

Application of PBL Teaching Method in Management Information System Course

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ABSTRACT. *With the development of social information technology, information literacy has become an indispensable part of civic literacy in information society. Information technology education has gone beyond the stage of computer technology training, and developed into information literacy education to meet the needs of talents in the information society. Due to the lack of in-depth understanding of the basic concepts of information technology courses, those ideas of computer education still exist in information technology teaching, and there is no substantive change in the objectives, contents and methods. To change this situation, we should try to explore a new teaching mode of information technology course, and problem-based learning (PBL) is one of them. This paper points out the problems existing in the management information system course in teaching of economics and management majors, introduces the connotation and learning principle of PBL teaching method, puts forward the implementation path of PBL teaching method in the management information system course in economics and management majors, and makes a relatively detailed PBL teaching designment in the chapter of system analysis. Finally, the paper summarizes and points out the importance of process assessment.*

KEYWORDS: *PBL Teaching Method, Economic and Management Major, Management Information System*

1. Introduction

The development level of higher education is an important symbol of a country's development level and potential. General secretary Xi Jinping pointed out that "our need for higher education is more urgent than ever, and the thirst for scientific knowledge and outstanding talents is stronger than ever before." Since February 2017, the Ministry of education has actively promoted the construction of new engineering, forming "Fudan consensus", "Tianda action" and "Beijing Guide" successively, in order to actively respond to the new round of scientific and technological revolution and industrial change, achieve the goal of "learning to do,

thinking to do, thinking to create, and creating to be happy", and support a series of national strategies such as "made in China 2025" " In response to the major national strategy, our university is facing the development demand of new economy represented by new technology, new business form, new mode and new industry, innovating excellent talent training system and helping the transcendental development of information industry. The application background of new engineering course undoubtedly brings a huge challenge to teachers. It is necessary to thoroughly shake the traditional mode of school leaving, change the teaching mode from teachers' teaching to students' practical operation, and design the teaching content carefully.

With the popularization of enterprise informatization, the society needs a large number of compound informatization management talents with solid professional foundation and good command of information technology. For the major of economic management, many universities in China have incorporated the course of management information system into their training programs. This course is a comprehensive course with strong theoretical and practical features. Through course learning, students of economic management can improve their ability to solve practical management problems by using modern information technology. With the continuous expansion of the application field of management information system, the teaching content and teaching methods of this course are required to be updated and higher.

PBL is a popular teaching method all over the world. First of all, it creates a relaxed and active learning atmosphere for students, enabling them to speak freely and fully express their views independently and actively, and at the same time, it can also easily obtain information from other students and teachers; second, it can expose as many problems related to the curriculum as possible on the spot, deepen the understanding of the correct theory in the discussion, and In order to constantly find new problems, answer new questions, shorten the learning process, and make a more profound impression; thirdly, it is not only beneficial to theoretical learning, but also can exercise students' abilities in many aspects, such as the ability of literature retrieval and data access, the ability of summary and comprehensive understanding, the ability of logical reasoning and oral expression, the ability of leading learning and lifelong learning, etc. It will lay a good foundation for life and work in the future.

Using PBL teaching method to teach the course of management information system will play an important role in guiding students' learning and stimulating their interest in learning.

2. Problems in Teaching

In recent years, although the teaching construction of management information system course of economics and management specialty has achieved various exploratory successes, there are still some problems.

2.1 Copy the Teaching Content of Management Information System Course in Science and Engineering Major

Science and engineering students have a good computer foundation, with precurricular preparation. Therefore, the introduction of knowledge related to information system in classroom teaching is easy to understand [1, 2]. However, for economics and management students, the course system lacks the forerunning of computer-related courses, so the course content cannot adapt to the professional background and the change will certainly affect the teaching effect.

2.2 Lack of Systematic Cases Related to Management Industry

Many professional of administration management information system course teaching theoretical knowledge teaching, lack of complete case throughout the whole process of management information system development, and students of administration enterprise information involved in the case of actual work are new, make students difficult to perceptual cognition and understanding of management information system theory knowledge, often feel boring and abstract, difficult to arouse the enthusiasm of learning[3-5].

