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The Teaching Design of Microeconomics Based on Fragmented Learning

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ABSTRACT

Along with the increasing improvement of the technical support of fragmented learning and the gradual enrichment, fragmented learning is widely accepted by college students. At the same time, fragmentation learning conflicts with the systematicness of theoretical knowledge because of its fragmentation in learning time, learning content and learning mode. This contradiction is particularly serious in Microeconomics teaching, which pays attention to logic, systematicness and thinking training. Therefore, this paper focuses on the fragmentation teaching design of Microeconomics from the aspects of enriching fragmented learning resources, formulating scientific fragmentation teaching design and constructing a reasonable fragmented learning evaluation system, so as to realize the organic integration of fragmented learning and the logical thinking system of economics.

Keywords: *fragmented learning, Microeconomics, teaching design*

I. INTRODUCTION

Against the background of "Internet + Education", the integration of information technology and classroom teaching brings profound changes in the mode of education, teaching and learning. In the higher education, teaching mode, teaching method, teaching means, learning method and learning mode are inevitably impacted by fragmented learning. Fragmented learning is favored by contemporary college students because of its advantages in learning at any time, at random, on demand and with quantity. At the same time, in the era of mobile communication technology, smart phones, pad and other portable communication tools also provide material and technical support for college students' fragmented learning.

According to the teaching characteristics and teaching objectives of different courses, many teachers have discussed the specific fragmentation teaching design. Liu Xialing (2018) designed a modular teaching framework of Financial Management by using micro course as a fragmented learning tool. Liu Xialing (2018) proposed a training framework for fragmented learning of Accounting based on the knowledge construction of business cycle to deal with the fragmentation obstacles in accounting learning and strengthen the systematic thinking shaping of accounting students. Liu Hongxia et al. (2018) conducted the knowledge structure model of Higher Mathematics through Analytic Hierarchy Process (AHP) so as to improve college students' understanding and learning efficiency among the fragmented learning students in Higher Mathematics. Yang Hongjun et al. (2018) took Basic Computer Curse as an example and proposed the design of fragmented learning activities based on Wechat platform. Yang Cailin (2018) took the course of Website Planning and Design as an example to explore the teaching design and application of micro course based on fragmented mobile learning.

At present, in higher education, the core controversy and dilemma of fragmented learning lie in the conflicts between fragmentation learning and the systematicness of theoretical knowledge because of its fragmentation in learning time, learning content and learning mode. This contradiction is particularly serious in Microeconomics teaching, which pays attention to logic, systematicness and thinking training. Therefore, in the teaching of economics, how to integrate the fragmented learning with the logical thinking system in economics, the exploring of fragmented learning mode in economics and the designing of fragmented learning activities of economics are the key to solve this contradiction.

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II. THE BASIC SITUATION OF FRAGMENTED LEARNING OF COLLEGE STUDENTS

A. The improvement of fragmented learning technology support

In the era of "Internet +", information technology, mobile communication technology and intelligent technology have been widely infiltrated into all aspects of higher education. This makes the time and space of university students' learning achieved in-depth and effective development. Firstly, mobile communication, big data, cloud computing and other fragmented learning technologies have developed rapidly and gradually improved. They provide mobile devices such as smart phones, laptops and pad for college students' fragmented learning. Secondly, the complete coverage of wireless network and 4G network in colleges and universities provides the possibility and convenience for students to carry out fragmented learning inside and outside the University. According to the statistics of the Ministry of industry and information technology, there are 1600960.96 million mobile phone users, 1308.47 million mobile Internet users and 1275.51 million 4G users in China in 2019. Among them, almost all college students have mobile phones, and the use of mobile phones by college students is very common. Thirdly, new media such as QQ, Wechat, Micro Blog, Micro Video, APP and other new media make the transmission and dissemination of knowledge widely, and bring the diversification of fragmented learning tools. At the same time, the functions of interactive, community-based, professional and collaborative of a large number of mobile network platforms are increased powerfully. This makes the learning mode of college students turned from fixed, continuous, closed to flexible, diversified, open and shows a fragmented situation.

B. The gradual enrichment of fragmented learning resources

As "Internet + Education" has developed, China has concentrated on human resources and financial resources to build a large number of online educational resources. With the aim of building and sharing, the "Internet + technology" has been applied to create online course system and public service and management platform that can achieve various learning modes such as initiative, collaboration, research and autonomy. The core of teaching resources and platforms is increasingly enriched and perfected. It is not only the premise and foundation of "Internet + Education", but also provides a large number of resources and platforms for students to learn from fragmentation.

