Research on Teaching Reform of Computer Application Foundation Course Based on PBL and "Training of Job Demand Mode"

Juan WAN

Intelligent Science & Information Engineering College, Xi’an Peihua University, Xi’an, China
312610191@qq.com

Keywords: PBL; Job demand; Computer application foundation; Teaching reform.

Abstract. PBL is a complete approach to designing learning situations; "Training of job demand mode" is the specific implementation of the training requirements for applied talents. This paper aims to cultivate the application of "professional position talents" and explore the objectives, contents, methods and means of carrying out classroom teaching in the modern educational technology environment.

Status and Background Analysis

"Computer Application Foundation" is a public foundation course for all majors; it is an introductory course for students to learn computer system knowledge; it is also a basic skill that students must master from school to social work. At present, there are several disadvantages in the form of education and teaching in this course.

(1) Teaching content is not in sync with market demand. Most colleges and universities have been teaching the "Computer Application Foundation" course at the stage of "theory knowledge can be understood and the machine exercises can be completed". As everyone knows, the "Computer Application Foundation" course needs to be applied to specific professional positions. The general case used as a practice in the teacher's classroom may not be able to meet the needs of real jobs, so that students need to continue or re-learn to adapt after entering the job.

(2) The teaching goal reflects the test objectives, not the ability goals, so that students can only solve the problems that the teacher has said, and will not give rise to the opposite, and will not self-exploration to solve new problems. In the face of the case that the teacher has said, it can be solved according to the ideas given by the teacher; in the face of new work content and challenges, it shows a state of being overwhelmed and unable to start. This shows that we are only "giving people a fish" and there is no "giving people to fish".

(3) Teaching methods and cognitive rules are not suitable, leading students to enter the classroom ignorantly, go out of the classroom in confusion, do not know what they are doing now, and do not know what they can do when they are on the job. "Computer Application Foundation" has always adopted the method of using knowledge points as a teaching unit. Students need to learn more than a dozen hours, and after learning the whole software, they will know what the software can do. Therefore, in the process of learning, students have no goals, and after learning for a long time and cannot see the results of learning, it is easy to lose interest in learning.

Therefore, the use of scientific teaching methods, the integration of computer classroom teaching content and the professional characteristics of students, has a very practical significance.

Method and Goal

PBL Teaching Method

PBL is a complete set of design learning contexts (Problem-Based Learning, referred to as PBL). PBL has several features:

(1) Start with a problem that needs to be solved. This problem is called a driving problem.
(2) Students explore the driving issues in a real situation, and students learn and apply subject ideas in the process of inquiry.
(3) Teachers, students, and team members participate in collaborative activities to find solutions to problems.

(4) Students must create a viable product that solves the problem. These products are the result of classroom learning and can be shared publicly.

PBL is a student-centered approach to education based on the real world. Unlike traditional, subject-based pedagogy, PBL emphasizes active student learning rather than teacher-led teaching in traditional teaching; PBL links learning to tasks or issues, allowing learners to engage in the question; it designs the task of authenticity, emphasizes the setting of learning into complex and meaningful problem scenarios, solves the problem through the learner's independent inquiry and cooperation, and thus learns the scientific knowledge hidden behind the problem and forms skills of problem-solution and self-learning.

PBL is the application of constructivism in teaching. It emphasizes the integration of problems and abilities, the transformation of knowledge and experience, the gradual improvement of the level of foundation and ability, and the continuous extension of the recent development areas. Students can be placed in more prominent and important positions, highlighting their main body status, in order to reserve more space for students to develop and enhance, and achieve the coordinated development of students' comprehensive ability. Encourage students to work together and practice together to solve various problems, thus continuously enhancing students' learning ability. Under the PBL teaching mode, we insist on using problems to drive student learning, introduce diversified teaching organization forms, strengthen cooperation and communication among students, and fully mobilize their enthusiasm for learning and practice.

Training Objectives with “Training of Job Demand Mode”

The “training of job demand mode” is a concrete implementation of the training requirements for applied talents. Applied talents mainly apply mature technology and theory to the actual production and life of skilled talents. The society has a wide range of needs for such talents. In the process of social industrialization and even informationization, society has such talents. Demand has a large proportion, and it should be a talent training model that must be emphasized in popular higher education. It is also this huge talent demand that provides a broad space for the development of higher vocational and technical colleges. This kind of talent also needs to go through a complicated training process, which can also reflect the level of running a school.

