

# Research on the Application of Problem-Oriented Teaching Model in the Course of Accounting Information System

Yihan Wang<sup>1,\*</sup> Xueer Zhai<sup>1</sup>

<sup>1</sup>School of Accounting, Nanjing University of Finance and Economics, Nanjing, Jiangsu, P. R. China

\*Corresponding author. Email: wyhnufe@163.com

## ABSTRACT

The purpose of this study is to apply the problem-oriented teaching Model in the practice of Accounting Information System course, to improve students' ability to understand and apply knowledge, and to form a unique competitive advantage for accounting professionals. The research significance lies in that through the application of the problem-oriented teaching Model, students can truly understand the process and data relationship of the integration of finance and business, master the theory, practice and frontier development of the Accounting Information System course, learn to use the system Financial analysis of accounting data and business data in the program, and effectively improve students' ability to analyze and solve problems. Through the questionnaire survey of teaching evaluation, this article shows that the introduction of problem-oriented teaching methods into the course of Accounting Information System is an effective method to enhance students' motivation and effectiveness.

**Keywords:** *problem-oriented teaching methods, Accounting Information System, teaching model*

## I. INTRODUCTION

The Accounting Information System (AIS) course is developed from the traditional Accounting Computerization course. So far, there are three main directions in its curriculum design:

The first is information technology orientation, which focuses on IT technology. This Model allows students to open the "black box" inside the information system and understand the technical issues. The content of the course is based on the use of a programming language to design an accounting system. It is not difficult to see that this kind of guidance basically exists in universities of science and engineering, especially the AIS teaching team mainly based on the background of computer science. The difficulty lies in how to balance IT and accounting theory in the teaching content, so as to avoid the misunderstanding of non-accounting in teaching.

The second is to simulate accounting orientation, that is, the traditional teaching Model of accounting computerization. This Model is usually paired with an AIS or ERP product with a high market share as practical teaching software. The software basically retain the traditional accounting workflow, from the entry of accounting documents to the output of books and reports. At the same time, students can intuitively

feel the real-time processing of accounting business and are impressed by the advantages of computerized accounting. However, the disadvantage of this kind of guidance is also obvious. Because the accounting workflow of the general AIS software is basically automated, the operation interface is simple and easy to understand. In this learning environment, AIS teaching has become a software operation training course, and the software operating principles and technical details are often overlooked. More importantly, this guidance cannot reflect the changes and development of accounting in the IT environment, and in particular cannot reflect the new characteristics of internal control in the IT environment. Therefore, this is a teaching Model suitable for practical experience of financial accounting courses.

The third is business process orientation, that is, arranging the content of AIS courses from the perspective of financial and business integration is a breakthrough in the simulation of accounting guidance, because it emphasizes the role of IT in reengineering accounting business processes. The advantage of this Model is that students can experience the whole process of accounting information generation, processing and utilization from the actual operation of the enterprise. More importantly, the organization of AIS course content through business processes makes it easier to embed business process control points and audit

content. At present, the international mainstream ERP software has downplayed the traditional accounting operation interface. Instead, the process is the center, collecting original information in various business departments, and at the same time strictly controlling the entire information collection, storage, processing and reporting process. Under this guidance, the original information generated by the business department can automatically generate accounting vouchers according to business processing rules while entering the AIS, and subsequent books and reports can be automatically generated by the program. It can be seen that the status of the accounting function has gradually decreased in the process of informatization. The focus of the accountant's work has also begun to turn to control AIS and participate in management decision-making.

With the deepening of accounting informatization, the design style of China's high-end ERP software is gradually in line with international standards, and the teaching materials used in the course of "Accounting Information System" are basically business process oriented, which is consistent with the development trend of financial and business integration. The course content of Accounting Information System under the guidance of business process is organized around various business processes of the enterprise, including financial processing, purchasing and payable, sales and receivable, production and cost, human resources, financial reporting system.

