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# Construction and Practical Research on the Problem-Based Learning (PBL) Teaching Model for the Investment Banking Course in the Digital Context

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**Abstract:** Traditional instruction in Investment Banking courses often relies on outdated case studies and lacks sufficient alignment with real-world professional practices. In response, this study constructs and empirically validates a digital-integrated Problem-Based Learning (PBL) framework tailored to the pedagogical characteristics of Investment Banking education. Guided by the principle of aligning problem orientation with technological facilitation to enhance competency development, the proposed model incorporates syllabus optimization, instructional pathway design, and the integration of digital teaching resources. A questionnaire-based empirical evaluation demonstrates statistically significant improvements in students' learning engagement, knowledge retention, and applied professional competencies. The findings not only verify the effectiveness of the proposed framework but also provide a replicable and scalable approach for advancing digital pedagogy and applied talent cultivation in finance-related disciplines.

**Keywords:** Digital Pedagogy; Problem-Based Learning (PBL); Investment Banking Education; Financial Talent Development

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## 1. Introduction

The digital transformation of higher education has become a core direction in China's national education reform. The Chinese Ministry of Education explicitly proposed deepening strategic initiatives for educational digitalization in its "2024 Work Priorities"<sup>[1]</sup>. Against this backdrop, the teaching reform of traditional courses in higher education institutions is imperative<sup>[2]</sup>. As a core course in economics majors, the teaching quality of Investment Banking directly impacts the supply quality of talents in the financial industry. However, China's investment banking sector is undergoing rapid development in tandem with regulatory improvements. The revisions of the "Measures for the Administration of Securities Issuance and Underwriting" in March 2025, the "Regulations on the Supervision and Administration of Listed Companies" in May 2024, as well as the "Measures for the Administration of Initial Public Offering Stock Registration" (February 2023), and the new version of the "Securities Law" (June 2020), alongside other key policies, have driven rapid iterations in industry logic and business models, leaving traditional teaching models increasingly inadequate for meeting the industry's talent cultivation needs<sup>[3]</sup>.

The integration of PBL teaching method and digital platforms provides a viable pathway to address the aforementioned challenges. However, the integrated application of the two in the Investment Banking course still

represents a research gap: existing literature mostly discusses the PBL teaching method or digital teaching in isolation from one another, lacking systematic empirical research or case studies that place both within a cohesive, unified analytical framework<sup>[4]</sup>.

Based on this, this study focuses on the core proposition of “construction and practical application of the PBL teaching model for Investment Banking in the digital context”. The research objectives include: First, constructing a three-dimensional teaching system encompassing teaching resources, instructional methods, and evaluation mechanisms; Second, verifying the model’s effectiveness in enhancing students’ professional competencies. This study aims to fill the existing research gap in this subfield and provide a referable teaching reform framework for similar applied finance courses.

## **2. Teaching Objectives of Investment Banking and Limitations of Traditional Teaching Methods**

The teaching objectives of Investment Banking are to cultivate preparatory talents with solid professional knowledge, proficient practical skills, strong problem-solving capabilities, and professional ethics that match investment banking positions - a goal that differs significantly from the emphasis on theoretical elaboration in general economics courses. Given the strong practical orientation of investment banking roles, this course is not merely about knowledge transmission or superficial skill training, but rather a systematic integration of theory, practice, and cognitive development. This integration imposes higher requirements on teaching methods, particularly in terms of interactivity and scenario simulation<sup>[5]</sup>.

In terms of teaching resources, those adapted to the course’s characteristics must meet the criteria of precision, timeliness, and representativeness. For case resources, they need to cover real-world cases across diverse business segments of investment banking (e.g., IPO underwriting, mergers and acquisitions, bond issuance); for regulatory resources, policy documents must be updated in real time to prevent teaching deviations caused by outdated regulatory provisions.

Traditional lecture-based teaching methods exhibit evident limitations in Investment Banking instruction<sup>[6]</sup>, primarily in two aspects: First, traditional classrooms rely on one-way knowledge transmission by instructors, which prevents students from intuitively grasping the core challenges and decision-making logic in real-world transaction scenarios. This approach often results in students mastering theoretical concepts but failing to apply them effectively in practical contexts. Second, the aforementioned traditional teaching methods cannot meet the demands for dynamic updates of course content. Traditional teaching relies on fixed textbooks and pre-prepared lesson plans, which have long update cycles - making it difficult to timely incorporate the latest industry developments and regulatory changes, and ultimately leading to a disconnect between teaching content and current market realities. Therefore, Investment Banking instruction requires more flexible and diverse teaching methods. These methods should fully leverage the information-sharing advantages of digital platforms to enhance students’ learning engagement and hands-on operational capabilities<sup>[7]</sup>.

