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From "Abstract Model" to "Thinking Internalization": The Logical Reconstruction and Practical Approach of Microeconomic Curriculum Reform

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Abstract: As the basic core curriculum of economics and management majors, microeconomics has long faced triple difficulties of "model abstraction is difficult to understand, theory and reality are difficult to connect, and value shaping is difficult to integrate." Based on the systematic investigation of the practice of teaching reform in many universities in recent years, this paper proposes that the curriculum reform of microeconomics should shift from the paradigm of "knowledge transmission" to the paradigm of "thinking internalization." The core approach of the reform is to build a trinity teaching mode of "digital intelligent tool support, situational ideological and political integration, and ability-based evaluation." Specifically, visual interaction technology is used to solve the problem of model abstraction, the logical chain of "theoretical analysis reality mapping value sublimation" is used to realize the organic integration of Ideological and political elements, and the assessment mechanism is reconstructed with the "344" ability-based evaluation system. This paper holds that the deep mission of microeconomic teaching reform is to help students complete the cognitive transition from "reciting economic conclusions" to "thinking like economists."

Keywords: Microeconomics; Teaching reform; Digital intellectualization; Curriculum politics; Competence-based assessment

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1. Problem posing: The "triple dilemma" of microeconomics teaching

Microeconomics is the core basic course in the training program of economic and management majors, and its importance has been widely recognized. However, the course has long faced structural difficulties in practical teaching. Studies have pointed out that microeconomics has "more abstract concepts, more mathematical knowledge" and relatively limited teaching hours, resulting in students "losing interest and motivation", and teachers' teaching enthusiasm is also affected [1]. Based on the teaching reflection of many colleges and universities, the current dilemma of the microeconomics curriculum can be summarized into three interrelated levels.

First, the "model abstraction dilemma" at the cognitive level. The core analytical tools of microeconomics — indifference curve, marginal substitution rate, cost curve, game matrix, etc. — are presented in highly simplified mathematical models. For freshmen and sophomores who lack training in mathematical thinking, these tools are often reduced to "graphic symbols" requiring mechanical memory rather than analytical frameworks for understanding reality.

Students can skillfully draw a long-term equilibrium map of a perfectly competitive market, but it is difficult to use this tool to analyze the price competition of takeout platforms. There is an urgent gap between the formal beauty of models and their explanatory power.

Second, the "disconnection dilemma between learning and application" at the ability level. Traditional teaching is mainly taught by teachers and demonstrated by PPT, and students are in a passive state of acceptance. This "cramming" approach may produce acceptable paper scores on final exams, but it is difficult to translate into real analytical skills. When students face real-world economic phenomena, they often return to the state of "pre-scientific thinking" and cannot invoke the lessons learned for logical disassembly [2]. This division between "knowledge" and "action" is the deep crux of the low achievement of curriculum teaching objectives.

Third, the "Ideological and political suspension dilemma" at the value level. With the comprehensive development of curriculum ideological and political construction, microeconomics teachers have been given the new mission of "value leading." In practice, however, it is common to attach a "policy advocacy" link to the end of the course, or to rigidly graft local political discourse into the framework of western economics. This kind of "two skin" integration method is not only difficult to achieve the goal of educating people, but also may damage the internal logical consistency of the curriculum, causing cognitive confusion and even a contrarian psychology in students.

The triple dilemma is intertwined, pointing to a fundamental question: how should microeconomics courses position their educational objectives? If the goal is simply to "impart an established body of knowledge", then the dilemma may be just a technical optimization of teaching. But if the goal is to "develop a way of thinking that analyzes the real world", then people need a systematic reconstruction from idea to practice.

2. Paradigm shift: From "knowledge transmission" to "internalization of thinking"

Looking at the excellent cases of microeconomic curriculum reform in recent years, people can identify a common paradigm transformation trend from the "knowledge transmission" paradigm to the "thinking internalization" paradigm. The former focuses on "what teachers teach" and "what textbooks write", while the latter asks "what students have learned" and "what students can use." This transformation is not a denial of knowledge teaching, but a re-anchoring of the position of knowledge in teaching activities: knowledge should not be the end point, but the carrier of thinking training [3].

The basic teaching model proposed by Huang Xinfei's teaching team at the School of International Finance of Sun Yat sen University is a typical representative of this paradigm shift. This model "insists on student growth as the center", devotes itself to stimulating freshmen to "transform the mode of thinking and understanding from passive learning to active learning", and takes improving students' "ideological ability, learning ability, and action ability" as the core goal of teaching system construction. The lesson of this case is that the teaching reform of microeconomics is first and foremost a conceptual revolution in "what is learning achievement."

The paradigm of "internalizing thinking" includes three progressive levels of goal setting.

Level 1: Tool mastery. Students can accurately understand the core concepts and tools of the supply and demand model, elasticity analysis, cost theory, and market structure, which is the basic threshold of the course. However, the teaching that stays here must be a failure, because the goal of this level can be achieved only by textbook reading and pre-exam assault, without the need for classroom existence.

