# Research on the Application of Advance Feedback Experimental Method in the Teaching of Macroeconomy and Strategic Management

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**Abstract.** Macroeconomics and strategic management are important basic courses in economic management. Compared with other professional courses, they are abstract and boring. Teachers are not easy to teach, and students are not easy to learn. Especially the interaction between teachers and students has become a major problem in teaching. In order to improve the quality of classroom teaching, the school has equipped a laboratory for the economics and management major and opened corresponding experimental courses for students. It can provide students with the whole process of simulated practice in a targeted manner, and obtain the perceptual knowledge and practical experience that they should have before classroom teaching.

Since the hours of experimental courses are very limited, and the perceptual knowledge required by theoretical teaching is constantly increasing, the advanced feedback experimental method can help us solve this contradiction. Taking the opportunity of the experimental class, the teacher flexibly interspersed 6–9 min of additional experiments in the teaching of the follow-up theoretical class. Through the vivid situational guidance, the students can obtain some needed information such as phenomena and data, so as to interact with the teacher in the theoretical class. Provide help. It can stimulate students' interest in learning, promote the organic combination of theoretical courses and experimental courses, and improve the teaching effect of theoretical courses.

Referring to the teaching experience of the advanced feedback experimental course in the science and engineering department of our school, combined with the content of the courses taught and the actual situation of the students, the exploration and practice of the application of the advanced feedback experiment in macroeconomics and strategic management teaching were carried out. The results of the questionnaire survey show that the advanced feedback experiment can stimulate students' interest in learning and promote the interaction between teachers and students in class, which is an indispensable way to inspire interactive teaching.

**Keywords:** advance feedback experiment · Enlightening interaction · Strategic management · macroeconomic


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## 1 Introduction

"Heuristic interactive teaching method" is the main teaching method to improve the teaching quality of colleges and universities in my country, and it has become a consensus. How to inspire and how to interact are the practical issues that the majority of front-line teachers are most concerned about. In order to improve the quality of classroom teaching, many educators have exhausted almost all the teaching methods in ancient and modern China and abroad, but still cannot find a simple and effective way to inspire interaction. In order to solve this national problem, the Department of Physics and Information Engineering of Cangzhou Normal University took the lead in the application of the "Advanced Feedback Experiment Method" in electromagnetics, electrical engineering, atomic physics, optics and other courses in China as early as 1996. The research has laid the foundation for the promotion and application in liberal arts majors [1, 2].

The advanced feedback experiment integrates cognitive law, constructivism and assimilation theory, and has a deep foundation of educational theory, The guiding ideology is consistent with the cognitive law, the process of knowledge acquisition is consistent with the theory of constructivism, and the treatment of specific details is the same as the idea of assimilation theory.

## 2 Basic Idea of Advance Feedback Experiment Method

The advance feedback experiment method is abbreviated as the advance experiment method, that is, to arrange experimental activities ahead of the theoretical teaching, so that students can find problems in the experiment process, and this problem will be solved in the subsequent theoretical teaching. Doing so can fully mobilize students' learning enthusiasm and make them have "suspense" before class. The biggest advantage of advanced experiment method is to provide more support for heuristic interactive teaching, so that students can obtain the maximum amount of information in limited time and space, so that they can effectively cooperate with classroom teaching. Observe phenomena, gain insight into social relations and perceive the process of change to the greatest extent in limited time and space. The phenomena observed and problems encountered by students in the experimental class are the important knowledge content in the next theoretical teaching, When the advance theory changes from "vanishing" to "appearing", students are very excited, and the relevant knowledge of feeling, perception and memory emerges, which can greatly stimulate students' interest in learning.

The research of advance feedback experimental method is earlier than the "mixed teaching mode", which is consistent with Mr. He Kekang's "mixed teaching mode" in guiding ideology. It has high application value [3].

