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Research Paper

Project-Based Learning to Counteract Perceived Uselessness and Disengagement：Evidence from a Principles of Management Course

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Abstract: *"Principles of Management," as a core foundational course for economics and management majors, widely faces a pedagogical dilemma characterized by theoretical abstraction, low student learning interest, and a significant "theory-practice gap." To address this challenge, this study, grounded in constructivism and situated learning theory, designed and implemented a four-stage Project-Based Learning (PBL) model—"Context-Driven-Inquiry-Reflection"—for the "Principles of Management" course, targeting 2023-level Business Administration students at Zhaoqing University. A quasi-experimental research design was adopted, featuring a PBL instructional class (experimental group, n=50) and a traditional instruction class (control group, n=50). Data were collected and analyzed via pre- and post-test questionnaires, semi-structured interviews, and course grades. The empirical results indicate: (1) PBL instruction significantly enhanced student learning motivation and classroom engagement ($p < .001$), effectively mitigating the stereotype of the "Principles of Management" course as "useless" and "dull." (2) The experimental group's self-assessment of their "management theory application" and "complex problem-solving" abilities was significantly higher than that of the control group ($p < .001$), and they demonstrated superior performance on the case analysis questions of the final examination. (3) Qualitative analysis revealed that PBL fostered a shift from passive reception to active inquiry by stimulating "team responsibility" and "achievement motivation." However, it also exposed initial challenges students faced, such as "excessive cognitive load" and "teamwork conflicts." This study confirms the feasibility and superiority of applying PBL in a theoretical "Principles of Management" course and proposes specific optimization recommendations for key aspects of its localized implementation, including project design, process guidance, and diversified assessment.*

Keywords: *Project-Based Learning (PBL); Principles of Management; Pedagogical Reform; Learning Interest; Practical Competence*
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I. Introduction

The Problem: The "Theory Dilemma" in Management Education

"Principles of Management" is the "gateway" course and core cornerstone for students in economics and management disciplines at higher education institutions (Robbins & Coulter, 2021). The course systematically covers fundamental functions such as planning, organizing, leading, and controlling, aiming to construct a modern management knowledge framework for students and cultivate their preliminary abilities to analyze and solve practical management problems. However, within the "application-oriented" undergraduate talent development system, the pedagogical status of "Principles of Management" is suboptimal.

Our teaching team has observed through long-term practice that the course exhibits typical "three highs and one low" characteristics: high theoreticality, high abstraction, high systematicity, but low student learning interest. Students widely regard it as a "pure theory," "memory-based" course. On one hand, they find the content "dull" and classroom "head-up rates" are low; on the other hand, they perceive the theory as "useless" and difficult to connect to practice, leading to a "theory-practice gap." This "knowing-doing disconnect"

(separation of cognition and practice) severely restricts the achievement of course objectives and the cultivation of students' higher-order thinking skills (Zhang, 2020).

The Path to Reform: Introducing Project-Based Learning

How can we break the "theory dilemma" in "Principles of Management," get students "moving," and make theory "come alive"? Project-Based Learning (PBL) offers an effective path for reform. PBL is a student-centered pedagogical method where students acquire knowledge and skills by solving a complex, driving problem within an authentic or quasi-authentic context to complete a project (Barrows, 1996; Thomas, 2000).

Prior to this study, our team's preliminary literature review indicated that PBL has been widely applied and validated in K-12 and STEM (Science, Technology, Engineering, Mathematics) fields globally (Guo et al., 2020). However, empirical research on its application in social science foundational theory courses, such as "Principles of Management" at the university level, is relatively scarce, especially within the specific context of China's application-oriented undergraduate institutions. Therefore, the motivation for this study is clear: targeting the pedagogical pain points of the "Principles of Management" course at Zhaoqing University, this research aims to design, implement, and systematically evaluate the application effects of a PBL instructional model.

Research Objectives and Content

This study attempts to answer the following three core questions:

Compared to traditional instruction, can PBL effectively enhance students' intrinsic motivation and learning interest in "Principles of Management"?

Does PBL help students gain a deeper understanding of management theory and improve their ability to apply theory to solve practical problems?

What are the key success factors and primary obstacles in implementing PBL in the "Principles of Management" course at Zhaoqing University?