Level 2: Analyze migration. Students can apply the analytical framework learned in class to real-world situations outside textbook exercises. This is not a low-order application of "illustrative principle", but in the face of uncut real problems, they can independently choose appropriate analysis tools, build simplified analysis models, and draw logical self-consistent inferences [4]. This is the key leap from "being able to do problems" to "thinking."

Level 3: Thinking habits. Students gradually develop a mental inertia of observing daily life with economic logic. When one sees price fluctuations, the first reaction is to look for changes on both sides of supply and demand. In the face of resource allocation decisions, students can consciously weigh marginal income and marginal cost; When discussing

public policy, students can actively focus on incentive effects and efficiency consequences [5]. The development of this habit of thinking is the most profound educational achievement of microeconomics courses.

The paradigm shift from "knowledge transmission" to "thinking internalization" means that the focus of curriculum reform will shift from "how to speak more clearly" to "how to practice more firmly", from "textbook system" to "learning process", from "teacher's teaching" to "student's learning." This is a systematic project that requires holistic change.

3. Three-dimensional integration: the core approach of microeconomics curriculum reform

Paradigm shift requires a landing path. Based on the teaching reform practice of Peking University, Shandong women's college, Southwest University of Finance and economics, Ningbo University of Finance and economics and other institutions in recent years, a clear core approach has emerged: teachers should take "digital intelligence tools, situational thinking and politics, and ability-based evaluation" as the three pillars to construct a new "three-dimensional integrated" microeconomic teaching model.

3.1. Tool dimension: How digital intelligence technology solves the problem of model abstraction

The teaching difficulties of microeconomics largely stem from the tension between static textbooks and dynamic thinking. The graphics in textbooks are solidified, while economic analysis is essentially a process of comparing static analysis with dynamic adjustment [6]. Although traditional blackboard writing can be deduced gradually, it is limited to time and space; Although traditional PPT can preset animation, it cannot respond to classroom-generated questions.

The reform of "three modernizations" implemented by Qiu Xincheng, teacher of Guanghua School of Management, Peking University, in the course of "microeconomics" provides a way to break through this bottleneck. The so-called "three modernizations" are "visualization, interactive experiment, and intelligent feedback." Visualization technology presents Abstract marginal quantities, equilibrium points, and welfare changes in real time in dynamic graphics, so students can intuitively observe the impact of parameter changes on equilibrium results. The interactive experiment transforms the classroom into an economics laboratory, where students play both sides of supply and demand in the simulated market and experience the process of price discovery. Intelligent feedback relies on an AI teaching system to realize the functions of "personalized question making, real-time question answering, virtual training", and so on.

The value of technical tools is not flaunting skills, but liberating students from the mechanical memory of static graphics and concentrating cognitive resources on really important thinking activities: the rationality of hypothesis setting, the logic of variable relations, and the rigor of inference process. When the marginal cost curve can be dragged and changed in real time on the screen, and the equilibrium point is adjusted dynamically, students no longer need to memorize the conclusion that "the rising marginal cost leads to the left shift of the supply curve." They saw the process and understood the logic [7].

3.2. Value dimension: How curriculum thought and politics move from "embedding" to "integration"

Curriculum ideology and politics are a proposition that microeconomics education reform cannot bypass. However, as a professional field with distinct disciplinary paradigm boundaries, economics is much more difficult to integrate with politics than college Chinese or ideological courses. Simplistic "labeling" is not only ineffective, but also harmful. The teaching logic of "theoretical analysis reality mapping value sublimation" put forward by Zhong Bingping, teacher of Ningbo Institute of Finance and Economics, provides a methodological framework for solving this problem. The core meaning of this framework is that ideological and political elements should not be used as an additional part of the external "embedded" curriculum, but should be "integrated" into the whole teaching process through the extension of the internal logic of the discipline.

Specifically, the logic consists of three steps. The first step, theoretical analysis: teachers lead students to rigorously

analyze the internal logic of economic concepts, such as the mathematical form and empirical evidence of "diminishing marginal utility." The second step is reality mapping: Project theoretical tools to local reality situations, such as analyzing the rhythm of resource investment in precision poverty alleviation with diminishing marginal utility. The third step is value Sublimation: in the process of analysis, the value meaning is naturally derived. Poverty alleviation resources need to accurately identify the inflection point of marginal utility, which is not only an efficiency consideration, but also a responsible attitude towards limited public resources. Throughout the process, teachers have not additionally "preached" any values, which are already embedded in rigorous economic analysis.

The ideological and political demonstration course of Xiehe College of Fujian Normal University also shows similar characteristics. In teaching "monopoly competition market", Yu Xi "combines economic principles with practical problems to guide students to explore the application of theory in social governance." The key to its success is that social governance is never just an issue of economic efficiency, but the introduction of the perspective of economic efficiency provides a unique analytical dimension for governance discussion. Ideological and political integration is not a reason to weaken professionalism, but an opportunity to demonstrate a sense of professional strength.

