

Research and Practice on Innovation and Reform of Securities Investment Simulation Practice Course

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Abstract: This paper introduces the curriculum innovation reform and practice of the securities investment simulation practice, the design of the online and offline hybrid teaching mode based on the curriculum ideology and OBE concept, the realization of school-enterprise linkage through the financial special training camp, active teaching reform and practical research, flexible application of modern teaching methods such as Chaoxing Learning Pass and Rain Classroom assist teaching, etc., to achieve the teaching goal of "unity of knowledge and action, teamwork and innovation", and form the innovative nature of "theoretical teaching + practical teaching + subject competition + ability development + vocational certificate" Talent training mode.

1. Introduction

"Securities Investment Simulation Practice" is a professional elective course offered by economics majors, and its prerequisite course is "Securities Investment". "Securities Investment" includes three aspects: overview of securities investment, fundamental analysis and technical analysis. "Securities Investment" has very high requirements for students to master the basic knowledge, and requires students to master "Macroeconomics", "Industrial Economics", "Accounting" and other related knowledge. Even if students have a good grasp of the theoretical knowledge of "Securities Investment", since the price trend of securities is a random walk process in the sense of "Statistics", the profit of securities investment is not stable. Even though students have studied "Securities Investment" and mastered some theoretical knowledge, the operation level is not smooth, and they cannot achieve "the unity of knowledge and action"! In addition, since "Securities Investment" and "Securities Investment Simulation Practice" are both elective courses, some students directly chose "Securities Investment Simulation Practice" on the basis of not taking "Securities Investment", which is even more difficult. Therefore, the course reform of "Securities Investment Simulation Practice" is imperative. "Securities Investment" solves the problem of "knowledge", "Securities Investment Simulation Practice" solves the problem of "action", and finally achieves the goal of "unifying knowledge and action"!

2. Curriculum Innovation Reform and Practice

2.1. Original Content Innovation from Traditional Knowledge Teaching to Operational Skills Conversion

Integrate the contents of "Securities Investment" and "Securities Investment Simulation Practice", and put the knowledge points of technical analysis needed in this course into "Securities Investment" for teaching. The school's course team is based on years of practical experience, combined with the above Knowledge points, summarize several operation methods for students to choose and practice. As shown in Figure 1, for the original innovation of the course content, through four investment tactics, the original knowledge points are included: the volume-price tactics includes chapters such as K-line, trading volume, and volume-price relationship; the moving average tactics includes Moving Averages, Bollinger Bands and other chapters; indicator resonance

tactics include KDJ, MACD and other chapters. This course is based on short-term swing trading, and stable profit is the goal. The newly added board learning tactics part is not for students to conduct board trading, but how to respond if the price of the securities held in their hands rises to the limit. This course emphasizes the importance of investment discipline, and students build their own investment discipline.