## 3 Design of Advance Feedback Experiment

As we all know, with the deepening of higher education reform, the teaching content of some courses is increasing, while the corresponding class hours are not increasing, but decreasing. In particular, the experimental class hours of liberal arts have been compressed to the limit. Many abstract concepts and important theories cannot be explained

with the help of corresponding experimental classes, and even two or three chapters are only equipped with an experimental class. Therefore, each experimental class is particularly valuable, and it is almost impossible to set up a single confirmatory experiment. Many colleges and universities choose compound experiments because of the tense class hours.

In order to flexibly meet the needs of the teaching of theoretical courses, we deliberately design a small advance experiment, and insert the design content in an experimental course before the theoretical course, so that it can not affect the completion of the teaching task of an experimental course, but also provide one or two opportunities for the next theoretical course, which is difficult to observe and experience perceptual knowledge in daily life.

The super feedback experimental method focuses on advance and is intended to give back; Put "late theory" into "advanced experiment". For example, in the fourth experiment of Macroeconomics: the national income theory of macroeconomics and the general equilibrium theory experiment of money market, the purpose of this experiment is: (1) to be able to calculate GDP, CPI, unemployment rate, inflation and other indicators and understand the meaning of each indicator; (2) Be able to analyze the current currency market operation according to the macroeconomic operation.

The corresponding experimental contents are: (1) Run for "government", Statistics and calculation of economic indicators such as GDP, CPI, unemployment rate, disposable income of residents in sand table operation every year; (2) The "government" formulates the above economic statistical indicator system and accounting rules; (3) Analyzes the relationship between these indicators; (4) Analyzes the influencing factors of these indicators; (5) Analyzes the reasons for the fluctuation of the interest rate market.

When the content of Experiment 4 reaches (3)–(4), the experimental instructor can cut into the advanced experiment by asking questions. "Please note that in (3)–(4) experimental links, please ask students to significantly increase the parameters of government intervention. What will be the results? What will happen after the parameters of "government" intervention are greatly reduced? What is the range of this range? " The problems involved in this additional short experiment are the advanced experiments designed by our experimental teachers for the follow-up theoretical course "economic cycle and economic growth", The phenomena and data observed by students in the experiment may be "hidden" in the later theory. In particular, the judgment of the economic cycle, the possible risks faced by the macro economy, and the impact of changes in aggregate supply and demand on the real economy cannot be separated from the support of the experimental data. After the phenomenon of advanced experiment and data are fed back to the classroom, the teaching difficulty can be greatly reduced [4, 5].

For another example, in the teaching of strategic management, teachers can design a small advance feedback experiment in the "enterprise operation simulation training course". The purpose of the simulation training of enterprise operation Electronic Countermeasure game is to use computer and network technology to realistically simulate the bad environment of market background and the actual operation and management process of enterprises, so that students can complete enterprise operation and management work in the simulated environment, and cultivate students' own strategic management thinking ability and decision-making ability. In this training process, the teacher can put

forward the content and requirements of the advance feedback experiment at the appropriate nodes according to the progress of the experiment, use a short time to complete the specified tasks, and record the phenomena and conclusions of the experiment.

Understanding the characteristics of each stage of the enterprise life cycle and mastering the strategic design of the enterprise in the entrepreneurial period is not only the requirement of the experimental content, but also the knowledge points involved in the later chapters. Therefore, it is necessary to preview and understand some basic concepts in advance. Students must be reminded that solving the practical problems of enterprises cannot be completed in the order of the contents of the textbook. Such a situation may occur. The ongoing simulation experiment will involve the contents of the last chapter of the textbook, such as the analysis and formulation of strategies. The experimental content will involve all the contents of the textbook. When encountering such problems, teachers should enlighten students in time and Guide students to complete the experiment. The teacher didn't explain in the experimental class, Gently touch the edge of the topic without going deep into it, Let the students solve it after class.

Through participating in the interrelated business decision-making and the operation and management of virtual enterprises in the simulated environment, we can further get familiar with and understand the production and operation management process of enterprises, and master the specific operation methods of operation and management in the market environment.