As the core course of the accounting profession, AIS's mission is to deliver a compound talent who is familiar with the accounting standard system, internal control standards and accounting informatization through the organic combination of IT and accounting knowledge. The above three guiding goals are the same, with different emphasis. Information technology orientation focuses on IT, simulated accounting orientation focuses on accounting, and business process orientation is based on ERP system. It is not difficult to find that business process orientation is the current mainstream orientation. However, the ERP system-based experiment has many experimental contents, heavy tasks, and cumbersome operation steps. As a result, students are exhausted in the experiment, neglecting theoretical learning, and unable to consider thinking, analyzing, and solving problems.

The problem-oriented teaching Model refers to students' learning activities that take the problem as the core and actively analyze and solve the problem by questioning and criticizing under the guidance of the teacher, and creatively acquire knowledge and experience. This study applies this Model to the teaching practice of Accounting Information System, hoping to improve students' ability to understand and apply knowledge and form a unique competitive advantage for accounting professionals.

## **II. THE ADVANTAGES OF PROBLEM-ORIENTED TEACHING**

Accounting Information System is a comprehensive and practical course, which is usually set up as an undergraduate major course in accounting, financial management and auditing. The course requires students to correctly understand and evaluate the accounting information system on the basis of mastering the accounting information processing flow and methods in the computer, and lay a good theoretical foundation for continuous improvement and innovation of accounting calculation and management methods. Before learning this course, you need to have basic knowledge in accounting, financial management, computer, database and so on. Because the phenomenon of "emphasizing operation and neglecting theory" is common in the course, students tend to lose ground in the study, they are exhausted in the experiment, they ignore the theoretical study, and they are unable to take into account thinking, analysis and problem solving. The goal is difficult to achieve. In the course of teaching, the effective introduction of problem-oriented teaching methods can play a good role in stimulating learning interest, enhancing students' depth of knowledge and improving analytical skills.

The benefits of the problem-oriented teaching method mainly include the following four points:

First, it is necessary to learn from the past. Teachers' questions can stimulate students to review and think about the knowledge they have learned in a timely manner. Help students make enough knowledge transfer before learning new content. Listening to the answers of other students can repair the forgotten knowledge points. Lay the foundation for understanding the content of the subsequent courses. For example, when explaining the voucher entry process, the constituent elements of the accounting voucher must be reviewed. Therefore, students can recall the bookkeeping voucher style they know and explain the specific requirements of each information element to help students review the knowledge they have learned and to further understand the error correction mechanism of the system in the voucher entry (such as borrowing must have Loans and loans must be equal).

Second, it is necessary to cultivate of pioneering thinking. Repeated question answering and discussion can cultivate students' pioneering thinking and the spirit of digging into problems and seeking knowledge and truth, awe of history and thought, and truly "not only books, but only truth". When arguing with teachers, we should adhere to the attitude of "I love my teacher, I love the truth more" to discuss issues of common concern to everyone. For example, why the starting point of accounting information system processing is the accounting voucher, rather than the original

voucher? With the use of various scanners, character recognition and other equipment, the original voucher will also be stored in the system. Will the starting point of system processing in the future become the original voucher? Through this design question, this question may not get a standard answer in the classroom, but it can inspire students to collect information after class, start discussion after class, cultivate their pioneering thinking, and stimulate their curiosity.

Third, it is necessary to deepen the understanding of the problem. Being able to ask questions and being able to answer questions requires deep thinking about the problem and expressing it in your own language. This is essentially a process of knowledge decomposition and reprocessing. The decomposition and aggregation of ideas may lead to new insights. The collision of ideas may also generate new sparks. Everyone has different perspectives on problem understanding and analysis. Therefore, mutual communication will deepen the depth of the questioner and questioner's understanding of the problem.

Fourth, it is necessary to strengthen the cultivation of systematic ability to master knowledge. Since knowledge exists objectively and disciplines are artificially set classifications, the interdisciplinary characteristics of "Accounting Information System" can be brought into full play by asking relevant knowledge. The problem setting that moves the whole body will make the students cross the barriers brought by the discipline setting, master the knowledge learned more systematically, and exercise the ability to think comprehensively.