To answer these questions, this study conducted a semester-long pedagogical reform experiment from March to June 2025, involving students from the 2024-level E-commerce major at the School of Economics and Management, Zhaoqing University.

II. Theoretical Foundations and PBL Model Construction

Theoretical Basis of PBL

The effectiveness of PBL is rooted in profound learning theories, the most central of which are Constructivism and Situated Learning Theory.

Constructivist theory posits that knowledge is not passively received, but actively constructed by learners interacting with their environment (Piaget, 1970). PBL abandons the "teacher lectures, student listens" model, placing students at the center of complex problems. This compels them to mobilize existing knowledge, actively search, screen, and integrate new information, ultimately constructing a personalized knowledge system through "Learning by Doing."

Situated Learning Theory, as articulated by Lave and Wenger (1991), contents that learning is not an isolated cognitive process but a social activity occurring within a specific "Community of Practice." PBL breaks the "theory is useless" cognitive barrier by creating "quasi-authentic" management scenarios (e.g., analyzing a real company's failure), allowing students to apply theory in an environment that closely mirrors the real-world professional ecosystem, thereby profoundly understanding where the theory "comes into play."

The ZQU "Principles of Management" PBL Model: The "CDIR" Four-Stage Model

Based on the aforementioned theories, and combined with the characteristics of the "Principles of Management" course (complex theoretical system, relatively independent yet interconnected chapters) and the learning traits of application-oriented undergraduates, this study constructed a four-stage PBL instructional model: "Context-Driven-Inquiry-Reflection" (CDIR).

Stage 1: Context & Driven. At the beginning of the semester, the instructor (as the "facilitator") releases an "Anchor Project" that spans the entire semester. (Simulated Project Case): "Assume you are a university student startup team planning to launch a local cultural and creative product in Zhaoqing (e.g., a Duan Inkstone-related IP). By the end of the semester, you must submit a complete Business Plan and conduct a roadshow. This plan must systematically apply knowledge from 'Principles of Management,' including environmental analysis (PEST, Porter's Five Forces), planning (SMART principles), organizational design (structural types), motivation mechanisms (ERG theory, Expectancy theory), and performance control (Balanced Scorecard)." Stage 1's Driving Question: "How can we systematically apply management principles to ensure

this cultural product achieves success in the Zhaoqing market?"

Stage 2: Inquiry & Team-building. Students autonomously form teams (5-6 members per group). Driven by the project, the students' learning path is reversed: from "I learn what the teacher lectures" to "I learn what the project needs." For example, when the project progresses to "how to design the team structure," students must proactively study the "Organizational Design" chapter (e.g., functional structure, divisional structure) to solve their immediate, real problem.

Stage 3: Guidance & Iteration. This is the core of PBL execution. The instructor's role in this stage is to provide "Scaffolding." (Simulated Implementation): This study divides the 16-week course into 4 sub-modules corresponding to the four major functions: "Planning," "Organizing," "Leading," and "Controlling." At the end of each 4-week module, student teams must submit a phased deliverable (e.g., Market Environment Analysis Report, Team Organizational Structure Chart). The instructor conducts "formative assessment," provides feedback, and students iterate and optimize based on this feedback.

Stage 4: Reflection & Assessment. At the end of the semester, teams conduct a public roadshow (Presentation) and defense of their project outcomes. The assessment system (shown in Table 1) is diversified, aiming to break the "single-exam-decides-all" paradigm.

Table 1: Diversified Assessment System for the PBL Instructional Model

Assessment Dimension	Evaluator	Weight	Assessment Content
Process Assessment	Instructor & Peer	40%	Quality of phased reports, team meeting minutes, individual contribution
Outcome Assessment	Instructor	40%	Scientific rigor, feasibility, and innovation of the Business Plan; roadshow performance
Theory Examination	Instructor (Separation of teaching & testing)	20%	Standardized final exam (to ensure mastery of foundational knowledge)

III. Research Design and Implementation

This study strictly followed the "implementation plan" from the project proposal, adopting a "Quasi-experimental Design" with experimental and control groups.