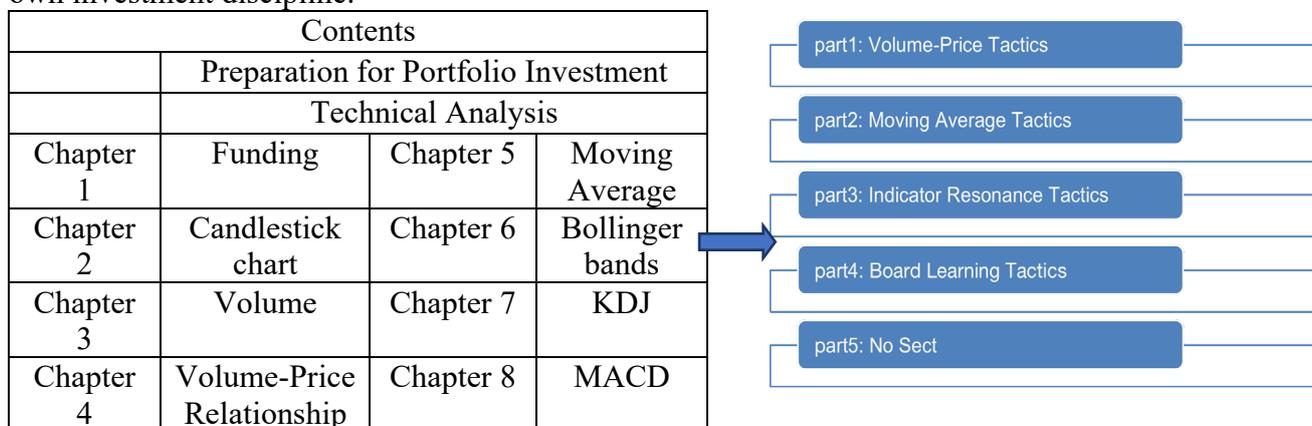


Figure 1 Original content innovation from traditional knowledge teaching to operational skills conversion.

2.2. Design of Online and Offline Mixed Teaching Mode Based on OBE Concept

OBE (Outcomes-Based Education) Emphasis on student-centered, active learning, driven by continuous student feedback, emphasis on learning outcomes, and sustainable improvement in teaching and learning processes[1].

Table 1 Design of online and offline mixed teaching mode based on OBE concept.

Learning stage	Time	Online learning	Offline learning
Phase 1: "Learning"	Lesson 1-2	Funding	Course Introduction
	Lesson 3-4	Candlestick chart, Volume, Volume-Price Relationship	Volume-Price Tactics:
	Lesson 5-6	Moving Average, Bollinger bands	Moving Average Tactics
	Lesson 7-8	KDJ, MACD	Indicator Resonance Tactics
	Lesson 9-10		Board Learning Tactics
Phase 2: "Knowing"	Lesson 11-16		Assignment of homework, classroom comments, case analysis
Phase 3: "Knowledge as action"	Lesson 17-32	Wechat groups are divided into groups, students in the group learn from each other, and conduct team simulation transactions, and the rate of return is ranked in the Wechat group every week.	20 consecutive trading days of team simulated trading + individual simulated trading class comments

The online and offline mixed teaching mode design based on the OBE concept divides students' learning into three stages[2]. The first stage is: "learning". Students learn the basic knowledge video of securities investment before the online class through the Chaoxing Learning Pass system. The classroom teaching content mainly introduces four tactics including volume-price tactics, moving average tactics, index resonance tactics and board learning tactics. The second stage is: "Knowing".

The teacher made sure that the students had fully understood the above-mentioned tactics by assigning several homework on tactics and making comments in class. Through the analysis of classic cases, the curriculum ideological and political education is carried out for students. The third stage is: "unity of knowledge and action". Students conduct individual trading and group trading of securities investment simulations based on the tactics they have learned earlier. During class time, teachers analyze the students' individual and group trading situations, so that students can strengthen their understanding of tactics and operations, and let students understand why this transaction is made. Can profit or loss? What is the cause? Is the student's operation consistent with trading discipline? Ultimately strengthens the understanding and execution of trading discipline. Through the design of the online and offline mixed teaching mode based on the OBE concept, the students' operation level is improved and the students' understanding of securities investment is deepened. The specific design arrangement is shown in Table 1.

2.3. Form an Innovative Talent Training Model of "Theoretical Teaching + Practical Teaching + Subject Competition + Ability Development + Vocational Certificate"

This course adopts the innovative talent training model of "theoretical teaching + practical teaching + subject competition + ability development + vocational certificate". This course promotes the improvement of students' investment skills by allowing students to participate in in-curricular competitions, in-school competitions, regional competitions (provincial competitions), and national competitions. Some students finally passed the securities, funds, and banking qualification exams and obtained relevant certificates[3].

Table 2 Innovative talent training model of "theoretical teaching + practical teaching + subject competition + ability development + vocational certificate".

Theoretical teaching	Practical teaching	In-class competition	school competition	National competition (including regional competition)	Ability Development	Vocational Certificate
Securities Investment, Finance, International Finance, etc.	Portfolio Investment Simulation Practice	Securities Investment Simulation Competition	Securities Investment Simulation Competition	National Securities Investment Simulation Training Competition	Improve students' investment and financial skills	Qualification certificates for securities, banking, funds, etc.

So far, relying on this course, the teaching and research office of the team's teachers has hosted nine school-level securities investment simulation competitions, and invited executives from well-known private equity funds, securities companies and accounting firms in Zhuhai to give lectures to students, and held two financial management training camp.