2.3 Teaching method is Relatively Single

Current management information system course teaching, the traditional teaching method is still in the dominant position, the problem of combining case heuristic teachers guide students, students take the initiative to less opportunity to think, is still used to the rote learning of theoretical knowledge of management information system, and did not really understand the companies use the management information system ideas and methods to solve practical problems [6]. Therefore, the traditional teaching method, to a certain extent, inhibits the initiative of students to learn this course, resulting in the lack of students' innovative ability to analyze problems and solve problems in the face of real management information system problems.

3. PBL Teaching Method

3.1 PBL Meaning

Problem-based learning (PBL) is a student-centered education method based on the real world. Different from the traditional subject-based teaching method, PBL emphasizes students' active learning rather than teachers' lecturing in traditional teaching. PBL links learning with larger tasks or problems, enabling learners to get involved in the problem [7, 8]. It designs realistic tasks, emphasizes the setting of learning into complex and meaningful problem scenarios, and solves problems through independent exploration and cooperation of learners, so as to learn the

scientific knowledge hidden behind the problems and form problem-solving skills and autonomous learning ability.

Different from the traditional subject-based teaching method, PBL teaching method is problem-based, student-centered, teacher-oriented heuristic education, with the goal of cultivating students' ability as the teaching goal, emphasizing students' active learning rather than teachers' teaching in traditional teaching; PBL links learning with larger tasks or problems, so that learners can vote It designs authentic tasks, emphasizes to set learning into complex and meaningful problem situations, and solves problems through learners' independent exploration and cooperation, so as to learn the scientific knowledge hidden behind the problems and form the problem-solving skills and the ability of independent learning. There is a big difference between PBL teaching method and case analysis in that PBL is the starting point of problem-based learning. Case analysis is that the teacher explains the textbook first, and then makes case analysis on the premise that the students master certain knowledge.

PBL has five characteristics:

First, problem driven. Second, students carry out inquiry learning. Third, teachers and students are looking for ways to solve problems quickly. Fourth, students improve their ability in the process of participation. Fifth, students share their learning achievements openly.

P has two meanings: the first one is to design comprehensive problems based on the in-depth analysis of the course content, the requirements of the syllabus, the suggestions of different majors, and the actual projects in the off campus practice base. Each of them should first throw out problems, so that students can gradually solve problems in the process of learning, establish recognition of the course knowledge, and be willing to participate in the course In Cheng's study, reference, practical operation, group discussion, report and display are integrated into a series of teaching processes, so as to achieve the goal of "doing in learning, thinking in doing, thinking in creating and creating in creating".

The second level refers to that students can ask questions to textbooks, themselves, classmates and teachers in the process of learning Ask questions to life, ask questions in autonomous learning, cooperative learning, and practice. Through the communication among students, students and teachers, and the communication between groups, we can find new ways to solve problems, deduce new problems, and cultivate students' ability to put forward problems, analyze problems, and solve problems.

3.2 Learning Principles of PBL

PBL teaching method is an interdisciplinary learning method, which can promote students to think constantly. In order to solve problems, students need to consult extra-curricular materials, summarize and sort out the knowledge and skills they have learned, which is conducive to the cultivation of students' independent learning

spirit. It has changed the four-stage teaching method of "I tell you to listen, I do you to watch", "Preview - listen to class - Review - Test", which makes the rigid and isolated knowledge film into the whole knowledge. The teaching concept of "classroom is the soul, students are the main body, and teachers are the key" is highlighted. In PBL teaching process, teachers gradually "retire", only playing the role of pointing, scaffolding and coach at the critical moment. Teachers are no longer the only knowledge base, but the facilitators, subject experts and consultants of knowledge construction. PBL learning schematic diagram is shown in Figure 1.