### **III. MAIN RESEARCHING ASPECTS**

The main content of this study focuses on the following three aspects:

One is the combination of theoretical teaching and practical teaching to carry out problem design. The focus is on how to set up problems, which can not only cultivate students' professional skills, but also stimulate students' subjective initiative, so that most students can participate actively and have challenges.

The second is the application of problem-oriented teaching methods in teaching practice. This requires integrating the course content with a complete business case. The content of the existing AIS courses is arranged according to their functional modules, and there is a lack of concatenation between knowledge points. Therefore, an integrated case can be used for teaching, and systematic teaching content integration can be carried out in limited class hours.

The third is feedback and evaluation of teaching effects. According to the teaching status of the "Accounting Information System" course, evaluate the

effect of the problem-oriented teaching Model on improving teaching effectiveness.

Both the theoretical teaching and practical teaching of Accounting Information System can adopt the "problem-oriented" teaching Model. Therefore, in the initial teaching design, it should be supplemented with corresponding problem design, these problems are derived from the key control points in the accounting information system. Teachers need to set up questions based on the experiment content in advance. In the specific teaching practice, we should design and guide the teaching practice according to the basic links of the "problem-oriented" teaching Model focusing on grasping the setting of the teaching situation and the reflection of the problem.

Since the problem-oriented teaching method uses the problems that students may encounter in the future as the starting point of learning, this has obvious advantages for stimulating students' consciousness to learn and guiding students to improve their problem-solving skills; Comprehensive courses like Information System are more practical.

### **IV. APPLICATION OF PROBLEM-ORIENTED TEACHING METHOD IN AIS COURSE**

The problem-oriented teaching method is mainly reflected by the introduction of thinking questions before class, the discussion of questions in the classroom, and the arrangement of thinking questions after class.

The thinking questions before the class play three roles. One is to review old knowledge points, the other is to investigate the knowledge base of students, and the third is to stimulate students' interest in learning. For example, in the chapter of the cashier and bank reconciliation system, it is necessary to discuss: why bank reconciliation, when and how to check. The editor of the textbook assumes that the reader knows the knowledge in this respect, but the true situation of the student's knowledge is not the case. It needs to be verified by the instructor through questions before the class. "How does bank reconciliation work in manual Model, and what if something goes wrong?" By thinking about this problem, teachers can guide students to deepen their understanding of the manual processing process in the accounting courses they have previously learned, and After deep learning, understand the difference between it and computer process.

The pre-class thinking question is a process in which the teacher asks predetermined questions, the students answer, and the teacher gives corrections and evaluations to the students' answers. The discussion of questions in the classroom should not be restricted to one form. It can be a teacher's question, a student's answer, or a student's question about what they have

learned, answered by other classmates, and the teacher can supplement and conduct further inquiries. Class discussions can clarify vague concepts and clarify learning ideas. Of course, there may be questions that teachers and students can hardly get a satisfactory answer. Such questions can be used as topics for discussion after class and will be answered in the course time.

The role of after-class thinking questions is to strengthen the memory of the focus and difficulties of this course. After answering the thinking questions after class, students can check their understanding of the content of this course, and it is also a process of systematically combing knowledge from points to faces. For example, at the end of the chapter of the accounting processing system, you can set the "improvement of the accounting processing process" as a post-class thinking question, so that students can still do further data collection after the class, and integrate the learned theory with the actual system. The comparison of operations improves the depth of students' understanding of the problem and enables them to master the theories learned flexibly.

The problem-oriented teaching needs to use the question as an introductory factor, which triggers the common thinking of teachers and students. Therefore, in the teaching, teachers need to carefully set the pre-classroom, classroom and after-class problems, in order to effectively guide students to learn from the past. At the same time, teaching is good, and it also improves teachers' comprehensive ability of thinking and thinking. There are certain scientific rules to follow in setting up the problem, which can be summarized as follows:

First, it is necessary to closely surround the teaching content. As mentioned earlier, there are many knowledge points involved in the course of "Accounting Information System", but not all points need to be asked. Questions that are closely connected with the knowledge taught in the lesson can be set up, but only relevant or relevant. Not sexual, should not waste valuable classroom time.