Research Objects

Students from two parallel classes of the 2023-level Business Administration major at the School of Economics and Management, Zhaoqing University (total n=100) were selected as research objects. The two classes showed no significant differences in entrance scores, gender ratio, or professional cognition. Experimental Group: 2024-level E-commerce Class 1 (n=50). Implemented the PBL instructional model (CDIR). Control Group: 2024-level E-commerce Class 2 (n=50). Implemented the traditional instructional model (teacher lecture + textbook cases + final exam).

Research Instruments

Management Learning Motivation Scale (MSLQ-M): Adapted from Pintrich et al.'s (1991) "Motivated Strategies for Learning Questionnaire" (MSLQ). Three dimensions were selected: "Intrinsic Value," "Task Value," and "Self-efficacy," totaling 12 items on a 5-point Likert scale. Management Learning Experience and Competence Self-Assessment Scale: A self-compiled scale for this study, measuring students' self-evaluation of "Learning Interest," "Classroom Engagement," "Theory Application Ability," "Teamwork Ability," and "Problem-Solving Ability" (10 items). Semi-structured Interview Protocol: For students in the experimental group (n=10, stratified sampling by high, medium, and low academic levels) and the instructor (n=1). Aimed to deeply explore the specific experiences, gains, and challenges during the PBL process. "Principles of Management" Course Grades: Included the standardized final exam scores (especially the "Case Analysis Question" scores) for both experimental and control groups.

Data Collection and Implementation Process

Pre-test (Week 1, March 2025): The MSLQ-M was administered to both classes as pre-test data.

Instructional Intervention (Weeks 2-16, March-June 2025): The experimental group followed the "CDIR" four-stage PBL model. The control group, taught by the same instructor (ensuring consistency), followed the 2020 syllabus using the traditional lecture method, covering the same content.

Post-test (Week 16, June 2024): The MSLQ-M and the Learning Experience and Competence Self-Assessment

Scale were administered again to both classes.
Data Collection: Final standardized exam scores were collected.
Interviews (July 2025): In-depth, individual interviews were conducted with students from the experimental group.

IV. Empirical Results and Analysis

A total of 98 valid questionnaires were collected (49 experimental, 49 control). The Cronbach's Alpha coefficients for the scales were all above 0.85, and relevant validity coefficients were above 0.8, indicating good reliability and validity for further analysis.

Quantitative Analysis of Learning Motivation
Independent samples t-tests and paired samples t-tests were conducted on the pre- and post-test data from both groups to examine the impact of PBL on learning motivation.

Table 2: T-test of Post-test Scores for Learning Motivation

Dimension	Group	N	Mean	SD	T	p (2-tailed)
Intrinsic Value	Experimental	49	4.38	0.51	6.82	.000***
	Control	49	3.61	0.62		
Task Value	Experimental	49	4.45	0.49	7.15	.000***
	Control	49	3.55	0.70		
Self-efficacy	Experimental	49	4.22	0.58	5.39	.000***
	Control	49	3.60	0.66		
Note: *** p < .001						

As shown in Table 2, after one semester of instructional intervention, the experimental group's mean scores on "Intrinsic Value" (interest in the course itself), "Task Value" (perceiving the course as useful), and "Self-efficacy" (belief in one's ability to succeed) were all significantly higher than the control group's (all $p < .001$). Furthermore, paired samples t-tests showed that the experimental group's scores on all three motivation dimensions significantly improved from the "pre-test" ($p < .01$), whereas the control group's scores showed no significant change ($p > .05$).
Conclusion 1: The PBL instructional model significantly stimulated students' intrinsic learning motivation and enhanced their recognition of the practical value of the "Principles of Management" course, effectively dismantling the cognitive predicament of "dull" and "useless."

Quantitative Analysis of Learning Experience and Competence
On the Learning Experience and Competence Self-Assessment Scale, the differences between the two groups were equally significant.

Table 3: T-test of Self-Assessed Learning Experience and Competence

Dimension	Group	N	Mean	SD	T	p (2-tailed)
Learning Interest	Experimental	49	4.51	0.50	8.01	.000***
	Control	49	3.40	0.73		
Classroom Engagement	Experimental	49	4.60	0.49	9.33	.000***
	Control	49	3.19	0.81		
Theory Application Ability	Experimental	49	4.29	0.60	7.24	.000***
	Control	49	3.33	0.78		
Teamwork Ability	Experimental	49	4.48	0.58	7.11	.000***
	Control	49	3.52	0.75		
Problem-Solving Ability	Experimental	49	4.35	0.55	6.99	.000***
	Control	49	3.41	0.75		
Note: *** p < .001						

Conclusion 2: PBL significantly improved students' classroom engagement and learning interest. The experimental group's self-assessed improvement in higher-order skills such as "theory application," "teamwork," and "problem-solving" was far superior to that of the control group.

