

Research on the Teaching Reform of Investment Course Based on OBE Educational Philosophy in the Context of the New Liberal Arts

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Abstract: With the in-depth advancement of the new liberal arts construction and the widespread application of the Outcome-Based Education (OBE) educational philosophy, traditional course teaching faces an urgent need for reconstruction and upgrading. This paper takes the investment course as the research object, delving into the interdisciplinary, contemporary, and innovative characteristics of the new liberal arts, as well as the student-centered, outcome-oriented, and continuous improvement principles of the OBE philosophy. By systematically examining the current issues in the investment course, such as disconnection from industry development, insufficient practical ability training, and a single evaluation method in terms of teaching objectives, content, methods, and evaluation systems, this paper proposes a systematic reform plan guided by the OBE philosophy. The plan focuses on reconstructing industry-demand-oriented course objectives, constructing a teaching content system that deeply integrates “theory-tools-practice-literacy,” implementing a combination of blended, project-based, and simulation experimental teaching methods, and establishing a diversified and process-oriented comprehensive evaluation system. It aims to cultivate compound talents with a solid foundation in investment theory, proficient data analysis skills, innovative practical abilities, and correct investment values, providing theoretical references and practical paths for the teaching reform of the investment course in the context of the new liberal arts.

Keywords: New liberal arts; OBE educational philosophy; Investment; Teaching reform

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1. Introduction

Against the backdrop of the booming digital economy and the ever-evolving financial markets, higher education reform continues to advance. The “New Liberal Arts” construction strategy proposed by the Ministry of Education aims to break down traditional disciplinary barriers, promote the cross-integration of humanities and social sciences with science and engineering technologies, and cultivate compound innovative talents that meet the needs of future society. Meanwhile, the OBE (Outcome-Based Education)

concept, which emphasizes focusing on students' final learning outcomes and designing curriculum systems and evaluation mechanisms in reverse, has become an important paradigm for improving the quality of talent cultivation^[1]. Organically integrating the construction requirements of the New Liberal Arts with the educational philosophy of OBE and applying them to the teaching reform of the "Investment" course holds significant theoretical value and practical significance.

As a core course for majors such as financial management and financial engineering, "Investment" aims to impart knowledge on the operation laws of capital markets, asset pricing theories, and investment decision-making methods. However, traditional teaching of "Investment" often focuses on the lecturing of classical theories and the derivation of mathematical models, falling short in terms of the cutting-edge nature of teaching content, the practicality of teaching methods, and the comprehensiveness of the evaluation system when compared to the new requirements for talents posed by financial technology innovations and the evolution of investment industries. Students cultivated through the course may be proficient in theoretical models but lack the ability to use data analysis tools to solve practical investment problems, cope with complex market environments, and adhere to professional ethics and compliance bottom lines.

Therefore, under the dual guidance of the New Liberal Arts construction and the OBE concept, conducting systematic reform and practical exploration of the "Investment" course is not only an inherent need for the course's own development but also an inevitable choice for responding to national strategies, aligning with industry demands, and improving the quality of financial talent cultivation. This study aims to analyze the current state of the course, design, and implement a reform plan centered on the comprehensive development of students' abilities and oriented towards achieving learning outcomes, providing a referential paradigm for the construction of similar courses.

2. Research background: The integration guidance of the connotation of the new liberal arts and the OBE concept

2.1. Connotation and characteristics of the new liberal arts

The New Liberal Arts represent a transcendence and innovation of traditional liberal arts education concepts and models. Its core lies in interdisciplinarity, advocating for breaking down the boundaries between economics, finance, management, data science, psychology, and even law to construct an integrated knowledge system to address increasingly complex and comprehensive issues in the field of financial investment. Its timeliness is reflected in the need for new liberal arts education to closely align with the pulse of the digital economy, intelligent investment advisory, green finance, inclusive finance, and other contemporary trends, promptly incorporating new phenomena, tools, and regulations in financial markets into teaching content. Its innovativeness requires bold innovation in teaching modes, methods, and means, focusing on cultivating students' critical thinking, innovative awareness, and the ability to solve real-world problems through project practice, case discussions, virtual simulations, etc.^[2-3].

