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Application of Interactive Teaching in Teaching Microeconomics: A Case Study of Teaching the Short-Term Cost Theory

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Abstract
In the traditional method of microeconomics teaching, teachers are guides who explain theories, models and curves. However, students are usually not fully participated in the class, thus the teaching effect is poor. In order to solve this problem, our research group have explored an application of interactive teaching method for microeconomics teaching. This paper shows an example on how to apply the interactive teaching method in teaching the short-term cost theory and expounds the problems in this process. Aiming at the problems and following the idea of interactive teaching, this study designs the corresponding teaching questions and processes, explains how to achieve the teaching goals through answering the questions, and finally discusses the advantages and disadvantages of the teaching method in teaching the cost theory.

Key words: Interactive; Teaching; Short-term cost theory

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INTRODUCTION
"Microeconomics" is a basic professional course of economics and management majors. Through a systematic study of the economic theory, students can develop their ability of economic analysis and thinking, understand the general phenomena and movement rules in the modern economic activities, and lay a foundation for the follow-up courses. In microeconomics teaching, it is difficult to teach and students also have difficulties understanding because of the complicated theories, abstract concepts and principles, and the use of a large number of mathematical models and graphics. Especially in the background of college education having changed from "elite education" to "popular education", the overall teaching goals have changed at the same time, and the objects of teaching have also changed. For the second class colleges, compared with those students of "elite education" times, current students' mathematics foundation and logic analysis ability are significantly weaker, and the students' learning and memory habits have obviously changed also. In the current teaching, the students' focusing on the subject are obviously short, and a lot of students tend to remember the content on the basis of understanding and lack the enthusiasm. In the such background, they are especially important to reform the teaching method of microeconomics, stimulate students' initiative, develop students' creative thinking, and let the students actively involve in class and play the main role.

The "interactive teaching model" refers to a whole dynamic process, in which teachers' "teaching" and students' "learning" interacting with each other. In this kind of complementary class activities, "teaching" and "learning" have a good relation; they promote each other, and develop together. By adjusting the relation between

a teacher and students and adjusting their interaction, form harmonious interaction between the teacher and students, have a harmonious interaction between students and students, strengthen the people and the environment effect, produce teaching resonance. This teaching method improves teaching effect. The "interactive teaching model" cultivates students' independent consciousness and innovate ability, and the goal is that let the students love to learning, know how to learn, be good at learning". In the "interactive teaching model", teaching knowledge and solving problems are considered emotional exchanges and communication between teachers and students. It is an interaction process of dynamic developing, mutual influencing, mutual teaching and learning. ("Who knows interactive teaching?", 2005).

In interactive teaching, the interaction between teachers and students is based on teachers' start-up. Before teaching new lessons, teachers make appropriate guidance to students, introduce relevant knowledge to students and put forward the requests, clear the obstacles of learning new knowledge, provide rich perceptual materials for students learning new lessons, and lay good foundations for students understanding. In the processes of guiding students to explore, teachers can provide some sub problems in accordance with students' cognitive regularity, let the students seek solutions independently, and teachers should pay attention to ensure that students have enough time to explore. When solving difficult problems, teachers should encourage students' exposing their thinking processes, discussion, helping each other, improving together, and cultivate the students' mathematical language expressing ability, cooperation spirit and group sense. Further more, teachers should also encourage and guide students to ask questions that is the difficulty point in the whole teaching, and answer students' questions on the spot, let the failure reasons of students solving problems be exposed, so students can understand the road to success and see the whole process of thinking, that will inspire them to transform solved mathematical problems to new variant problems. The students will finally discuss on the variant problems, summarize their experience, and have their innovations. ("What are the basic modes of interactive teaching?", 2012).

Taking the teaching practice of short-term cost theory as an example, this paper summarizes the application of interactive teaching method in microeconomics teaching.

1. PROBLEMS IN TEACHING SHORT-TERM COST CURVES

Currently, the microeconomics textbooks written by Gao Hongye are taught in the most of colleges, and this textbook is characterized by obscure words, cumbersome formulae, complex models and charts, and strong logic. These characteristics are reflected in the content of short-term cost curves in the Section 3 of Chapter 5. When teaching this part, we have the most common problems as following:

1.1 Not Understanding the Shapes of Curves Makes the Follow-up Study Difficult

The textbook first explains the cost classifications, and then gives cost curves of different shapes. In this part of the teaching process, students learn the best are the TFC and AFC, and have no big problems on the concepts of TC, TVC, AC, AVC and MC, but in the plotting, students do not understand why these costs have such curve shapes. However, nowadays students tend to remember the content on the basis of understanding, so teaching curve shapes become difficult, which will make students difficult to learn the collective diagram of short-term costs.

1.2 Have Difficulties Understanding the Logical Relation of Marginal Output and Marginal Cost When the Short-term Costs Change

Diminishing marginal return determines the changing ways of marginal output from rising to falling and marginal cost from falling to rising. In the preceding chapter Production Theory, students obviously have a better understanding of output changes brought by production which ranges from gradually getting close to the optimal combination ratio to gradually deviating from the optimal combination ratio. While in teaching the cost contents, students have difficulties understanding the cost changes caused by the diminishing marginal returns, and they do not have better understanding of the logical relation between the production factor combination ratio, output and cost.