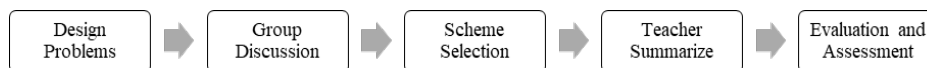


Figure 1 PBL Learning Principle

3.2.1 Design Problems

PBL regards questions as the starting point of learning. What kind of questions should PBL adopt? Specifically, the design of the problem should reflect the following characteristics:

(1) Questions must be able to lead to conceptual principles related to the field of study. When designing problems, we should first determine the basic concepts and principles that students need to acquire, and then design the problems to be solved.

(2) The problems should be ill structured, open ended and real, such as real cases, real management problems, etc. The problem should be complex enough to contain many interrelated parts, each of which is very important. The problem should be a real world problem, which can resonate in the learners' experience world. It has the following advantages: the situation of learning knowledge is similar to the situation of applying knowledge in the future, which can promote the extraction of knowledge; in the process of solving problems, mastering concepts, principles and strategies can promote the transfer of learning in new problems; in addition, previous learning examples can be applied to similar problems. Solving.

(3) This kind of problem should be able to stimulate students' motivation and encourage them to explore and study.

(4) A good problem can naturally provide feedback to students as the problem is solved, so that they can evaluate the effectiveness of knowledge, reasoning and learning strategies, and promote their prediction and judgment. In addition, from the perspective of the whole PBL course, each concept should be involved in several issues for many times, so as to enable learners to build more flexible knowledge and avoid the possible omission of important concepts. In addition, the selection of questions should take into account the teaching objectives, the knowledge, and skill level and motivation attitude of learners.

There are two noticeable problems when presenting problems:

(1) Involve the students in the problem, and regard the problem as their own

rather than others' own.

(2) Ensure that the presented conditions (data) do not expose the key factors of the problem. Do not use the question that the given condition exactly corresponds to the required condition. Of course, what kind of questions should be designed? There are also controversies among researchers at this point, such as whether it is necessary to use situational real questions. "Problem" is of key significance in PBL, but at present, researchers and practitioners use a variety of problems, so it is very necessary to do in-depth and systematic taxonomic research on the problems in PBL.

According to the students' professional background and the actual situation, the teacher designs the question which suits the students' knowledge and ability level. When designing problems, teachers should avoid the disadvantages of too long time consumption and predict their solutions[9]. At the same time, problems should have a certain depth and breadth and encourage students to look up materials purposefully.

3.2.2 Group Discussion

Let the students form a study group freely, divide the work and cooperate with each other, spend some time and energy to consult materials, discuss and agree with each other through group discussion, and submit solutions to problems.

Team members gather again to communicate what they have learned and generate new problem-solving hypotheses based on what they have learned. When sharing their learning achievements, it is very important for students to evaluate their own information and other people's information, see how the information is obtained, whether the source is reliable, etc., which is an important way to promote independent learning.

3.2.3 Scheme Selection

Each group uses various forms to report their own conclusions and the process of drawing conclusions, such as mathematical analysis, charts, oral reports, dramatic performances, etc. What PBL emphasizes is not only to let students solve problems, but also to let them understand the relationship and mechanism behind the problems.

Through presentation or defense, different schemes obtained through group discussion will be discussed one by one in class, and representative schemes will be selected for learning scenarios.

3.2.4 Teacher Summarize

What should teachers do in PBL?

(1)Comprehensively consider the background of students' knowledge and skills,

set project objectives and give appropriate driving problems;

(2) Give proper guidance to students in terms of research methods, interview skills, data analysis, knowledge solution, thematic guidance, etc.

(3) Provide assistance in team management, time management, expert introduction, revision suggestions, etc. in the process of scheme making;

(4) Provide opportunities for students to show and create, give feedback and provide evaluation.

The teacher carries on the classroom analysis summary through the question feedback, must focus on the mistake and the train of thought summary, teaches the student to solve the question the way and the method, causes the student to further grasp the question involved theory knowledge, deepens the student to the related knowledge understanding.