Michael Porter, a master of strategic management, believes that the essence of strategy is choice, trade-off and their respective positions. The corresponding enterprise strategic management refers to the overall planning and implementation of the ways and means for enterprises to establish sustainable competitive advantages, achieve sustainable development, and achieve the goals of enterprise development according to the external environment and internal resources. Therefore, in this experiment, we intentionally insert the "evaluation of entrepreneurial ability based on the enterprise life cycle", Therefore, in this experiment, we intentionally insert the "evaluation of entrepreneurial ability based on the enterprise life cycle", Therefore, in this experiment, we intentionally insert the "evaluation of entrepreneurial ability based on the enterprise life cycle",

In the enterprise life cycle, the characteristics of enterprises in each stage are different, and the requirements for entrepreneurial ability are different. This experiment tests the four stages of enterprise life: Entrepreneurial period, growth period, maturity period and recession period, Then it analyzes the entrepreneurial ability characteristics that need to be matched. In view of the difficulty of measuring entrepreneur's ability and being unable to express it accurately, analytic hierarchy process (AHP) in system engineering and fuzzy comprehensive evaluation (FCE) in fuzzy mathematics will be adopted. Through advanced experiments, students' attention to the strategy analysis theory of each stage of the enterprise life cycle will be greatly improved. In particular, the understanding of the matching between entrepreneurial ability and life cycle does not stay in textbooks [6, 7].

The entrepreneurial ability matches the life stage of the enterprise, It is the key to form the competitive advantage of enterprises and determines the survival of enterprises. In different life cycles of enterprise development, at the node of enterprise strategy, enterprises will face two choices: opportunity and crisis. If an enterprise keeps a clear mind at

every stage of development, recognizes its own life cycle, seizes the precious opportunity from quantitative change to qualitative change, actively adopts new enterprise strategies, and smoothly realizes breakthroughs and transitions, it will continue to create performance and make the enterprise grow healthily. When these advanced theories "appear", students will gladly accept them and even have a deeper understanding.

The process, phenomenon and data experienced by the advanced experiment will be required by the follow-up theory course. These information materials are more unforgettable to students than the cases in the book, When teachers teach difficult, abstract and complex new knowledge, It is a good choice to use advanced experiments to resolve difficulties. There are cases, phenomena and data when teachers and students interact. When the advanced theory "appears", it is easy to resonate in the hearts of students. This is the advantage of the advance feedback experiment.

## 4 Conclusions

The results of the questionnaire survey show that the research and application of the advanced feedback experiment has enhanced the students' subject status, and cultivated the students' comprehensive ability, innovation ability and practical ability. It has some advantages and functions that other teaching methods do not have. Both computer and network technology simulation experiments and sand table simulation experiments have made outstanding contributions to the inspiring interaction of theoretical courses.

The setting of the advanced feedback experiment has improved the students' enthusiasm for learning. The theory is not boring, the case analysis has materials, and the inspiring interaction is not a mere formality. In the experimental class, the students apply the knowledge of economics and strategic management they usually learn to the decision-making of the enterprise. The simulation experiment makes the students feel how important the knowledge reserve is and how dangerous the wrong decision is. The students have become One by one business decision makers, greatly improve the students' interest in learning. Some abstract concepts in theoretical classes should preferably be equipped with corresponding experiments, so that students can have a perception link. This is why the country invests huge sums of money in the construction of university laboratories every year. Without the link of "existence", learning will feel dull and boring, even doubt and confusion.

The design of the advanced feedback experiment does not need to change the teaching plan of the original experimental class. There is no need to deliberately arrange it separately. Teachers can flexibly arrange it in the last 6–9 min of a certain experimental class according to the needs of classroom teaching. For any institution of higher learning in my country, the faculty conditions for designing advanced feedback experiments for liberal arts majors are already available, and their promotion and application will definitely make due contributions to my country's higher liberal arts education.

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