1.3 Have Difficulties Understanding the Graphic Relation Between Total Cost Curve, Average Cost Curve and Marginal Cost Curve

In general, because of learning mathematics of years, students do not have big problems to analyze total cost, average cost and marginal cost relations through the algebraic expressions, and students are easy to accept the relation between the change of total cost and marginal cost, but they have difficulties understanding the position relations between total cost curve, average cost curve and marginal cost curve in Cartesian coordinates. They have difficulties understanding these curve shape relations.

2. DESIGN A TEACHING PROCESS FOR THE COST THEORY ON THE BASIS OF "INTERACTIVE TEACHING METHOD"

The traditional method of microeconomics teaching is mainly that teachers explain theories, models and curves and give their understanding of the content to students, and the levels of students participating in class are

low. Although students have a certain understanding to teachers' interpretation, it is hard to through this kind of passive learning to understand theories completely, and students have difficulties applying learned theories and graphics to real economy and are poor at applying theories. Students often understand a theory well, but can not solve problems. Taking "moving" as the basis, the interactive teaching changes from "active teaching" to teacher-and-student's "interaction". It emphasizes a two-way exchange between teachers and students and mobilizes students' enthusiasm and initiative, creating an active classroom atmosphere and motivating students to learn, understand, and master the knowledge taught by the teacher.

2.1 Design Problems and Processes

According to interactive teaching principles and the goal of teaching cost theory, designing a number of problems as follows:

a. Known K, L and Q, find MP, TFC, TVC (W = 100), TC, AFC, AVC and MC.

Table 1
Short-Term Cost

K	L	Q	MP	TFC	TVC	TC	AVC	AFC	AC	MC
400	1	100								
400	2	240								
400	3	400								
400	4	450								
400	5	480								
400	6	490								

b. As the change of the Q, find the change patterns of the TFC, TVC and TC, and represent them in the rectangular coordinate system.

c. As the change of the Q, find the change patterns of the AFC, AVC, AC and MC, and represent them in the rectangular coordinate system (and aligning with the above table).

d. Why are AVC, AC and MC rising after falling?

2.2 The Teaching Goal of Designing Problems

The goal of designing problems mainly is to guide students to complete a specific content, participate in class and complete the exploration for theories.

Goal I: Let students find output's accelerating to gradually slowing, and finally declining caused by the same input as well as the corresponding costs' falling to rising process through solving the questions a, b, c and d.

Goal II: Let students grasp the cost curve shapes, the curve's change patterns, and the position relations of these curves based on solving the questions b, c and d. Through the plotting of cost curves, students can become intuitive to understand basic shapes of the cost curves and feel easier to master the position relations between curves, such as the relation between AVC and AC. AC is the above AVC in rectangular coordinate system because AC is AVC adding AFC. Because AFC gradually declines, the distance between AC and AVC becomes smaller.

Goal III: Let the students find the relations of output, AVC, AC and MC in the rectangular coordinate system based on solving the question d. Students are to seek a variety of reasons of the cost changes, the diminishing marginal returns law's role in AVC, AC and MC changes, and the corresponding points between cost curve and output curve. That is, using production as a link, students are to interprete the relations between marginal cost and marginal production, average cost and average output.

3. ADVANTAGES AND DISADVANTAGES OF "INTERACTIVE TEACHING" IN THE TEACHING COST THEORY

In this part, the "interactive teaching" process is that "put forward questions—think and discuss questions—look for the answers—conclusion". Teachers predominate in the designing problems, and ask that students master the cost classifications, relations of cost curve shapes and positions, variable factors in the short-term cost, and the relation between the short-term output curve and the short-term cost curve. Students are dominant in the middle two tasks of the process, namely, through finding MP, TFC, TVC, TC, AVC, AFC, AC and MC's values, find the respective change regularities of output and cost values, and the relation of curve shapes and positions. Finally, the teacher and students sum up, complement each other, and summarize the change regularities of various cost, cost curve graphic changes, as well as the role of the law of diminishing marginal returns in cost curve changes. By students solving the designed problems, it is beneficial to students' exerting subjective initiative and students' participating in class. Through students' positive thinking about the knowledge, they achieve learning goals in participation. At the same time, the use of interactive

teaching method makes teaching and learning organically unify, has an active classroom atmosphere, reduces the distance between teachers and students, lets teaching and learning become the best.

In teaching cost theory, the use of interactive teaching makes the theme clear and fully mobilizes students' enthusiasm and creativity; however, there are also some disadvantages—students need longer time to solve the questions a, b and c, which may affect the teaching process. At the same time, because the students' thinking depth and breadth are unbridled, they may feel frustrated when the teacher gives a partial summary on the teaching content. Therefore, teachers should pay special attention to giving students a proper encouragement, and avoid affecting students' learning initiative and enthusiasm.

CONCLUSION

Interactive teaching is a kind of equal, free, and open teaching method. In the "two-way interaction", the key to success is to exert students' initiative through appropriate classroom organization. Interactive teaching is not the same as teachers ask questions in class, or students ask questions and teachers answer students' questions after class. Interactive teaching method fundamentally establishes a model to develop teaching and learning, and has a new teaching idea to allow teachers and students to participate in class together. Interactive teaching method enhances students' participation in class and releases students' power for exploring knowledge, thus improving the teaching quality.

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