2.4. The Integration of Curriculum Ideology and Politics

The world today is undergoing profound changes unseen in a century. The outbreak of the novel coronavirus pneumonia has made us have a clearer understanding of the unprecedented changes in a century. Through the integration of ideological and political cases in securities investment courses, this course improves students' ability to correctly understand, analyze and solve problems using knowledge of securities investment; stimulate students' national feelings and mission; guide students to pay attention to the country, industry and enterprises The development strategy, laws and regulations and related policies of the students, establish a correct investment concept; guide students to pay attention to practical problems, and cultivate students' professional quality of economics and people, honest service, and both morality and law.

The stock market is a barometer of the economy, and the stock market is also a reflection of the country's economic development and macroeconomic policies. The content of this course is actively

integrated with ideological and political elements, such as the "Belt and Road", "carbon peaking and carbon neutrality", "education double reduction" policies, etc., have all had an impact on the stock market. Securities investment needs to establish investment discipline. By extension, people must have their own bottom lines and must use legal and moral standards to strictly demand themselves[4].

Table 3 Course ideological and political construction.

Curriculum Ability Development	Ideological and Political Integration	Case Analysis
Abide by the investment discipline and establish a correct investment concept!	To be a person and to do things, you must have your own bottom line, and you must strictly demand yourself with legal and moral standards.	A case of legal sanctions due to manipulation of the stock market
Follow the Trend	The world today is undergoing profound changes unseen in a century. The outbreak of the novel coronavirus has made us have a clearer understanding of the unprecedented changes in a century.	The impact of the new crown epidemic on the global stock market! Through the successful cases of China's epidemic prevention, enhance the sense of national pride and belonging!
Cultivate innovative thinking	Science and technology are primary productive forces!	Roblox is listed on the New York Stock Exchange, which is also the first public company of the Metaverse. Facebook changed to Meta (metaverse). The impact of the Metaverse on portfolio investment.
Cultivate Students' Environmental Awareness	Notice of the State Council on Printing and Distributing the Action Plan for Carbon Peaking Before 2030	The impact of carbon peak on industry, steel industry, non-ferrous metal industry, building materials industry, petrochemical industry
Macroeconomic Analysis Ability	Opinions of the General Office of the State Council on Promoting the Normalization and Institutionalization of the Centralized and Volume-Based Procurement of Medicines	What are the effects of centralized drug procurement on ordinary consumers? What are the implications for the medical industry?
Industry Analysis Ability	The General Office of the Central Committee of the Communist Party of China and the General Office of the State Council issued the "Opinions on Further Reducing the Burden of Students' Homework and Off-campus Training in Compulsory Education"	The impact of the double reduction of education on the education industry!
Business Analysis Ability	Craftsman spirit!	Gree's road to diversified development! Is Gree's diversified development recognized by the market?
Technical Analysis Ability	Quantitative investment in information teaching	Can quantitative investing replace subjective investing?

2.5. Forming the Teaching Goal of "Unity of Knowledge and Action, Teamwork and Innovation"

According to UNESCO's four pillars of education in the 21st century, namely 4L, learning to know, learning to do, learning to live together, and learning to be, this course has formulated the teaching objectives of "knowledge" - "action" - "teamwork" - "innovation".

First, students master the basic methods of securities investment through the online course of

"Securities Investment" and the content of the first 10 hours of this course; then, let students apply the securities investment strategies they have learned to simulated trading, so as to achieve "the unity of knowledge and action" Thirdly, students learn from each other through teamwork; finally, through continuous investment training, students constantly revise their investment strategies, innovate trading strategies, and form investment disciplines that suit them. For example, our school introduced the content of the golden cross of moving averages in the course of securities investment simulation practice, and mentioned the trading skills of the 5-day moving average and the 10-day moving average. Moving average trading tips. By drawing inferences from others, one student has formed her own investment discipline and achieved stable profits. She also led other students to win the first prize of the team of the 8th National Securities Investment Simulation Training Competition in 2021.