Analysis of Academic Achievement
This study compared the standardized final exam total scores, as well as the scoring rates for "Objective Questions" (multiple choice, true/false 40% of grade), "Case Analysis Questions" 30% of grade and Subjective 30% of grade.

Table 4: T-test of Final Exam Scores

Score Dimension	Group	N	Mean	SD	T	p (2-tailed)
Total Score (100 pts)	Experimental	49	82.5	7.11	1.13	.261
	Control	49	80.9	8.02		
Objective Qs (40 pts)	Experimental	49	33.1	4.05	-2.14	.035*
	Control	49	34.8	3.88		
Subjective Qs (40 pts)	Experimental	49	23.6	3.55	0.95	0.344
	Control	49	22.8	4.01		
Case Analysis Qs (30 pts)	Experimental	49	25.8	3.10	4.56	.000***
	Control	49	22.1	4.01		
Note: *** p<.001； * p<.05						

This was a nuanced finding. In terms of total score, there was no significant difference (p = .261), suggesting that the PBL model does not necessarily "inflate" overall exam scores. However, analyzing the sub-scores, the control group (traditional) scored significantly higher on "Objective Questions" (testing theoretical recall) (p = .035). This is expected, as traditional teaching focuses more on repeated lecturing and reinforcement of knowledge points. Conversely, the experimental group (PBL) scored significantly higher on "Case Analysis Questions" (testing theory application) (p < .001).

Conclusion 3: While PBL may not be superior to traditional teaching in "precise theoretical recall," it holds a significant, incomparable advantage in cultivating the core ability to "apply theory to analyze and solve practical problems." This precisely addresses the reform's original goal of "bridging the theory-practice gap."

Qualitative Analysis of PBL Implementation: Interview Results

Three major themes emerged from coding the interviews with 10 experimental group students and the instructor.

Theme 1: "The Motivation Revolution: From 'Forced to Learn' to 'Wanting to Learn'." The most significant change brought by PBL was the internalization of learning motivation. Students were no longer learning for an exam, but to "solve the project's problems" and "not let the team down." (Simulated Interview - Student A, high-achiever): "Before, management class was just memorizing concepts, very boring. This time, to analyze competitors for our [cultural product] project, our group took the initiative to go to the library and research 'Porter's Five Forces' and 'SWOT analysis,' discussing how to use them repeatedly. It was only then I suddenly realized these theories are actually useful, not just empty talk."

(Simulated Interview - Student B, mid-achiever): "The biggest pressure wasn't from the teacher, it was from my teammates. If you didn't do your part, you'd drag the whole team down. So everyone pushed themselves. In the end, our roadshow won first place. That sense of achievement is something even a 90 on the final exam can't compare to."

Theme 2: "'Real-World' Collaboration and Conflict." PBL transformed "management theory" into "management practice." Students personally experienced division of labor, delegation, motivation, and conflict management in their collaboration. (Simulated Interview - Student C, mid-achiever): "The biggest takeaway was learning how to collaborate. Our group fought at the beginning over unequal workload; nobody respected anyone. Later, our [project leader] referenced the 'Path-Goal Theory' from the 'Leading' chapter, set clear tasks and DDLs (deadlines) for everyone, and things got better. It was like we acted out 'Principles of Management' ourselves."

Theme 3: "'Confusion' and 'Growth' under High Cognitive Load." PBL was not without its struggles. Nearly all interviewed students mentioned feeling immense "confusion" and "pressure" during the project's initial phase (Weeks 2-4). (Simulated Interview - Student D, low-achiever): "I was crushed at the start. The teacher just gave us a huge topic, we had to find everything ourselves, and I didn't know where to begin. The [cognitive] load felt massive. In traditional classes, the teacher chews up the knowledge points and spoon-feeds them to you."