## **3. Synergistic Logic and Advantages of PBL Teaching Method and Digital Platforms**

In Investment Banking teaching, the use of PBL teaching method and digital platforms is not a superficial combination or simple overlay; instead, it forms a cohesive synergistic teaching system built on the core logic of “problem-driven - technology-supported - competency realization<sup>[8]</sup>.”

From the perspective of synergistic logic, this integration breaks through the limitations of single teaching methods, forming a complete closed loop of “demand - supply - feedback.” The PBL teaching method takes real-world industry problems as its core driver, relying on up-to-date case resources, collaborative learning scenarios, and whole-process

progress tracking to advance toward teaching objectives. By contrast, digital platforms offer unique technical advantages in teaching resource integration, real-time interactive communication, and learning data recording - capabilities that provide critical technological support for the effective achievement of PBL-driven teaching goals<sup>[9]</sup>.

From the perspective of synergistic advantages, the integration of the PBL teaching method and digital platforms optimizes Investment Banking teaching in three main aspects. First, it enhances the timeliness of cases and teaching materials. PBL relies on cases and regulations that must be updated in real-time to reflect changes in industry policies and market transactions. Digital channels can facilitate this by synchronizing authoritative information from sources such as the official website of the Chinese CSRC and research analyses from securities firms, ensuring PBL problem designs always align with industry changes. Second, it optimizes students' learning experience. Under the guidance of digital platforms, students not only transform theoretical knowledge into practical skills during problem-solving but also achieve a sense of accomplishment and build confidence, thereby enhancing their intrinsic motivation to learn. Third, it enhances the controllability of the teaching process. Digital platforms can integrate PBL-required case libraries, regulatory libraries, and toolkits, thereby reducing instructors' repetitive preparation time. Additionally, through data recording, these platforms clearly present students' performance at each stage, facilitating timely adjustments to teaching strategies. This approach avoids issues commonly encountered in traditional PBL teaching, such as difficult process tracking and effect measurement, thereby achieving precise control of teaching quality.

#### **4. Construction of PBL Teaching Model for Investment Banking in the Digital Context**

To address the teaching needs of Investment Banking, this study realizes the in-depth integration of the PBL teaching method and digital platforms through three core design dimensions: chapter-specific differentiated teaching design, the establishment of a digital platform support system, and the development of a multidimensional teaching evaluation system.

##### **4.1. Optimization of the Teaching Syllabus**

With the goal of stimulating students' subjective initiative, the teaching syllabus is reconstructed around the logic of PBL digital teaching. By analyzing the adaptability of existing digital teaching resources to each chapter of Investment Banking, the study clarifies the weight allocation between theoretical teaching and practical training for each chapter: for chapters with strong practical attributes, additional PBL practice hours are allocated; for chapters with a stronger theoretical focus, online PBL case preview sessions are integrated to lay a foundation for in-class discussions.

Simultaneously, the overall class hour structure is adjusted to reserve sufficient time for key PBL practice stages. This ensures the syllabus not only meets the required hours for theoretical teaching but also aligns with the implementation rhythm of PBL digital teaching, avoiding conflicts between traditional teaching arrangements and PBL practice needs.

##### **4.2. Chapter-Specific Implementation Pathways for PBL Digital Teaching**

Combining course chapter characteristics and digital platform functions, a dual-track mode of online case preview and offline practical operations is adopted for teaching, with specific designs as shown in **Figure 1**.