Second, the difficulty of the problem should be Modelrate. If the question set by the teacher is too simple and boring for the students, it will not stimulate the students' interest in thinking; but if the question is too difficult, it will make the students feel fearful, and finally it will become the teacher's self-talk, and the question cannot be reached. Expected effect. The ideal question should be difficult to Modelrate, and the question is full of controversy will also bring more collision of ideas.

Third, it is necessary to grasp the logic and frequency of questions. Judging from the logical order of asking questions, it is advisable to put the questions

first and then near, first in common and then in special cases, first in depth and then in extension, which conforms to the general law of people's thinking. For dozens of minutes in the class, it is better to narrate and discuss. Teachers need to flexibly grasp the frequency of questions. Asking questions can strengthen the interaction between teachers and students, but the classroom also needs to be dynamic and static, so that students have time to precipitate and digest knowledge. In addition, it is necessary to avoid that questions and answers only occur among a limited number of students, and others are in a state of thinking rest during Q & A.

The problem-oriented teaching method is a breakthrough to the traditional teaching Model characterized by the unidirectional transmission of knowledge information and examination-oriented. The reform of this teaching Model puts forward higher basic quality requirements for teachers. First of all, problem-oriented teaching requires teachers to establish an equal concept and awareness of teachers and students. Comply with the ancient motto "Wen Dao has succession and skill has specialization", "Disciples do not have to be inferior to teachers, and teachers do not have to be good at disciples." Instructed in the original intention of progressing with students and classmates. Secondly, teachers need to have a wealth of basic knowledge accumulation, and be well versed in the connection between various courses and the ins and outs of each knowledge point. Third, teachers must have a keen insight and be able to find problems. Because valuable research results all originate from a creative question. Fourth, have a clearer understanding of students' knowledge base. Only by knowing the basic situation of the students can we design the problems more objectively and organize class discussions. Finally, teachers must have a sense of knowledge renewal that advances with the times.

The limited experimental data in the course Accounting Information System is not enough to satisfy students' curiosity. The discovery of new materials from the currently operating enterprise examples (such as the computer processing of group financial consolidated statements, the realization of financial sharing Models, etc.) can enable the theoretical knowledge of the course to find a more specific foothold in real life, Students' interest in learning will be stronger.

## **V. TEACHING EVALUATION QUESTIONNAIRE DESIGN AND RESULTS ANALYSIS**

In this study, the online questionnaire was adopted during the computer process, and the self-assessment survey (pre- and post-test) and learning satisfaction survey made by students were set as the measurement indicators of learning effectiveness; the curriculum and

motivation questionnaire were set as the measurement indicators of learning motivation. Among them, the survey of motivation amount refers to the Motivated Strategies for Learning Questionnaire (MSLQ) of the University of Michigan, and the specific evaluation results are statistically analyzed. The setting of specific topics is shown in "Table I".

**TABLE I. QUESTIONNAIRE ON LEARNING MOTIVATION AND LEARNING SATISFACTION**

<b>Learning Motivation</b>	<ol style="list-style-type: none"> <li>1. There is something in the question that I like and is challenging to me, I can learn something new</li> <li>2. I like the content that arouses my curiosity, even if the content is difficult to learn</li> <li>3. What is most satisfying to me is to try to understand the content of the course thoroughly</li> <li>4. If the method is suitable, I should be able to learn this part of the content</li> <li>5. If I do not understand the content of the course, it is because I did not spend time</li> <li>6. Because the course is very simple, so I learned</li> <li>7. I do n't know what to do, so I did n't learn anything</li> <li>8. I am confident that I can learn the most basic knowledge</li> <li>9. I am confident that I can learn the most difficult things in the course</li> <li>10. I am confident to perform well in the test</li> </ol>
<b>Learning Satisfaction</b>	<ol style="list-style-type: none"> <li>1. The problem has practical application</li> <li>2. I can fully understand the issues raised</li> <li>3. After finishing homework, my ability has improved</li> <li>4. I think it's difficult to set the topic appropriately</li> <li>5. I think the teacher's story is very clear and vivid</li> <li>6. I think the courses are arranged in the right order</li> <li>7. I think the knowledge learned can be easily applied</li> <li>8. I can easily apply the learning content to my future work</li> <li>9. I can see the focus of the explanation in the theory in the hands-on practice</li> <li>10. The goals and planning to be completed by the task are in line with my ability</li> </ol>

For the analysis of teaching evaluation, the feedback results of the recovered students were summarized, and Origin8 was used as a data analysis tool to import the data for analysis.

