Research on Computer Courses Teaching Based on PBL

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ABSTRACT

In order to overcome some shortcomings in the teaching of "Hospital Information Equipment Assembly and System Maintenance" and to improve teaching quality, this paper introduces PBL teaching mode into the teaching process of this course. Practice has proved that this teaching model can better achieve teaching purpose of the course and achieve good teaching effect which has great practical significance for improving students' practical ability.

INTRODUCTION

"Hospital information equipment assembly and system maintenance" is a highly practical course focusing on the close combination of theory and practice and the cultivation of practical ability of students especially. The teaching content involves Computer Culture Foundation, Principles of Computer Organization, Electronic Technology, Principles of Operating System and other courses. The teaching content involves a wide range of topics and scalability of content is strong. The course is mainly taken by lecture-based learning (LBL) and the process is more boring. The teacher occupies the absolute dominant position in the teaching, the students' task is to receive and remember information. Students may be bored because of too much theoretical explanation. Without fully mobilizing students' enthusiasm, teaching activities cannot be effectively carried out because students lose their interest in learning.

At the same time, because teachers is the center of teaching in the LBL mode. Teachers make more presentations and students only make the operations of imitation. As time passed, students often form dependence psychology and the difficult problems in learning process will not go to the autonomous exploration and the questions accumulate over time.

Therefore, in order to improve the teaching effect and arouse the students' interest, it is necessary to carry on the new reform and exploration of the teaching methods. In teaching process, PBL mode takes students as the main body and teachers as the guide in teaching process, and it is one of the most hopeful teaching models to cultivate students' independence, creative ability and ability to use knowledge to solve problems effectively. Therefore, in order to change the students' passive state caused by LBL teaching mode, it is necessary to introduce PBL teaching mode to arouse creativity, sense of responsibility and team consciousness of students.
PBL TEACHING MODE

Problem-based learning mode is PBL method for short, which is originated from the medical education in the 1950s, which has been implemented for several years abroad and has been used by many universities abroad and has achieved good results. In China, the discussion of PBL teaching mode is still in the groping stage. There are different views on how to implement, the scope of implement and the standard of evaluation. [1-3] In recent years, the practice of PBL teaching mode has been applied in the fields of medicine, science and engineering, and has achieved good teaching effect.

Different from the LBL teaching mode, PBL teaching mode is to make an atmosphere of autonomous learning for students. PBL teaching mode is a kind of mode which takes the students as the main body of teaching, while LBL mode takes the teachers as the main body. PBL mode linking learning process with tasks or problems, integrates study of student into the process that the students employ the methods of independent exploration and cooperation to solve the problem. Thus, teachers can train ability of solving problems and autonomous learning for students, mobilize students learning initiative and enthusiasm with PBL mode.

APPLICATION OF PBL MODE

Taking the course of "assembling and system maintenance of hospital information equipment" as an example, this paper briefly explains the practical application of PBL teaching mode.

Teachers should consider students' differences in academic level, aptitude, personality traits and so on. Students should be grouped and each group of 6~8 people is appropriate. For teaching content involving a wide range of theoretical issues teachers can extract the relevant knowledge from the original chapters to organize knowledge modules according to the teaching emphases to form topics. Such as computer disassembly and assembly, hard disk partition and format, operating system installation and backup, configuration of network environment, daily use and maintenance of computers and a series of topics.

The correct principle that should be followed in teaching process is that knowledge should not be simply instilled by teachers into students, but should be obtained by students' own active exploration. [4] PBL problem is the focus of the whole teaching process, the good questions can arouse the students' interest in learning and learning initiative in learning and learning initiative, and the teachers' design of questions directly affects the learning effect of PBL. Therefore, designing a reasonable and effective problem scenario is an important prerequisite for implementing this teaching mode.

The difficulty of the selected questions by teachers should not be too simple or too hard. It is best to require the knowledge that was or was being learned. The purpose of teachers' design of these scenarios is to allow students to flexibly apply what they have learned. We should take the problem as the center, use the problem as the driving force to guide the students to acquire and apply the new knowledge autonomously. When teachers design these situational problems, teacher should put some problems with characteristic of open, without unified answer, having some challenging theoretical knowledge and difficult to solve in front of students. The students are asked...
to study the problems deeply and learn the knowledge with questions. Thus, teachers can enhance the enthusiasm of students and let students find answers in the process of solving problems.

Before the special topics are taught, teachers should form every task with key and difficult points of knowledge according to the requirements of the syllabus. The tasks that falls in a sort of optimal-challenge zone and should be closely related to the actual life. Teachers should require the members of the group to actively find the relevant information according to the task requirements, study independently. Students should be asked to learn actively, find and solve problems with the mode of group cooperation. During this period students should be required to master the ability to use different ways to collect information. Teachers should play a very good guiding role to let students develop ability of self-help learning and independent thinking. In the process of teaching teachers guide students to brainstorm fully and relate relevant knowledge contents involved in situational tasks. Students are also asked to explore and try to solve the problems independently. Teachers adjust the problem or enlighten and tutor the students according to the needs of students timely. Teachers should guide students to rely on group cooperative learning model to actively explore and solve difficult problems in order to achieve the mastery and strengthening of knowledge. In the whole process of teaching, teachers should not listen to students and the students should not learn by oneself completely but do self-learning under the guidance of the teachers. It is mode of inquiry learning to enable students to try to solve one after another new question.

Via every specific contextual task, the students can solve the complex, actual or authentic problems jointly with mode of autonomic learning and group cooperation so as to learn the scientific knowledge behind the problems. The students' ability of problem-solving, cooperation and independent learning are promoted in this way.

The student's activity is the core of PBL teaching mode. It is required the students as the theme of the whole teaching process to give full play to the students ' thinking ability and ability to solve the problem. Thus, the students can realize the fun of solving problems and the sense of accomplishment. In order to promote students' active participation in the PBL teaching process, to ensure the teaching effect and quality, we must set up a reasonable, effective and fair evaluation system of students' performance. In the evaluation system of PBL mode, the combination of normal examination (70%) and final Examination (30%) is adopted. Among them, the normal examination includes students' self-assessment (20%), group members evaluate each other (30%), teacher evaluation (50%), is used to evaluate students' learning attitude and learning ability.

CONCLUSION

In summary we reform the traditional "instillation" teaching methods in the course of teaching "Hospital Information Equipment Assembly and System Maintenance" and introduce the PBL teaching mode to guide students to learn independently. The practice has proved that we have achieved good teaching results, stimulated students' interest of analysis and thinking and hands-on practice in deeply. We have improved the spirit of unity and cooperation among students which has great practical significance for improving students' practical ability.
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