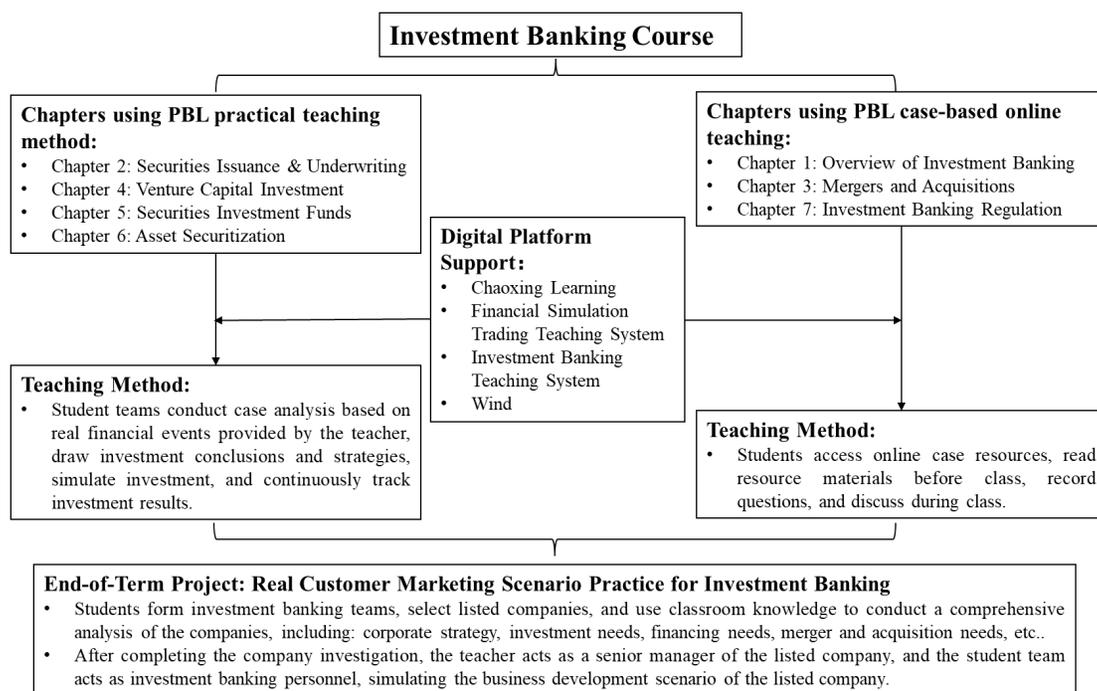


Figure 1. Author's Original: Implementation Path of PBL Digital Teaching in "Investment Banking"

### 4.3. Systematic Construction of Teaching Resources

A resource system of "dynamic case library + regulatory search network + digital platform" is constructed:

- (1) The case library is segmented into two main components: a classic benchmark case library and a latest market case library. These libraries are continuously updated in real-time via digital channels, such as the Wind database and the official website of the Chinese CSRC, ensuring that the case materials remain current and relevant.
- (2) The regulatory search network leverages digital platforms to integrate policy documents from official sources, including the Chinese CSRC and various stock exchanges. This ensures that the regulations incorporated into PBL problem designs are up-to-date, reflecting the latest industry standards and requirements.
- (3) Digital platforms, such as the Chaoxing Learning Platform and the Investment Banking Teaching System, play a crucial role in supporting PBL practice needs. These platforms provide a comprehensive and interactive environment for students to engage with course materials and apply their knowledge in practical scenarios.

### 4.4. Construction of Teaching Evaluation System

Based on course characteristics, the teaching evaluation system is optimized.

#### 4.4.1. Process Evaluation

- Pre-class Online Learning Progress (10%): Students' pre-class online learning progress is tracked and scored via the Chaoxing Learning Platform.
- Task Completion (10%): Completion of tasks within the Investment Banking Teaching System is also evaluated.
- Classroom Attendance (10%): Regular classroom attendance is monitored and contributes to the overall process evaluation score.

#### 4.4.2. Practice Evaluation

- PBL Practice Reports (20%): A comprehensive, multidimensional evaluation mechanism is employed for PBL practice reports. This includes instructor scoring, student self-evaluation, inter-group peer evaluation, and intra-

group peer evaluation.

#### **4.4.3. Outcome Evaluation**

- Real Investment Banking Client Marketing Scenario Practice (50%): At the end of the term, students participate in a real investment banking client marketing scenario practice. This exercise comprehensively assesses their knowledge application and professional qualities. Evaluation data is fully traceable and automatically compiled via digital platforms, ensuring transparency and accuracy in the assessment process.

## **5. Effect Evaluation and Improvement Suggestions for PBL Teaching Method**

### **5.1. Evaluation of Teaching Effectiveness**

To systematically assess the effectiveness of the PBL teaching method in the Investment Banking course, the research team conducted a comprehensive evaluation using questionnaire surveys. The specific findings are as follows.

#### **5.1.1. Student Recognition Feedback**

Questionnaire results indicate that the majority of students highly endorsed and evaluated PBL teaching positively. These findings suggest that PBL teaching, facilitated through digital platforms, not only renders the abstract and complex theoretical concepts in Investment Banking more intuitive and comprehensible but also significantly boosts students' learning initiative and exploratory enthusiasm.