At present, China has many higher education resource platforms, such as MOOC of Chinese University, MOOC China, Netease Open Class, Wisdom Tree, Netease Cloud Classroom, Online School, Vocational Education MOOC, etc. Until April 2019, more than 2000 colleges and universities have opened MOOCS and there are 12.5 thousand online MOOCS which is 1.5 times more than the 5000 courses in 2018. These courses cover many subjects, such as national fine arts, computer science, foreign language, science, engineering, economic management, psychology, literature, history and philosophy, art and design, medicine and health, education and teaching, law, agriculture, forestry and horticulture, etc. By March 2020, 820 National Excellent Courses have been offered.

C. The wide acceptance of fragmented learning by college students

In the era of "Internet +", the development of information technology and mobile communication technology has made our world full of Internet. Students are no exception. The living space of students, such as classrooms, libraries, apartments, restaurants, etc., has already been fully covered by wired or wireless networks. Mobile devices such as smart phones, laptops and iPads make it possible for college students to learn fragmentary at anytime and anywhere. According to the China Mobile Learning Report (2015) released by Techsoft, 74% of the respondents believe that mobile learning can benefit learners, and 92% of the respondents have expressed certain preference for mobile learning. According to the 2017 China Mobile Education Industry Research Report released by iResearch, mobile terminal traffic accounts for about 80% of the learning process auxiliary links, while the PC terminal traffic of the core learning link (absorbing complex and system knowledge) accounts for more than 95%. According to Amazon China's 2019 National Reading Report released by Amazon, 97% of respondents said that deep reading and fragmented reading would be involved, and 71% of respondents said that their total reading volume increased after they started reading e-books. 38% of the respondents mainly read in depth and 33% in fragmented reading. This shows that mobile fragmentation has become one of the main ways for the public to obtain information.

At present, fragmented learning has become the best way of University autonomous learning. According to a survey report on mobile phone use among college students in China released by Mycos Research Institute, more than 80% of college students use mobile phones more than 5 hours a day, and 79% of them use mobile phones in class. 24% of the surveyed college students think that mobile phone has a "positive effect" on classroom learning (searching information, auxiliary learning, etc.). Among the groups who use mobile phone assisted instruction in class, courseware or teaching material sharing (69%), teaching interaction (answering questions, voting, lottery, etc.) (51%) and roll call (50%) are the three most commonly used mobile phone functions.

III. THE ADVANTAGE OF FRAGMENTED LEARNING

As a product of "Internet + Education", fragmented learning has many advantages compared with traditional learning methods.

Firstly, the Internet makes a large number of educational resources that promotes the "Popularization" and fairness of knowledge dissemination, which undoubtedly improves the popularity and the availability of knowledge, so as to bridge the "knowledge gap". Therefore, college students can obtain more high-quality education resources they need through network mobile devices.

Secondly, Micro lecture, Micro Blog, Wechat and other fragmented learning tools on the Internet platform make it possible to exchange information quickly and conveniently. College students can expand and share online education resources by expressing their opinions and comments, sharing learning experience and resources, and directly participating in the production of online education resources. This not only enriches the network education resources, but also improves it College Students' initiative in fragmented learning, broadening of vision and enthusiasm of innovation activities.

Thirdly, the fragmented learning resources obtained from the segmentation of knowledge can enable college students to carry out fragmented learning at anytime, anywhere, on demand and with quantity. Compared with the traditional teaching method, fragmented learning can achieve the mobility of learning place, the high flexibility of learning time, the availability and timeliness of learning resources, the strong pertinence and personalization of learning content, and the high absorption of learning effect, which makes it easier for students to pay attention to and accept it.

Fourthly, fragmented learning at anytime, anywhere, on demand and with quantity can help universities form a more concise and clear knowledge system. The rich source of fragmented knowledge and diversity of information can also help college students to change their thinking. Therefore, fragmented learning as a convenient and novel way to acquire knowledge, has brought changes in the way of college students learning. It has become a widely accepted learning method for college students.

IV. THE DISADVANTAGES OF FRAGMENTED LEARNING

With the enrichment of fragmented online education resources and the continuous development and deepening of fragmented learning, fragmented learning has induced cognitive obstacles such as perception, attention, memory and thinking, and exposed many disadvantages.

Firstly, the fragmented knowledge, as the object of fragmented learning, may involve a lot of latest or hot information, which is often provided by net friends spontaneously, which may not be professional and rigorous enough. Even in the trend of some economic interests, there may be some false, inferior, incomplete and inaccurate fragmented information. This not only increases the learning cost of fragmented learning, but also the knowledge system of college students is not complete, and the values have not been fully established, which will mislead college students.

