Curriculum Project Structure

The course content breaks the stereotype of traditional labor education, which is limited to "sweeping the floor and wiping the table," covering multiple dimensions such as labor skills, labor spirit, awareness of the rule of law, social responsibility, and ecological environmental protection (see Table 1).

Table 1. Program-based Labor Education Curriculum Structure and Educational Objectives

Serial number	Project name	Learning materials task points	Chapter test task points	The core goal of educating people
1	DIY waste items	5	1	Innovative thinking, the quality of diligence and frugality
2	Pay attention to green energy	5	1	Scientific spirit and environmental protection awareness
3	Labor-themed debate competition	5	1	Dialectical thinking and labor concepts
4	Little Guardian of Labor Law	5	1	Literacy of the rule of law, protection of rights and interests
5	The spirit of labor	5	1	Value recognition and dedication
6	Community care	5	1	Awareness of service and a sense of social responsibility
7	Planting plants in the dormitory	5	1	Life concept, patience, and meticulousness
8	Energy conservation and emission reduction on campus	5	1	Low-carbon life and habit formation
9	Garbage classification on campus	8	1	Public morality and execution ability
10	Campus greening and environmental protection	5	1	Ecological civilization and practical ability

Note. There is a total of 63 task points in all the projects, covering document reading and video learning.

3.4.2 Design of Learning Materials

Each project is equipped with a structured learning resource package. Take the "Community Care" project as an example. The resource package includes: the PowerPoint Warm Transmission, Building Harmony—Community Care Action for contextual introduction, a Learning Objectives document for task navigation, a Project-Based Learning Plan Design document for methodological guidance, and an

Evaluation Indicators document as evaluation criteria. In addition, supported by real labor case videos, it enhances students' sense of situational immersion through audio-visual dual-channel stimulation.

3.4.3 Chapter Test Design

In order to strengthen theoretical cognition, there is a chapter test after each project. The design of the test focuses on integrating theory with practice and avoids mechanical memorization. For example, the test questions of the "Community Care" project include: "Which of the following does not belong to the basic characteristics of the community?" (Correct answer: D. Homogeneity); "Which of the following does not include the role of student volunteers in the community?" and so on. Instant feedback mechanisms are adopted to help students consolidate their theoretical foundation of labor education.

3.4.4 Evaluation Scale Design

Different from the traditional one-dimensional evaluation, this study designs a multi-dimensional process evaluation scale. Take the "Labor Spirit" project as an example. The scale includes five dimensions: knowledge understanding (10 points), spiritual improvement (10 points), skill mastery (10 points), innovative awareness (10 points), and teamwork (10 points). The main body of evaluation adopts a combination of self-evaluation and teacher evaluation, which not only respects students' dominant position but also gives full play to the teachers'guiding role.

3.4.5 Course Implementation Process

The course is implemented for one semester and is promoted in strict accordance with the standard process of PBL:

1) Project release: teachers release tasks online and clarify the goals and time limits.

2) Group topic selection: students form teams freely (5-6 persons in one group) and select projects through brainstorming.

3) Program design: the group writes the implementation plan to clarify the division of labor and schedule.

4) Practical implementation: carry out offline labor practice and submit process materials (such as photos, logs, and videos) through the platform.

5) Achievement display: hold an online/offline achievement report meeting at the end of the term and conduct peer evaluation.

6) Evaluation feedback: teachers score the project according to the evaluation scale, and write comments.

4. Research Findings

4.1 Examination of the Current Situation of Labor Education in Colleges and Universities

4.1.1 Limited Form and Lack of Experience

The interview materials reveal the current embarrassing situation of labor education in colleges and universities. The vast majority of students said that the existing labor education is mainly limited to daily cleaning work such as "campus cleaning" and "dormitory hygiene inspection." A junior student said frankly, "It's nothing but cleaning chores and watching online courses; it merely feels like completing the task." Another student mentioned: "The so-called practical training only involves practicing blackboard writing in simulation classrooms, which has little to do with real labor." This kind of low-level and repetitive manual labor lacks care for mental labor and creative labor, which is easy to cause students' resistance, and it is difficult to achieve the educational goal of fostering morality through labor.