2.2. Core principles of the OBE concept

The OBE concept encompasses three core principles: student-centeredness, which emphasizes that all teaching activity designs should serve the achievement of students' abilities and qualities, paying attention to individual differences; outcome orientation, which adopts a "reverse design" logic by first clarifying the core competencies students should possess upon graduation and designing course objectives, teaching content,

and evaluation criteria accordingly; and continuous improvement, which establishes a cyclical mechanism based on evaluation feedback to continuously optimize the entire teaching process and ensure the sustained enhancement of educational quality^[4].

2.3. Guiding significance of the integration of the new liberal arts and the OBE concept for the reform of the “investment” course

The integration of the new liberal arts and the OBE concept provides a clear path for the reform of the “investment” course:

2.3.1. Objective setting

Combining the interdisciplinary requirements of the new liberal arts with the outcome orientation of the OBE concept, course objectives should shift from merely imparting knowledge to defining students’ comprehensive ability outcomes in knowledge integration, data analysis, strategy formulation, ethical compliance, etc.

2.3.2. Content optimization

Based on the timeliness of the New Liberal Arts, course content should incorporate cutting-edge fields such as financial technology, behavioral finance, and ESG investment; following the reverse design of the OBE concept, ensure that content closely supports the achievement of ability objectives.

2.3.3. Method innovation

Based on the practical innovation of the new liberal arts and the student-centered principle of the OBE concept, diverse methods such as project-based learning, case teaching, and virtual trading should be adopted to enhance student participation and practical abilities.

2.3.4. Evaluation reform

The integration of the two promotes a shift in the evaluation system from summative and singular to process-oriented and diversified, comprehensively evaluating knowledge, abilities, and qualities, and using feedback to drive teaching improvements.

3. Analysis of the current state of the “investments” course

3.1. Course positioning and training objectives

The current course is positioned as a core professional course exploring the capital operation laws in the investment and financing fields and the application of investment tools in decision-making, with objectives covering knowledge, skills, and attributes. However, the objectives are relatively broad, such as “mastering valuation methods for common investment tools” and “being able to analyze and solve problems using investment theories and methods”, without adequately reflecting the integration with fintech tools like Python and big data analysis platforms, or detailing specific skills required in contemporary investment practices, such as quantitative analysis, risk modeling, and compliance risk control. The alignment with industry frontiers needs improvement.

3.2. Teaching content and methods

The teaching content system is comprehensive, covering core modules such as portfolio theory, asset pricing models, fixed-income securities, stock valuation, and financial derivatives. However, there are deficiencies: First, there is a lack of cutting-edge content, with limited coverage of emerging topics like robo-advisory, algorithmic trading, big data factor mining, and blockchain assets. Second, the integration of technical tools is weak; although experimental hours are allocated, most projects, such as fund fee calculations and valuation model computations, are verification-based, lacking comprehensive and design-oriented experiments involving data acquisition, cleaning, modeling, and analysis using programming tools. Third, the timeliness and comprehensiveness of case studies are insufficient; teaching remains theory-focused, with cases primarily based on classical theories and lacking fresh, comprehensive cases reflecting recent Chinese market characteristics and multi-factor analysis. In terms of teaching methods, although the Chaoxing Smart Teaching Platform is used, the approach essentially remains “theory lectures + computer verification.” Methods like Project-Based Learning (PBL), flipped classrooms, and simulated investment competitions, which can deeply stimulate student initiative and exercise comprehensive decision-making skills, are underutilized, with student practical engagement and immersion needing enhancement.

3.3. Teaching evaluation system

Course assessment employs a combination of process-based evaluation (50%) and final exams (50%), reflecting attention to the learning process. However, process-based evaluation mainly consists of class performance, assignments, lab reports, and stage tests, with the latter still focusing on theoretical knowledge. Lab reports mostly correspond to verification experiments, making it difficult to comprehensively evaluate students’ innovative thinking and complex problem-solving abilities. The evaluation is primarily conducted by teachers, lacking diverse perspectives such as industry mentor evaluations and peer assessments. Final exams are still closed-book written tests, and although question types are diverse, the means to assess comprehensive application skills and critical thinking remain limited. The overall evaluation system falls short of the OBE-emphasized requirements of diversity, competence orientation, and continuous feedback.