#### **5.1.2. Knowledge mastery effect**

The questionnaire data reveal that students who engaged in PBL teaching reported a deeper understanding of the core knowledge points in Investment Banking. This problem-driven learning approach appears to be particularly effective in enriching their professional knowledge framework.

#### **5.1.3. Practical ability cultivation**

In enhancing students' practical abilities, the PBL teaching model demonstrates significant advantages. By participating in case analysis, simulated investment decision-making, and simulated business expansion activities, students not only acquire the skills to apply theoretical knowledge to real-world problem-solving but also effectively develop their abilities in team collaboration, cross-role communication, and decision-making in complex scenarios.

The practical experiences accumulated during the teaching process will provide a solid foundation for students' future careers in the investment banking field.

### **5.2. Improvement Directions**

While the digital PBL teaching model has achieved significant effectiveness in the Investment Banking course, there remains room for further enhancement. Based on the results of the teaching effect evaluation, the following improvement directions are proposed.

#### **5.2.1. Expand case resource reserves**

To broaden the industry coverage of the PBL case library, efforts should be made to actively establish partnerships with local investment banking institutions and listed companies. Through cooperative mechanisms, desensitized real project cases (i.e., cases with sensitive information removed to ensure compliance) should be introduced. This ensures that the problems designed for PBL teaching are more aligned with authentic industry operation scenarios, thereby enhancing the practical reference value of the cases and providing students with a more immersive learning experience.

#### **5.2.2. Optimize interactive discussion design**

For chapters with strong theoretical content - such as “Investment Banking Regulation” -innovative interactive forms (e.g., thematic debate competitions) can be introduced. These activities can focus on in-depth discussions around core issues, such as the formulation logic, implementation boundaries, and adjustment dynamics of regulatory policies. By fostering intellectual collisions among students, this approach helps to enhance their critical thinking abilities and deepen their understanding of abstract theoretical knowledge.

### **5.2.3. Deepen the integration of teaching and practice**

In the future, long-term cooperative platforms should be established with leading or local investment banking institutions. On this basis, regular on-site visits and observational internships should be organized, allowing students to directly experience the work atmosphere of investment banks and gain an intuitive understanding of the full process of investment banking business operations. This initiative aims to achieve seamless connection between campus teaching and workplace practice, better preparing students for their future careers in the financial industry.

## **6. Conclusions and Prospects**

This study explores the construction and practical application of a PBL teaching model for Investment Banking in the context of digital transformation, drawing the following core conclusions: First, the in-depth integration of the PBL teaching method and digital teaching tools constitutes an effective pathway for Investment Banking teaching reform - one that is highly aligned with the course’s practical, dynamic disciplinary characteristics. This integrated model leverages digital platforms to address long-standing issues in traditional teaching, such as outdated case resources and inefficient collaborative learning. Second, PBL’s problem-oriented logic not only transforms abstract Investment Banking theories into tangible, actionable knowledge for students but also significantly enhances their key competencies: autonomous learning abilities, team collaboration skills, and the capacity to solve real industry problems - particularly in critical stages like case analysis and investment decision-making simulation. Overall, this study provides a viable, replicable teaching scheme for cultivating applied financial talents.

Despite achieving the preset teaching reform objectives, this study has limitations. First, constrained by teaching practice cycles and scopes, the sample coverage is relatively narrow - potentially limiting the model’s demonstrated adaptability across diverse student groups and teaching environments. Second, in designing PBL digital resources, limited information acquisition channels have led to insufficient case reserves for emerging investment banking businesses, which may compromise the comprehensiveness of teaching scenarios.

Looking ahead, optimizing and promoting this digital PBL teaching model for Investment Banking holds broad prospects. First, expand the practice scope by applying the model across multiple universities and finance majors at different levels, then verify its universality through cross-institutional data comparisons. Second, deepen digital resource construction by strengthening cooperation with investment banks, listed companies, and other industry entities - establishing industry-education integration models and synchronously improving mechanisms for dynamic regulatory updates. Third, innovate technology applications by introducing big data analysis to accurately assess students’ competencies and qualities.

In summary, this study presents a feasible approach to Investment Banking teaching reform through integrating digitalization and PBL. Future efforts should focus on continuous model optimization, expanding practice scope, and deepening resource construction to further enhance the quality of applied financial talent cultivation.

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## Disclosure statement

The author declares no conflict of interest.

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