4.1.2 Cognitive Bias, One-sided Understanding

The pre-test questionnaire data reveal a prominent narrow bias in students' understanding of labor education. Although 91.9% of students accept the "learning and inheritance of the spirit of labor," in specific options, 94.76% of students equate labor education with "cultivation of practical skills," and 86.19% of students regard it as "exercise of manual labor" (see Table 2). This reflects that students subconsciously still regard labor education as a kind of skill training or physical exertion and lack understanding of the implicit value of labor education in fostering sound personality and improving social adaptability.

Table 2. Cognitive Distribution of Students' Understanding of Labor Education (N = 210)

The dimension of Understanding	Number of respondents selecting this option	Selection proportion
Cultivation of practical skills	199	94.76%
Learning and inheriting the labor spirit	193	91.90%
Exercise of physical labor	181	86.19%
Cultivation of the labor concept	177	84.29%
Cultivation of labor habits and quality	171	81.43%
Improvement of labor capacity	164	78.10%

Note. This is a multiple-choice question, and the total proportion exceeds 100%.

4.1.3 Insufficient Internal Motivation and Over-reliance on External Incentives

Regarding the participation motivation, a phenomenon found in the interviews should be alarmed: the motivation for students to participate in labor education mainly comes from external reward and punishment mechanisms. Some students said directly, "If there are credits or comprehensive assessment points, everyone will definitely be willing to go." The pre-test data support this view. Only 40% of students believe that the existing labor education "fully meets" their needs, while 4.76% of students clearly say that it is "not very satisfying." It shows that the current labor education has not yet inspired students' internal sense of identity and still maintains the passive stage of "requiring me to work".

4.2 Cognitive Basis and Expectations of PBL

4.2.1 Degree of Cognition: Conceptual, Lack of Practice

The pre-test data show that students are familiar with PBL. 36.67% of the students said that they "know very well and have participated many times," and 59.05% of the students said that they "know a little but have never participated." During interviews, some students can interpret the connotation of PBL accurately, such as "using multidisciplinary knowledge to solve real problems." It shows that the promotion of project-based labor education in colleges and universities has a good cognitive foundation, and its key challenge is transforming ideas into specific teaching actions.

4.2.2 Application Expectations: Focus On Ability and Seek Practical Results

Students are generally optimistic about the application prospects of PBL in labor education. 56.19% of students are "very optimistic," and 43.81% of students think it's "potential." In terms of expected improvement, "labor capacity" (90.00%) and "labor spirit" (87.62%) ranked the highest, followed by "teamwork ability" (74.76%) and "innovative thinking" (74.76%) (see Table 3). This shows that students are eager to improve their comprehensive quality through labor education rather than completing required credits, which provides a clear direction for curriculum reform.

Table 3. The Distribution of the Promotions That Students Hope To Get Through the Course (N = 210)

The dimension of improvement	Selection proportion
Labor ability	90.00%
Labor spirit	87.62%
Labor concept	85.71%
Labor habits and qualities	85.24%
Innovative thinking	74.76%
Teamwork ability	74.76%
Practical ability	68.57%

Note. This is a multiple-choice question, and the total proportion exceeds 100%.

4.3 Empirical Analysis of the Implementation Effect of the Curriculum

4.3.1 Cognitive Deepening: From Superficial Engagement to Sincere Recognition

Post-test data show that PBL has improved students' cognitive level of labor education significantly. 82.32% of students thought that their understanding of labor education was "remarkable deepening," and only 1.22% of students said that "no change." In terms of demand satisfaction, 70.73% of students believed that the course "fully meets" their learning needs, which is much higher than the 40% of the pre-test. More importantly, 81.1% of the students expressed that they were "extremely willing" to take the initiative to participate in future labor activities, marking an attitudinal shift from "force to work" to "eager to labor."

4.3.2 Ability Improvement: Remarkable All-round and Multi-dimensional Growth

In the self-assessment of ability improvement, all indicators have been greatly improved. Among them, "labor capacity" (91.46%), "labor spirit" (89.63%), and "labor concept" (89.02%) have the largest increase (see Table 4). This result is highly consistent with the core objective of labor education put forward by Tan Chuanbao, which proves the unique advantage of PBL in value shaping. In addition, the improvement of teamwork ability (70.73%), practical ability (65.24%), and innovative thinking (64.63%) verifies the effectiveness of this model in cultivating students' comprehensive literacy.