First, the Cronbachs'α test was conducted on the items in the questionnaire. The results showed that the error in sampling the content of the questionnaire met a high degree of credibility. Then, the Pearson correlation coefficient is used to analyze the strength of the correlation between the two variables, and the learning motivation is divided into three aspects: intrinsic goals, learning control beliefs, and self-efficiency. Relevance

of satisfaction. The results show that when the significance level is 1%, intrinsic goal orientation, learning control beliefs, self-efficiency orientation and learning satisfaction are positively correlated. Therefore, in the process of problem-oriented curriculum design, students' individual intrinsic goal orientation, The stronger the learning control beliefs and self-efficacy orientation, the higher the satisfaction of their learning effectiveness. In order to understand whether the difference between the averages of the pre- and post-test observations is significant, a T-test is used to compare the pre- and post-test data of the sample. The results show that when the significance level is 5%, the P value is significant, the scores of the front and back tests have a significant difference, and the posttest is greater than the pretest. Therefore, the results of the T test show that students generally believe that problem-introduced curriculum design has better learning effectiveness.

**VI. CONCLUSION**

The problem-oriented teaching method still has some controversies in the teaching field, but we have experienced the teaching practice and realized that the problem-oriented curriculum design teaching method can not only stimulate students' learning motivation, but also enable students to be related to reality in the learning process. The company's work environment produces good learning results, and then learn to apply. In the future, the topics that need to be studied in depth are mainly how to discover new materials in the currently operating enterprise examples, connect theory with practice, and stimulate students' curiosity. It can be said that the effective use of problem-oriented teaching methods requires teachers to have a wealth of knowledge accumulation and keen insight on the one hand, but also requires the active cooperation of students.

The application of problem-oriented teaching methods in the teaching of the Accounting Information System course has a good effect of stimulating learning interest, enhancing students' depth of knowledge and enhancing analytical skills. The setting of the question should focus on the core content of the course; the difficulty of the question should be Moderate; the question should pay attention to the logical order and the frequency is appropriate. The application of problem-oriented teaching methods requires teachers to have a wealth of knowledge accumulation and keen insight on the one hand, and students' active cooperation on the other hand. Investigation and analysis show that the introduction of problem-oriented teaching methods into the course of Accounting Information System is an effective method to enhance students' motivation and effectiveness.

## **References**

- [1] Guizhou Lv, and Guanhui Liang. "Application and Practice of Problem-oriented Teaching Model." International Conference on Industrial Technology & Management Science, 2015.
- [2] Sui Jie, and Dong Linqian. "Application and Optimization of Experimental Teaching of Accounting — A Case Study of ERP Sand Table Simulation." International Conference on Information Technology in Medicine & Education IEEE, 2016.
- [3] Wang Juan. "Optimization of experimental teaching in accounting information system." International Conference on Computer Science & Education IEEE, 2013.
- [4] Gnaur, Dorina , and J. Clausen . "Teaching Smart with Podcasts." *The international journal of engineering education* 31.2(2015): 486-494.
- [5] Brown, M. I., et al. "Measuring learning resource use." *Computers & Education* 27.2(1996): 0-113.
- [6] Goos, Maarten , and A. Salomons . "Measuring teaching quality in higher education: assessing selection bias in course evaluations." *Research in Higher Education* 58.4 (2017): 341-364.
- [7] Niu, Dongjie, D. Jiang, and F. Li. "Higher education for sustainable development in China." *International journal of sustainability in higher education* 11.2(2010): 153-162.