4. Reform design of the “investments” course

Based on OBE principles addressing the above issues, guided by OBE principles, the following systematic reform design is proposed across four dimensions:

4.1. Reconstructing three-dimensional course objectives

Using backward design, first, investigate the competency requirements of financial institutions and investment firms for entry-level investment analysis and risk management positions, clarifying the competency outcomes students should achieve approximately five years after graduation. Based on this, refine and reconstruct the course’s “knowledge-skills-attributes” three-dimensional objectives:

4.1.1. Knowledge dimension

Master core traditional investment theories, understand frontier knowledge in behavioral finance, big data finance, and sustainable investing, and be familiar with the basic applications of major financial data analysis tools and platforms.

4.1.2. Skills dimension

Quantitative Analysis Skills: Able to acquire, process, and visualize financial data using Python/Excel, and complete basic return-risk calculations and valuation model construction.

Investment Strategy Design and Evaluation Skills: Able to design simple investment strategies, such as multi-factor stock selection and asset allocation plans, based on macro, industry, company, and market sentiment analysis, using quantitative and qualitative methods, and evaluate them using metrics like the Sharpe ratio and maximum drawdown.

Risk Identification and Management Skills: Able to identify market, credit, and operational risks, and use tools like VAR and stress testing for preliminary measurement and management plan design.

Report Writing and Presentation Skills: Able to write structured, well-supported investment analysis reports and effectively present and defend them orally.

4.1.3. Attributes dimension

Establish correct investment values and wealth perspectives, cultivate rigorous, honest professional ethics and compliance awareness, strengthen teamwork spirit and communication skills, and foster continuous attention to financial market dynamics and lifelong learning habits.

4.2. Optimizing the “four-in-one” teaching content system

Guided by the reconstructed objectives, break down original chapter boundaries and integrate to construct a “theoretical module-tool module-practice module-attribute module” four-in-one, spirally ascending content system.

4.2.1. Theoretical module

Streamline and optimize classical theory lectures, adding frontier topics like “Behavioral Finance and Investment Decision Biases”, “Big Data and Alternative Data in Investing”, “ESG Investment Theory and Practice”, and “Fintech and Robo-Advisory.”

4.2.2. Tool module

Embed a “Python Financial Data Analysis Basics” unit, teaching data processing with pandas and numpy, visualization with matplotlib, and completing simple statistical analyses and model calculations. Integrate tool learning closely with theoretical applications.

4.2.3. Practice module

Design a semester-long “Comprehensive Investment Analysis Project.” Students form simulated investment teams and must complete: (1) macroeconomic and industry analysis; (2) stock pool screening and quantitative analysis using tools; (3) valuation of target companies using valuation models; (4) portfolio design and explanation of asset allocation logic; (5) risk measurement and performance simulation; (6) writing a final investment recommendation report. The project progresses in stages, synchronized with theoretical teaching.

4.2.4. Attribute module

Integrate course ideology and politics organically into all aspects. Through analyzing typical cases in domestic and international financial markets, guide students to discuss professional ethics, compliance risk

control, and social responsibility. By interpreting national macroeconomic policies and financial market reforms, enhance students' financial patriotism and market confidence.

4.3. Innovating a “blended-project-simulation” integrated teaching method

Adopting a “student-centered” approach, construct a new teaching form integrating online-offline blending, project-driven learning, and simulation support.

4.3.1. Blended learning

Utilize the Chaoxing Learning Platform to build resources like micro-lecture videos, frontier literature, data case libraries, and online discussion forums. Students complete basic knowledge preview and self-assessment online, with offline class time mainly used for exploring key difficulties, case discussions, project guidance, and presentation showcases.

4.3.2. Project-based learning (PBL)

Use the “Comprehensive Investment Analysis Project” as the core driver, integrating theoretical knowledge learning into solving practical problems. Teachers act as coaches and facilitators, providing project frameworks, resource support, and stage-based feedback.

4.3.3. Virtual simulation experiments

Introduce a virtual investment trading simulation platform, allowing students to conduct simulated trading, portfolio management, and risk management in a near-real market environment, intuitively feeling the impact of factors like market volatility, transaction costs, and liquidity, compensating for the shortcomings of pure theoretical calculations.