3.2.5 Evaluation and Assessment

Teachers can make a comprehensive evaluation on students according to the number of times they discuss and speak, the quality of their speeches, the information search, team organization and cooperation, and classroom practice, so as to give them fair results at ordinary times[10].

In order to refine what they have learned, students should consciously reflect on the process of problem solving. We should consider the similarities and differences between this problem and the previous problems, which can help them to summarize and understand the application situation of new knowledge. Moreover, when students evaluate their own and others' performance, they also reflect on self-learning and cooperative problem solving activities, which is very meaningful for the development of advanced thinking skills.

4. Implementation Path of Management Information System Courses in Economics and Management Majors

4.1 Problem Setting

Taking the chapter of information system analysis as an example, when designing the problem, the teacher provided the detailed background of the financial department of an enterprise and divided the problem into four parts: (1) organizational structure and business process analysis; (2) data process analysis; (3) establishment of the logical model of the new system; (4) preparation of the system analysis report. In the process of grouping, after the completion of the four sub-tasks, integration was carried out and the system analysis results were obtained.

4.2 Students Independently Make Up Study Groups and Carry Out Cooperative Learning

The teacher shall limit the number of members in the group, and the classmates shall form the group freely according to their individual wishes, and make a clear division of labor. Besides, the individual contribution rate shall be determined according to the individual work and submitted to the teacher.

4.3 Communication and Report between Groups

In cooperative learning in group, after the group sent a classmate in class using the corresponding display forms for the group discussion learning outcomes to display report, an analysis of the specific problem key point, and will be encountered in the group or unable to answer questions listed and teachers to share and communicate with the class.

4.4 Evaluation and Assessment

The role of different teachers in PBL is totally different from that in traditional teaching. In PBL, teachers are not only the imparters of knowledge, but also the promoters of students' development. Therefore, teachers are no longer engineers who impart knowledge, but "midwives" as Socrates said. In PBL, teachers act as promoters, which does not mean neglecting the role of teachers. Whether teachers can use the promoting teaching skills is of decisive significance to the effect of PBL. The teacher's role mainly includes: (1) asking questions at the metacognitive level in the process of group cooperative learning, putting forward non guiding but enlightening questions to promote group discussion; (2) stimulating students' thinking, helping students to contact past related knowledge and experience to solve problems; (3) assisting students to discuss, clarify and understand their learning issues; (4) assisting students in search and operation Use learning materials, etc.; (5) monitor group activities to ensure that all students are involved in the activities, encourage students to externalize their thinking process, and encourage them to comment on each other, demonstrate how to self-evaluate their reasoning and understanding skills

The teachers take the group as the unit to carry on the appraisal and the appraisal, and counts into the peacetime result. According to the discussion results of each group of questions, the teachers will grade the students in groups, and identify the students' individual scores in combination with the individual contribution rate.

4.5 Summary and Reflection

The application of PBL teaching method strengthens teachers' guidance to students and collaboration and communication between students, which is conducive to teachers' timely discovery of problems in teaching and learning. In addition,

through division of labor and cooperation, the students' teamwork and logical thinking ability were trained, and their initiative and innovative consciousness to solve problems were also improved.

PBL method focuses on students' performance in the learning process, so it is suggested that teachers should not only take the final exam as the only basis to evaluate students' learning level, but should increase the proportion of students' performance in the teaching assessment, pay attention to students' performance in the normal learning process, and then flip the teaching model.

5.Teaching Knowledge Unit Design

Select the representative of Information Major - information management major, and briefly explain the specific design ideas: the characteristics of the students of information management major are technology oriented, business oriented, and they are easy to accept the development methods of information system, but they are not familiar with the business logic relationship involved in the system. Although they can develop systems with simple functions, they will be very familiar with systems with complex business logic Laborious. In practice, we should take the understanding of complex business logic as the core, according to the development process of management information system, after many discussions with the members of the research group, the design is as follows:

First, according to the overview of management information system, the problem can be designed to let students determine the management information system to be studied or track the new progress of management information system by combining the learned knowledge or knowledge. Students are required to collect and read relevant materials, and let them download the overview of management information system by using professional literature retrieval database, such as CNKI, Wanfang Data, etc. Through reading the summary, we can understand the development frontier of management information system, deepen the understanding of information technology, and improve the ability of literature retrieval and summary of students.