Table 4. Distribution of Students' Self-Perception of Ability Improvement (N = 164)

The dimension of improvement	Selection proportion
Labor ability	91.46%
Labor spirit	89.63%
Labor concept	89.02%
Labor habits and qualities	77.44%
Teamwork ability	70.73%
Practical ability	65.24%
Innovative thinking	64.63%

Note. This is a multiple-choice question, and the total proportion exceeds 100%.

4.3.3 Method Recognition: High Satisfaction and Strong Recommendation Intention

Students have a high evaluation of the PBL education method itself. 86.59% of students believed that its application in labor education is "very effective." In the analysis of specific beneficial factors, "practical operation deepens the understanding of theoretical knowledge" (92.68%) ranks first, followed by "teamwork improves communication and collaboration ability" (78.05%). In the end, 86.59% of students were "very satisfied" with the course, and 89.02% of students were "willing to recommend" the course to other students. These data confirm the vitality of the PBL education model from the perspective of learners.

4.4 In-depth Revelation Revealed By Qualitative Research

The analysis of interview data further enriched the research conclusions and revealed the key details in the implementation of the course.

First, interdisciplinary integration is a breakthrough. Students generally suggested that labor education should be combined with professional characteristics. For example, students majoring in educational technology believed that they could use their professional strengths to make micro-courses on labor themes or conduct educational poverty alleviation programs, which is more meaningful than simple physical cleaning.

Second, formal innovation is a catalyst. Students look forward to more practical activities based on real social needs, such as rural revitalization investigations, environmental protection actions, etc., and they suggest introducing a labor competition mechanism to stimulate enthusiasm through role models.

Third, system design is the guarantee. Students pointed out that PBL education should not be reduced to free activities without supervision but should emphasize the guiding role of teachers and pay attention to cultivating students' planning ability, problem-solving ability, and critical thinking in project implementation.

5. Construction of a Labor Education Practice Model Based On Project-based Learning

Based on the above theoretical and empirical analyses, this study builds a five-in-one labor education practice model of "goal guidance, project design, platform support, process implementation, and multiple evaluation." This model forms a closed-loop system in which all links support one another and jointly serve the educational goal of labor education.

5.1 Goal Orientation: Setting the Guiding Star for Value Orientation

The primary question of labor education is "what kind of talents to cultivate." The first ring of this model emphasizes goal guidance and integrates the Marxist concept of labor into the whole process of PBL.

5.2 Project Design: Building a Powerful Engine for Real-world Situations

Project design is the core of the whole model. High-quality labor projects should have four characteristics:

1) Authenticity: projects originate from real life, such as "campus waste sorting" and "community care," so that they can make students feel the social value of labor.

2) Comprehensiveness: projects break down disciplinary barriers. For example, the project "paying attention to green energy" integrates multidisciplinary knowledge such as physics, chemistry, and politics.

3) Challenge: The projects are moderately difficult and follow the "reachable with effort" principle, such as "DIY waste items," to test innovative thinking.

4) Operability: projects combine school resources with students' practical conditions to ensure that projects are implemented effectively. Through well-designed projects, labor education has changed from "preaching" to "doing."

5.3 Platform Support: Constructing New Digital Infrastructure Empowered By Digital Technology

The online platform is the link that connects before, during, and after class. Its functional positioning includes:

1) Resource integration: centrally manage PPT, videos, documents, and other resources to support mobile learning.

2) Process management: automatically record the learning time, homework submission, and test results to realize the visualization of the learning trajectory.

3) Interactive communication: provide forums, bulletin boards, and other functions to break the time and space restrictions, which is convenient for teachers and students' discussions.

4) Evaluation feedback: support online reviews and data analysis to provide a basis for teaching improvement.

In this study, the high access rate and completion rate of the platform prove the effectiveness of its supporting role.