3.3. The dimension of evaluation: From "knowledge replication" to "ability-based"

Exams are the baton. If educators do not change the way of assessment and evaluation, all the good ideas about thinking training will fail. The traditional microeconomics course assessment is mainly based on the final closed-book examination, and the questions are mostly noun interpretation, multiple-choice questions, and calculation questions. The core ability of the examination is "knowledge reproduction." Students cannot understand economics at all, as long as they memorize the graphic conclusions and brush through the real questions over the years before the test, they can still get high scores. This evaluation mechanism fundamentally conflicts with the paradigm of "thinking internalization."

The "344" competency-based evaluation system established by Meng Ying, a teacher of Shandong Women's College, in the course of microeconomics, provides an operational alternative. The so-called "344" refers to the compound evaluation framework of "three-dimensional, four stages and four types." The ability of three levels of three-dimensional evaluation: knowledge mastery, analysis and application, and innovative practice; The four stages cover four links: pre-class preparation, classroom participation, after-class homework, and final project; The four types include objective testing, subjective discourse, group projects, and personal reflection.

The deep logic of this evaluation system is to shift the focus of evaluation from "result" to "process", from "single point" to "continuity", from "other evaluation" to "combination of self-evaluation and other evaluation." Students continue to receive feedback about their learning status throughout the semester, and teachers can dynamically adjust the pace of teaching according to the process data [7]. More importantly, competency-based assessment sends a clear signal that the course is about whether they use it, not how much they memorize.

4. Practical picture: Typological analysis of teaching reform cases

The above three-dimensional approach is not an abstract idea, but has taken root in the specific practice of many colleges and universities. Examining these cases in a typological framework helps refine transferable reform experiences.

"Digital intelligent traction" type. The reform of Peking University and Shandong Women's College takes technical tools as a breakthrough, and its advantage is that it can be effective and easy to promote in the short term. The introduction of a technology platform can quickly increase the frequency of classroom interaction and improve students' surface experience. But there are risks to such reforms: without clear pedagogy, technology could become a formalist new outfit. AI questions are intelligent again; if the questions still examine isolated knowledge points and do not touch the core of thinking training, the reform will remain shallow.

"Ideological and political integration" type. The reform of Ningbo University of Finance and Economics and Fujian Normal University Union College takes value guidance as the core concern, and its advantage is that it responds

to the fundamental task of cultivating people by virtue and strives for more institutional resources for the curriculum. However, such reforms need to be alert to the alienating tendency of "thinking about politics for the sake of thinking about politics" [8]. When teachers devote too much energy to excavating so-called "Ideological and political elements" and even distort the logic of economics to accommodate policy statements, the professional foundation of the curriculum will be eroded. Excellent ideological and political integration should be like salt in water, with taste and no trace.

"Research teaching" type. The basic model of the school of international finance of Sun Yat Sen University emphasizes "scientific research and education", which stimulates students' desire for inquiry and research ability by introducing academic frontiers and research projects into the curriculum. Such reforms touch on the deep goal of thinking training, and have achieved remarkable results in educating people, but they have higher requirements for teachers' scientific research ability and curriculum resources, and higher promotion costs. The experience of Southwest University of Finance and Economics also shows that teachers' self-compiled problem sets and case sets play a key role in "significantly improving students' inquiry learning ability" [9].

These types are not mutually exclusive, but can be organically integrated. An ideal educational reform plan should take a clear concept of education as the core, choose an appropriate path according to the orientation of colleges, the characteristics of students, and the conditions of teachers, and gradually expand to other dimensions. For applied undergraduate colleges, the goal orientation of "consolidating basic professional theory, enhancing learning potential, and improving practical ability" shown by Huaiyin Institute of Technology research should be the starting point of reform logic [10]. For research universities, more emphasis can be placed on academically oriented inquiry training. There is no universal standard answer to education reform, only the optimal solution suitable for the school's situation.

5. Conclusion

Today, with the reform of microeconomics curriculum, technical tools are changing with each passing day, teaching models are being renovated, case bases and exercise bases are becoming thicker and thicker, and major class, micro class, and flipped class are taking turns. But if one asks: what is the point of all this innovation? The answer may be more modest than people think.

Education reform is not about showing how "teachers can teach", but about helping students "learn" more effectively. It is not just drawing, calculating, and interpreting terms; it is a way to see the world. When students leave school and forget the specific definitions of marginal utility, Nash equilibrium, and price discrimination, they can also leave some traces of thinking habits and analytical tools.

The process from "abstract modeling" to "mind internalization" is not meant to be easy. It requires teachers to step down from the lectern of knowledge authority and become designers and companions of students' learning process; It requires the curriculum to move from a closed textbook system to an open, real world; It requires a shift in evaluation from a screening tool to a growth ladder. But it is this uneasiness that makes teaching a lifelong professional endeavor.

The deep mission of microeconomic education reform is to help students complete the cognitive transition from "reciting economic conclusions" to "thinking like economists." This is not only the professional pursuit of economic education, but also the specific carrier of the mission of university education. There is still a long way to go.

Disclosure statement

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