2.6. Flexible Application of Chaoxing Learning Link and Rain Classroom in Teaching

Before the class, the teacher will release the task points through the Superstar Learning Link, so that the students can learn the knowledge points that the classroom needs to master online in advance. Using Rain Classroom for interactive communication in the classroom, the Rain Classroom subject words can generate a word cloud, and it is also convenient for teachers to understand students' views on a certain matter.

2.7. Teaching Evaluation Reform

According to the teaching objectives of "focusing on student development" and forming "the unity of knowledge and action, teamwork and innovation", this course has carried out a reform of teaching evaluation. The details are as follows:

(1) 30% of usual performance: 5% of attendance + 25% of homework (15% of 3 individual assignments + 10% of 4 team assignments)

(2) Final grade 70%: 50% of the experimental report (including 30% of the trading process "integration of knowledge and action", 10% of trading discipline, and 10% of experience and innovation), and the ranking of practical training and operation is 20%.

Teaching evaluation is centered on student development, and the cognition of course knowledge is reflected in the usual 3 individual assignments and 4 team assignments. The course publishes two in-class competitions on the Tonghuashun software, and gives training scores according to the transaction ranking. If the return rate of the two transactions is relatively high, and it is based on the high rate of return obtained by the implementation of investment discipline (excluding luck), and the "unity of knowledge and action" is achieved, a relatively high score will be given. If some students have developed their own tactics in addition to the trading tactics discussed in the course, which have been proven to be effective through practice, they can also get a relatively high innovation score.

This course can promote the improvement of students' overall quality and comprehensive ability, and realize a virtuous circle of learning-evaluation-improvement-development.

3. Curriculum Innovation and Reform Effectiveness

3.1. Courses are Affirmed by Students

According to the questionnaire survey of 103 students of the course "Securities Investment Simulation Practice", the results are as follows: (1) In terms of satisfaction with this course, 66.02% of the students are very satisfied with this course, and 33.01% of the students are satisfied; (2) In terms of whether team operation and mutual learning are helpful, 51.46% of students think it is very helpful, 40.78% of students think it is helpful, and 6.8% of students think it is generally helpful; (3) In the formation of investment discipline, 22.33 % of the students believed that their own investment discipline had been formed, and 73.79% of the students believed that their investment discipline had been basically formed; (4) In terms of the combination of knowledge and action, 66.99% of the students believed that they had achieved the integration of knowledge and action, and

33.01% of the students believed that they had Failing to achieve the unity of knowledge and action; (5) In terms of capital strategy, 58.25% of students believe that their capital strategy is properly designed, and 41.75% of students believe that their capital strategy is inappropriate; (6) In terms of insisting only on upward trends, 52.43% 47.57% of students insisted on only doing uptrends; 47.57% of the students did not only do uptrends; in the selection of investment cycles, short-term and mid-line are the choices of most students; (7) In the selection of investment targets, stocks and fund investments are subject to students' choice. Welcome; (8) Among the several tactics in this course, students prefer volume-price tactics and moving average tactics.

3.2. Opened Multiple Rounds of General Elective Courses to Promote to the School

Relying on this course, the teaching team of our school offers general elective courses for the school, and offers relevant general elective courses such as "Securities Investment Simulation Practice", "Securities Investment Training (Elementary)" and "Securities Investment Training (Advanced)" all year round. Widely acclaimed by students. The international trade major of the team has also produced a group of outstanding alumni engaged in securities investment.

3.3. Participate in Subject Competitions to Improve Students' Professional Skills

Students learn through courses and then participate in in-class competitions, in-school competitions, and national competitions related to the courses to improve their professional skills.

The team guides students to participate in the National Securities Investment Simulation Training Competition hosted by the National Financial Vocational Education Teaching Steering Committee. The awards in the past three years are as follows:

The 2019 National Finance and Securities Investment Simulation Training Competition team won 3 second prizes and 1 team third prize.

The 2020 National Financial and Securities Investment Simulation Training Competition team won 1 second prize and 3 team third prizes.

1 first prize for the team and 1 second prize for the team in the 2021 National Securities Investment Simulation Training Competition.