Nowadays, with the continuous improvement of China's productivity, modern enterprises have higher demand for high-level application talents. In order to meet this requirement, applied universities must start from the perspectives of teaching concepts, teaching content and teaching methods to reform the curriculum. Based on this, higher vocational colleges need to fully consider the requirements of their jobs, strengthen their cooperation with enterprises, create more opportunities for students to participate in practical activities, and closely observe the dynamic performance of students in the course of job internship. In order to improve learning efficiency, after a period of teaching practice, combined with the needs of the post to carry out the reform of the course content, the quality of learning of higher vocational students can be more effectively improved, so that they can better apply the knowledge learned in the school to the job. Seamlessly switch learning and work, and strengthen students' knowledge and skills in a targeted manner to lay a solid foundation for their smooth employment in the future.

Therefore, we will organically combine PBL and “training of job demand mode”, and adopt “training of job demand mode” as the leading idea of curriculum development design, and use PBL as the teaching form for the specific implementation of course content.

Method of Implementation

With the goal of cultivating applied "professional positions", we will explore the objectives, contents, methods and means of carrying out classroom teaching in the context of modern educational technology. Including the following aspects:

(1) Highlight real job tasks. In daily classroom teaching, students are placed in the real work
tasks of the workplace, so that students have the feelings and conscious of professional people in the process of learning, and cultivate students' professional position ability.

(2) Pursue the cultivation of professionalism. In the teaching process of computer application, it is not only the literacy of computer knowledge, but also the ability of students to use ISAS (Information Retrieval and Information Analysis). The cultivation of this ability is a specific requirement for students' practical ability, analytical ability, and innovative ability, and is also an essential professional quality for professional people.

(3) The use of scientific teaching methods. In the teaching process, combined with PBL and task-driven teaching methods, establish the ideas of asking questions, analyzing problems, and solving problems, so that students can acquire knowledge while completing real work tasks, and exercise them to have the ability to make inferences and self-exploration learning.

Therefore, we first carefully study the requirements of various industries for the basis of computer application, select and write teaching cases and practical projects suitable for different professional fields according to different job requirements. The course design is based on the principle of combining professional and service majors, setting learning situations according to job requirements, and cultivating students' abilities. The course no longer uses a single knowledge point as the explanation unit, but transforms the typical work process into a learning scenario, and reorganizes the knowledge points into the project module content, so that students can be taught in each class under the guidance of real job tasks. Knowing what you want to do before class, you can see what you have done in class, what kind of results you have, and give students a learning environment that is true, true, and practical. Students master the basic operations of computer technology through real learning and real work.

When the class is implemented, our teaching process is:
(1) Use case results to lead to task requirements;
(2) Teachers and students discuss solutions and key technical points together;
(3) Determine the program, students complete the project task independently
(4) Teacher comments, explaining the key and difficult;
(5) Student modify, supplement to complete their work;
(6) Student feedback, submitting homework.

In order to achieve the purpose of “cultivating talents” in the “post demand mode”, we will design project content that meets the needs of the profession according to different professional contents, and a professional set of project tasks. Its practicability lies in the work process-oriented; according to the needs of the post, set the learning situation; service professional, training ability.

We can see from the teaching process, the role of teachers in the classroom by the "dominant" to "counseling".

Conclusion
In summary, with the goal of “Training of job demand mode”, PBL teaching is applied to enable students to better master the basic computer application ability and improve students' learning efficiency and enthusiasm in order to better serve students' employment and deliver more high-quality and highly skilled personnel to our society.

Acknowledgement
This research was financially supported by the 2018 school-level teaching reform project PHY1816.

References

[2] Xia Wei, Xu Shenglin, Reform and Practice of "Computer Application Foundation" Course Based on College Specialty Group. Examination weekly. 2017(87)


[5] Li Fengpan, Cai Zhi, Discussion on the basic teaching mode of computer application for higher vocational education oriented to market demand [J]. Curriculum education research. 2015(21)