4.4. Constructing a diversified process-based assessment and evaluation system

Establish an evaluation system centered on competency assessment, involving multiple participants, spanning the entire teaching process, and promoting continuous improvement.

4.4.1. Diversifying evaluation subjects

Introduce a combined model of “teacher evaluation + enterprise mentor evaluation + group peer evaluation + individual self-evaluation.” Invite industry experts to participate in final project defense reviews, enhance group member inter-evaluation for collaboration, and promote student self-evaluation for reflection.

4.4.2. Comprehensifying evaluation content

Adjust the grade composition to: Comprehensive Investment Analysis Project (30%) + Experiments and Assignments (20%) + Online Learning and Class Participation (10%) + Final Comprehensive Application Assessment (40%). Significantly increase the weight of project practice, with project evaluation further subdivided into: report quality (30%), data analysis and model application (30%), defense performance (20%), and teamwork (20%).

4.4.3. Dynamizing the evaluation process

Strengthen formative evaluation of project stage outcomes, such as industry analysis reports, valuation model

results, and mid-term presentations, providing timely feedback to guide student improvement. Reduce pure memorization content in final assessments, increasing open-ended question types like comprehensive case analysis and investment plan commentary to assess knowledge application and critical thinking.

4.4.5. Closing the feedback-improvement loop

Establish a course teaching feedback mechanism, regularly collecting opinions and suggestions from students, teaching assistants, and industry mentors on teaching content, methods, and projects, using them to adjust and optimize the next round of teaching implementation, forming a continuous quality improvement loop of “design-implementation-evaluation-feedback-improvement.”

5. Implementation guarantees and future prospects

To ensure the effective implementation and continuous deepening of the reform plan, the following aspects need strengthening:

5.1. Deepening industry-education integration and co-constructing teaching resources

Establish stable cooperative relationships with securities firms, fund companies, and fintech enterprises, inviting industry experts to participate in course syllabus revision, deliver some frontier lectures, serve as project mentors, and provide real, de-identified case data. Cooperatively develop virtual simulation experiment projects based on real business scenarios, explore establishing practical platforms like “Investments Special Training Camps” and “School-Enterprise Joint Workshops”, allowing students earlier exposure to industry realities.

5.2. Strengthening faculty team building and enhancing interdisciplinary teaching capabilities

Support course teachers in participating in training and visiting programs in fintech and data analysis, encouraging teachers to form interdisciplinary teaching teams with instructors from computer science, statistics, and related courses. Introduce dual-qualified teachers or part-time teachers with rich industry experience to optimize the faculty structure.

5.3. Advancing the construction of digital and intelligent teaching platforms and resource libraries

Continuously improve online course resources, building a digital teaching resource library containing classical cases, frontier reports, teaching videos, experimental datasets, and code libraries. Explore using learning analytics technology to track student learning behaviors and project progress, achieving personalized learning alerts and resource recommendations.

5.4. Perfecting the continuous monitoring and improvement mechanism for course quality

Establish a regular assessment system for course objective attainment. Quantitatively assess the attainment of various competency objectives by analyzing data from student project outcomes, assessment results, and feedback from graduates and employers. Based on assessment evidence, hold course team teaching reflection meetings to dynamically adjust teaching objectives, content, methods, and evaluation, forming an

institutionalized culture of continuous course improvement.

6. Conclusion

Under the dual waves of new liberal arts construction and OBE principles, reforming the “Investments” course is imperative. This paper systematically analyzes the current course state and proposes a reform framework oriented towards outcomes, centered on students, and focused on cultivating comprehensive abilities. The framework emphasizes aligning objective reconstruction with industry needs, optimizing content with a focus on frontiers and technology integration, innovating methods to advocate for practice and collaboration, and reforming evaluation to pursue diversity and process feedback. Successful implementation requires schools and departments to provide solid guarantees in terms of faculty, resources, and systems, and to continuously deepen collaborative education with the industry. Through such reform practices, the “Investments” course will better shoulder the mission of cultivating high-quality, compound investment talents with solid knowledge, exquisite skills, innovative spirit, and correct values, adapting to future financial market needs, and contributing educational strength to the healthy development of China’s financial industry.

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