3.4. Actively Carry Out Teaching Reform and Practical Research

The teachers of this team have been committed to the teaching reform and practical research of this course. In recent years, they have completed 4 provincial and municipal school-level vertical projects and 3 horizontal projects, and published several papers. The teachers of this team won the third prize in the school-level teaching innovation competition. The relevant achievements of this course were also recognized as the second prize of the National Business Education Teaching Achievement Award.

3.5. School-Enterprise Curriculum Co-Construction

The team teachers of this course invite Zhuhai Julong Investment Co., Ltd., CCB Life Insurance Co., Ltd. Zhuhai Central Branch, Guangzhou Chuangbicheng Information Technology Co., Ltd., Rongcheng Accounting Firm (Special General Partnership) Shenzhen Branch and other practice bases to be responsible People gave lectures for students, held two special financial training camps, and issued corporate training certificates to students who participated in the training.

3.6. laboratory Construction

There are currently three on-campus training rooms for the majors of the teachers in this team, including the economic management comprehensive training room, the business inter-professional comprehensive training room, the innovation and entrepreneurship laboratory, and the big data laboratory under construction. The development of quantitative investment practice provides good external conditions.

4. Teaching Reflection

After summarizing the teaching practice experience, this course still needs to be improved in the following aspects in the future construction process: (1) In order to participate in the national competition, this course is scheduled to be taught in the first 8 weeks of the second semester of the junior year, and students generally feel that the time is too short, the teaching time can be adjusted from 8 weeks to 16 weeks, and the students' trading time can be extended. (2) The relationship between rate of return and course grades. Based on the result orientation, this course links the student's operational rate of return with the final grade. After two in-class competition simulation trading rate rankings are summed up and then ranked, students with relatively stable rates of return are selected to give excellent grades. It is true that the second in-curricular competition can rule out the situation that most students get good grades because of good luck, but it cannot completely rule out the situation that both times are because of good luck and get good grades. In the future teaching, each group of students can provide a self-selected stock through grouping. Recommended stock requirements: Shanghai and Shenzhen A shares, stocks with a price change of 10%, and no daily limit in the last 5 trading days. A 45-person teaching class is divided into 9 groups with 5 people as a group, and there are 9 self-selected stocks to form a stock pool. The stocks traded in the class competition must be selected from the 9 stocks. The method of limiting available stocks can limit students to choose the strongest continuous daily limit stocks to a certain extent, so as to focus on the formation and training of investment discipline. (3) "Securities Investment Simulation Practice" is based on the prerequisite course "Securities Investment" and other economics courses, and it is relatively easy for students to learn. For the corresponding general elective course, For students who have no foundation in economics, they will find it difficult to study at the beginning. We also need to strengthen the organization of basic knowledge and professional terminology related to this course to provide convenience for students' schools.

5. Conclusion

This paper introduces the curriculum innovation reform and practice of the securities investment simulation practice in our school, the design of the online and offline hybrid teaching mode based on the curriculum ideology and OBE concept, the realization of school-enterprise linkage through the financial management special training camp, active teaching reform and practical research, flexible application of modern teaching methods such as Chaoxing Learning Pass and Rain Classroom assist teaching, etc., to achieve the teaching goal of "unity of knowledge and action, teamwork and innovation", and form the innovative nature of "theoretical teaching + practical teaching + subject competition + ability development + vocational certificate" Talent training mode.

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References

- [1] Li, C., & Gao, Z. (2019). Research on blended teaching mode of Investment course based on OBE Concept. In 2019 9th International Conference on Management, Education and Information [c] (pp. 307-312).
- [2] Zhou, L., & Zhang, Y. (2021, April). Data-driven mixed teaching of financial investment courses based on OBE concept to improve learning effectiveness. In 2021 International Conference on Internet, Education and Information Technology (IEIT) (pp. 549-552). IEEE.
- [3] Sun, F. (2019, October). Analysis and Design of Student Training Tracking Feedback System Based on OBE Engineering Certification. In IOP Conference Series: Materials Science and

Engineering (Vol. 612, No. 3, p. 032062). IOP Publishing.

[4] Hua, Z. Ideological and Political Teaching in Major of Finance Based on the" Flipped Classroom. In 2020 Conference on Educational Science and Educational Skills (ESES2020).(pp. 182-188).