Secondly, corresponding to the information technology involved in the management information system, the problem can be designed as: the application of information technology in a certain field. Teachers are mainly responsible for guidance, taking students as the main body of discussion, combining with the characteristics of information management students' knowledge field, in-depth analysis of the application of information technology, such as the application of big data technology, the application of cloud computing, etc., summarize the current situation of better development, insufficient analysis, and further explore the application of information technology in the future.

Third, corresponding to the system planning chapter, it can be designed to group students. Generally, each group has 3-5 people. Each group chooses a topic of its own, which requires specific topics. For example, the topic can be selected from the library management system, personnel management system, commodity sales

system, etc. each group is required to understand the business management process of the topic in detail, investigate and analyze the informatization needs of each major business link of management. In view of the characteristics and requirements of computer transaction management, the establishment of enterprise model and Research Report in the system planning stage are completed, and a certain time is arranged for group results display and report.

The main means of obtaining data are literature search, questionnaire survey, field survey and interview. The key to the implementation is to fully mobilize the enthusiasm of the students, select the team leader through the students' grouping, and the team leader should make clear the division of labor of each team member, cultivate the organizational ability and harmonious communication ability of the team leader, and cultivate the team cooperation ability of the team members. The division of labor can be as follows: team member A is responsible for consulting materials, team member B is responsible for writing words, team member C is responsible for drawing charts, team member D is responsible for PPT production, team leader is responsible for group report, etc.

While listening to the report of the group, the teacher shall record the completion of each group, and as a part of the usual assessment, the teacher shall make clear the rewards and punishments, give bonus points to the group with substantial content and full workload, and deduct points to the group with insufficient preparation for work. At the same time, we should actively guide students to establish a rigorous research attitude and good professional norms.

Fourth, corresponding to the system development chapter, the problem can be designed as follows: the inventory management process is mainly divided into five parts: purchase, acceptance, storage, delivery and inventory. Let students through the search of information, or field research, in-depth understanding of each part of the detailed process, and understanding and expression [11].

Reason: the whole process can be sorted out after careful investigation. However, the process is relatively complex, and the analysis and design of the inventory management information system is difficult, which meets the training requirements of the technology and business of the students majoring in information management. Strengthening the daily management of goods in stock can effectively reduce the risk of inventory management and ensure the consistency between the account and the reality of inventory information.

The following two aspects are emphasized: first, inventory purchase. First of all, we should do a good job in inventory planning and make a reasonable procurement plan to avoid overstocking. Secondly, strictly enforce the procurement discipline, establish the anti-fraud mechanism of the procurement system, implement the system of irregular forced rotation or leave for the procurement personnel in key positions, and strengthen the supervision and inspection of the inventory procurement personnel. Thirdly, establish inventory purchase requisition, inquiry and approval mechanism. In addition, a bidding management system and a batch order system for large purchase should be established to improve the bargaining power of the inventory purchase link, so as to obtain a lower purchase price and

reduce the purchase cost. Second, acceptance and warehousing. In order to ensure that the quantity and quality of the inventory meet the quality requirements of the company's products, all the purchased goods must go through the acceptance and quality inspection process. The nonstandard acceptance procedures and unclear acceptance standards may lead to the deduction of inventory quantity, the replacement of inferior goods with inferior ones, and the discrepancy between the actual account and the actual account. In the process of inventory acceptance and warehousing, efforts should be made to do the following work: the responsibilities of the financial department and the purchasing department should be separated; the acceptance of purchased inventory should focus on the consistency of the original documents such as contracts and invoices with the quantity, quality and specifications of the inventory.

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