Secondly, while the fragmented learning resources are enriched, a large number of fragmented knowledge and information with short, frequent and fast must improve the search time, selection difficulty and search cost of fragmented knowledge and information, which not only increases the cognitive load of college students' brains, but also leads to passive acceptance of knowledge, lack of depth of thinking, distraction of attention, and even makes students' knowledge acceptance passive, lack of depth of thinking, distraction which making them lack of knowledge College students have cognitive bias in fragmented students.

Thirdly, in the traditional learning mode, people acquire knowledge and information in a continuous and linear way. The relationship and correlation between different knowledge and information make it easy for the brain to form a knowledge system and carry out memory. However, fragmented learning weakens and interrupts the connection between knowledge. The lack of "relevance" leads to the disappearance of the most familiar knowledge structure of the brain. This eventually leads to the problem of memory impairment. At the same time, the short-term memory formed by fragmented learning is the main way of memory. Due to the randomness, randomness and discontinuity of fragmented learning, short-term memory can’t be repeated frequently, and it is easy to eventually fade away.

Fourthly, although the fragmented knowledge after segmentation reduces the difficulty, it also brings high absorption of learning effect, but also weakens and separates the connection between fragmented knowledge resulting in the weakening and interruption of the connection between knowledge, which makes it difficult to form a complete knowledge system. It is the construction period of college students' professional knowledge system during the university period. If they contact with fragmented knowledge for a long time, it is easy to cause the isolation of knowledge which is difficult to play a role, thus weakening the ability of college students to solve complex problems.

V. TEACHING DESIGN OF MICROECONOMICS BASED ON FRAGMENTED LEARNING

In higher education, any course has its unique systematicness, and Microeconomics is no exception. As the professional foundation of economic management

courses, not only the theory and knowledge of the course itself have strict logic and overall systematicness, but also there are theoretical logicality and systematic knowledge system with other professional courses of economic management. Therefore, the main goal of economics education is to cultivate students' economic thinking and thinking ability, and to develop students' innovation and application ability. And as a basic course of economics and management, it can cultivate the students' logical thinking ability and the ability to analyze and solve problems.

In the specific teaching process of Microeconomics, the advantages of fragmented learning at anytime, anywhere, on demand and with quantity are indeed beneficial to students to master some knowledge points by using fragmentation time, and enable students to better understand and apply economic principles by combining economic phenomena. Compared with Macroeconomics, Microeconomics is rich in content and scattered in knowledge points. Fragmented learning undoubtedly makes knowledge points more scattered. At the same time, it also makes students' understanding not deep enough to carry out deep learning, understand the internal logical relationship between knowledge and construct a complete knowledge system. Based on this, the fragmentation teaching design of Microeconomics can be carried out from the aspects of enriching fragmented learning resources, formulating scientific fragmentation teaching design and constructing reasonable fragmented learning evaluation system, so as to realize the organic integration of fragmented learning and logical thinking system of economics.

A. *Focusing on enriching the resources of fragmented learning*

Fragmented learning resources are the premise and foundation of fragmented teaching design. The commonly used teaching resources of Microeconomics include MOOCS, classic small cases, history knowledge of economic theory, economic news and economic essays.

1) MOOC resources: As a professional basic course for students majoring in economics and management, the MOOC resources of Microeconomics are relatively rich compared with other university courses. There are more than 30 Microeconomics MOOCS in MOOC of Chinese Universities alone, and four of them are the National Excellent Courses. These MOOCS not only enrich the teaching resources of Microeconomics, but also provide more choices for teachers.

2) Classic small cases: There are some classic cases in Microeconomics. Although they are usually short, it is necessary to understand the relevant theories, such as the paradox of diamond and water, and the harm of cheap grain to farmers. These small classic cases are not only suitable for fragmented learning resources, but also need to be made in a more professional and interesting way.

3) Knowledge of the history of economic theory: Compared with other natural sciences, Microeconomics is still a relatively young course, so it is still in constant change and development. Understanding the relevant history and knowledge background is extremely important for better understanding and applying theory. Therefore, fragmentation design and teaching can be combined with the needs of systematic learning. Specifically, the knowledge of the history of economic theory mainly includes two aspects: the introduction of economists and the school of economics.

4) Economic essays: It is also called economic prose. It is an important form and carrier to popularize economic knowledge and cultivate economic thinking as an economic style that reflects new economic views and is close to life. Although, the timeliness is slightly different compared with economic news, but students can learn how economists or scholars apply economic theory to practice from the economic essays. This is very important to improve students' practical ability and innovation ability, so it is also our indispensable fragmented learning resources.