5.4 Process Implementation: Activate the "Power Source" of Organizational Advantages

Process implementation is the key to turning the blueprint into reality. This model emphasizes:

1) Teamwork: divide 5-6 students into heterogeneous groups to facilitate complementary strengths and cultivate a teamwork spirit.

2) Dual-track guidance: establish a "tutor + peers" guidance system; teachers guide the direction, and excellent seniors share experience.

3) Virtual-real integration: learning theory online and carrying out practical activities offline; they complement each other.

4) Cultural infiltration: create a campus cultural atmosphere of "glorious labor" through achievement exhibitions, commendation meetings, and other forms.

5.5 Diversified Evaluation: Making Good Use of the Baton for Quality Monitoring

Evaluation is the baton and determines the direction of labor education. This model builds a three-dimensional evaluation system:

1) Equal emphasis is placed on both process and outcomes: not only look at the final labor results (such as works and reports), but also attach more importance to participation, collaboration, and innovation in the process.

2) Combination of quantitative and qualitative assessment: it includes quantitative data such as test scores, as well as qualitative analysis based on teachers' comments and peer evaluation.

3) Self-evaluation and other evaluations complement each other: students reflect through self-evaluation, and teachers offer corrective feedback through external evaluation.

This three-dimensional evaluation method reflects students' labor literacy more comprehensively and objectively.

6. Conclusions and Suggestions

6.1 Research Conclusion

Based on empirical analysis, the following main conclusions are drawn from this study:

First, the compatibility is verified. PBL and labor education for college students have a high degree of inherent compatibility in concept and practice. PBL, driven by real problems, emphasizes the characteristics of interdisciplinary integration, which effectively solves the problem of "labor without education" in traditional labor education.

Second, the pain points still exist. At present, labor education in colleges and universities is facing real dilemmas such as single modes, students' cognitive bias, and insufficient internal motivation. There is an urgent need for a systematic change in the teaching mode.

Third, the effect is remarkable. The labor education curriculum based on PBL has significantly improved students' labor awareness and comprehensive practical ability, especially in shaping labor concepts and cultivating teamwork ability.

Fourth, the model is feasible. The five-in-one model of "goal guidance, project design, platform support, process implementation, and multiple evaluation" provides an operable practical framework for the standardized implementation of labor education in colleges and universities.

6.2 Practical Suggestions

Based on the research conclusions, the following suggestions are put forward:

1) Strengthen the top-level design and integrate it into the talent training programs. Colleges and universities should integrate project-based labor education into the compulsory curriculum system, formulate detailed implementation plans, and clarify the credit distribution and guarantee mechanism to prevent labor education from being marginalized.

2) Cultivate project design and highlight disciplinary characteristics. To avoid uniform identical programs across all universities, universities and colleges should encourage each major to develop projects according to its own characteristics. For example, science and engineering majors can focus on engineering practice and innovative invention, and liberal arts majors can focus on social research and cultural inheritance, so as to realize the organic connection between labor education and students' career development.

3) Promote digital transformation and build smart platforms. Increase investment to build a labor education cloud platform integrating resource management, process monitoring, and data analysis, and use big data technology to generate precise student portraits to achieve personalized guidance.

4) Improve the evaluation mechanism and strengthen the application of results. Establish files of students' labor literacy, and combine process evaluation with final evaluation. Take the results of labor literacy evaluation as an important reference for evaluation of excellence and graduation assessment, and give full play to the guiding function of evaluation.

6.3 Research Limitations and Prospects

Although this research has achieved certain results, there are still limitations: first, the sample is limited to undergraduates in a single major, which means that the representativeness needs to be improved; second, the research cycle lasts merely one semester, and there is a lack of long-term tracking data; third, a control group is not set up, and it is difficult to completely remove interference factors such as the Hawthorne effect.

Future research can be improved in the following aspects: first, carry out multi-center research across different universities and majors to verify the universality of this model; second, carry out vertical tracking to examine the long-term impact of labor education; third, introduce quasi-experimental design and strictly control irrelevant variables; fourth, explore the application of new technologies such as artificial intelligence and virtual reality in labor education, so as to further enrich the theoretical and practical connotation of project-based labor education.

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