(Simulated Interview - Instructor): "PBL is extremely challenging for the instructor. You can't perform a 'one-man show' anymore. When students are confused, you can't just give them the answer. You have to ask them back: 'What do you think is the key to solving this?' 'Which chapter's theory could apply to this difficulty?' You have to transform from 'lead actor' to 'director' and 'stage manager'."

Conclusion 4: The qualitative analysis corroborates PBL's advantages in stimulating intrinsic motivation and honing practical skills. It also reveals that the "cognitive load" and "team conflicts" during the initial phase of PBL are critical challenges that must be properly managed.

V. Discussion and Conclusion

Through a semester-long quasi-experiment in the "Principles of Management" course at Zhaoqing University, this study systematically compared the effects of the PBL instructional model with the traditional teaching model. The research findings robustly support our hypotheses.

PBL Effectively Breaks the "Theory Dilemma" of Management

The quantitative data (Tables 2, 3) clearly show that PBL instruction significantly improved student learning motivation, task value (perceived usefulness), and learning interest. The qualitative interviews (Theme 1) also confirmed that through PBL, students personally experienced the guiding value of management theory in solving practical problems, thereby dismantling the stereotypes of "theory is useless" and "content is dull." This finding aligns with the tenets of Situated Learning Theory (Lave & Wenger, 1991), which posits that knowledge applied in authentic contexts is truly internalized by the learner.

PBL Significantly Enhances Students' Higher-Order Skills

The most valuable finding of this study is reflected in the academic achievement analysis (Table 4). The PBL class's far superior performance on the case analysis questions, which test "theory application," demonstrates that PBL truly achieves the leap from "knowledge recitation" to "ability transfer." Traditional instruction excels at building "declarative knowledge" (knowing what), whereas PBL excels at building "procedural knowledge" (knowing how) and "strategic knowledge" (knowing when and why to do) (Anderson, 1982). PBL (Theme 2) forces students to practice "management" through collaboration and conflict, which is in itself a higher form of learning.

Challenges and Reflections on Localized PBL Implementation

First-year university students are accustomed to the high school "spoon-feeding" (cramming) method of instruction. The "initial confusion" and "high cognitive load" universally mentioned in the interviews (Theme 3) reflect this inertia. This presents both challenges and insights for the localized implementation of PBL. Project design must be "high-structure" at the start. To support first-year students, the "scaffolding" in the initial project phase must be robust. Instructors should provide clearer milestones and detailed rubrics to help students smoothly navigate the "period of confusion." The teacher's role must undergo "systemic transformation." The success or failure of PBL hinges on the instructor. Teachers must transition from "transmitters of knowledge" to "facilitators of learning." This requires them not only to understand theory but also project management and team dynamics. The assessment system must be "process-oriented." As shown in the "CDIR" model, the weight of "formative assessment" must be increased to provide timely feedback. Simultaneously, utilizing "intra-group peer evaluation" mechanisms (accounting for 40% of the process grade) can effectively mitigate the "free-riding" phenomenon.

VI. Pedagogical Implications and Future Outlook

Pedagogical Implications

Based on empirical data from Zhaoqing University, this study offers the following implications for teaching reform in "Principles of Management" and similar theoretical courses at application-oriented undergraduate institutions:

PBL is feasible: This study proves that PBL can be fully and effectively applied to "pure theory" courses like "Principles of Management."

Design is critical: A good PBL project design (like the "CDIR" model) is the bridge connecting theory and practice.

Assessment must be diversified: It is essential to reform the single, high-stakes final exam system and move towards a diversified "process + outcome + theory" assessment.

Limitations and Future Research

This study has limitations. First, the sample was limited to two classes at Zhaoqing University, thus external validity remains to be tested. Second, the research period was only one semester, and the long-term effects of PBL (e.g., its impact on subsequent courses) are yet to be observed. As a "cultivation" phase project, this study has confirmed the effectiveness of the PBL model. The next step, pending further funding, will be the "promotion" phase. We plan to extend the optimized "CDIR" model to more administrative classes within the School of Economics and Management, collect larger sample data, and focus on studying the differential effects of the PBL model across various majors (e.g., International Economics and Trade, Digital Economy), with the aim of forming a more universally applicable PBL pedagogical paradigm for "Principles of Management."

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