5) Economic news: Relevant and up-to-date news is the best educational resource for deepening students' understanding of theoretical knowledge, testing students' learning effect and improving students' ability to apply what they have learned. For example, news on the price of masks caused by the recent epidemic of new crown disease. Videos and articles in this field can not only be used as fragmented educational resources, but also be provided by teachers and students. Let students participate in the search of economic news to improve their learning initiative, enthusiasm and interest.

B. *Making scientific fragmentation teaching design*

1) Reasonable choice of teaching mode: In view of the characteristics that Microeconomics pays more attention to theoretical grasp and thinking training, its fragmented teaching design is more suitable for mixed teaching mode than flipped classroom mode in the choice of learning mode. The study of some important theories and concepts still depends on the traditional systematic teaching of teachers. On the one hand, it is conducive to overcome the disadvantages of fragmented learning which easily leads to cognitive obstacles. On the other hand, it is also conducive to help students build up the overall knowledge system. In the specific teaching design, we must deal with the proportion of holistic learning and fragmented learning, and find out which content is suitable for fragmented learning and which content is suitable for systematic learning. It should be noted that

even in the part of systematic learning, some fragmented learning contents can still be designed to supplement.

2) The logical modular decomposition: In order to adapt to the needs of fragmented learning at anytime, anywhere, on demand and with quantity, it is necessary to decompose the teaching content of Microeconomics into several independent sub modules. However, it should be noted that modular decomposition must take into account the needs of fragmented learning, the relative integrity of modules and the correlation between modules, so as to avoid the separation of modules after modular decomposition which can't realize the recovery and reconstruction of the correlation between modules, and then have adverse effects on the construction of students' knowledge system. Specifically, Microeconomics can be divided into seven modules: supply and demand principle, consumer behavior theory, production and cost theory, market theory, factor decision theory, general equilibrium and micro-economic policies.

3) The dimensional teaching design: According to the characteristics of the teaching content, a variety of teaching resources are comprehensively used to carry out the three-dimensional teaching design. In this process, the key concepts, core theories and teaching difficulties, especially the logical relationship between sub modules and modules, must be systematically taught by teachers. The content that does not require high requirements in logic, difficulty and importance can be fragmented learning by MOOCS Video and students' participation. The relevant knowledge of economic history, especially the economics school, can be used for fragmented learning. It is very important to grasp and construct the logical relationship between the key concepts of Microeconomics and economic theory, and help students to build a complete knowledge system. While classic small cases, economic essays and economic news have their own advantages in timeliness, depth of analysis and representativeness, but they are all conducive to help the analysis ability, practice ability and innovation ability of high school students

C. Constructing a reasonable fragmented learning evaluation system

The purpose of constructing fragmented learning evaluation is to test the learning effect of students on relevant theories and knowledge on the one hand, and to understand and master the effect of fragmented learning mode on the other hand. However, no matter which evaluation objective is to be achieved, the evaluation should be conducted from two aspects of process and result. Through the process and stage teaching evaluation index, we can not only track students' fragmented learning process, understand students' mastery of relevant theoretical knowledge and experience, feelings and suggestions in the process of fragmented learning, but also timely adjust and improve the subsequent fragmented teaching design according to these feedback, so as to better achieve the goal of fragmented learning. In the specific evaluation process, we can comprehensively use the data of test, data platform, teacher-student mutual evaluation, students' mutual evaluation, reading feedback, and the contribution of fragmented learning resources to construct a reasonable fragmented learning teaching evaluation system.

In addition, in order to better track students' learning process, understand the basic situation of students' fragmented learning and grasp the learning effect of students' relevant theories and contents, more extensive communication platform can be established between teachers and students and between students through Wechat and QQ, so as to organically connect in class and after class, which is a continuous process of Microeconomics learning.

VI. CONCLUSION

Against the background of "Internet + Education", the technology support of fragmentation learning is improving, and the learning resources of fragmentation are gradually enriched. Although fragmented learning induces cognitive problems such as perception, attention, memories and thinking, it has many advantages compared with traditional learning methods, and has become a widely accepted learning method for college students.

In the specific teaching process of Microeconomics, the advantages of fragmented learning at anytime, anywhere, on demand and with quantity really enable students to better understand and apply economic principles by combining economic phenomena. However, due to the rich content of Microeconomics, scattered knowledge points and fragmented learning, students' understanding is not deep enough, it is difficult to carry out in-depth learning, understand the internal logical relationship between knowledge, and build a complete knowledge system. Based on this, the fragmentation teaching design of Microeconomics can be carried out from the aspects of enriching fragmented learning resources, formulating scientific fragmentation teaching design and constructing reasonable fragmented learning evaluation system, so as to realize the organic integration of fragmented learning and logical thinking system of economics.

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