

Application of Problem-Oriented Teaching Method on College Education

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Abstract: Universities and colleges which are aimed at cultivate students' independent learning ability and innovation ability can adopt problem-oriented teaching method in education. The problem-oriented teaching method can improve students' learning enthusiasm and comprehensive ability, and promote the reform of teaching method. But it is easy to fall into the trap of traditional teaching methods, to ignore the cultivation of the team cooperation spirit and the cultivation of student ability. The way to improve problem-oriented teaching method includes conjunction diversities teaching methods, using modern information technology and improving the teaching capacity of teachers.

1. Introduction

The purpose of traditional education is to teach students to enlighten their brilliant virtues and pursuit the ultimate goodness. Nowadays, college (include university) education not only needs to pay attention to the cultivation of students' moral sentiment, but also requires the cultivation of their ability to survive. The ability to survive here includes some basic skills and abilities, such as mastering the foundation of professional knowledge and learning to learn. So cultivating complex talents is the target for most colleges. The most important thing for innovative talents is the ability to acquire new knowledge, learn new knowledge, and use new knowledge. Discover new problems and concepts, and master new methods and new ideas, continuously improve students' ability to innovate and create. It can also promote the students' thinking ability and comprehensive quality. As courses in colleges are theoretical, teachers mainly use traditional teaching methods. The traditional teaching method always views teacher as the main role in the classroom. Although the traditional teaching method is intuitive and easy to understand, students are passively accepting knowledge and lacking of communication with teachers.

In order to improve the tradition method, some new teaching method has been introduced, such as case teaching method (Tang Hua etc. al., 2018)^[1], interactive teaching method (Zhou Jing & Huang Kai, 2019)^[2], Mixed teaching methods (Wang Kun etc. al., 2019)^[3], communication teaching method (Shu Dingfang, 2019)^[4] etc. These teaching methods is good for students to develop learning ability, cultivate the sense of innovation, comprehensively improve the quality of education, and promote the continuous development of students' comprehensive ability.

Today, another teaching method will be introduced which called problem-oriented method using in many colleges. The problem-oriented teaching method is oriented by problems, which is also student-centered. It pays more attention to teacher-student interaction, which can strive to cultivate students' ability to solve problems and improve the quality of teaching.^[5] In a broad sense, the problem-oriented teaching method focuses on cultivating innovative talents with autonomous learning habits and autonomous learning ability. In a narrow sense, problem-oriented teaching is based on the understanding of textbook knowledge, through the question to make students think actively, and with the help of the activity of the problem discussion to analyze the problem, so that students are familiar with the problem solving process.

2. The Role of Problem-Oriented Teaching

Problem-oriented teaching advocates that teachers and students communicate on the basis of mutual respect and students can actively participate in problem inquiry. With the cultivation of

modern information technology, the problem-oriented teaching method which aims at cultivating students' comprehensive ability and application ability, adapts to the development of the times and enriches the teaching methods of college education. Compared with the traditional teaching method, the application of problem-oriented teaching method can improve the interest in the classroom and promote students' active learning^[6]. It can also improve the students' overall quality and promote the reform of teaching method in universities and colleges.

2.1 Increase Students' Learning Enthusiasm.

Learning is no longer a process in which the teacher transmits knowledge information to the students and the students passively absorb it, but the learner actively constructs the knowledge. The traditional lecture-oriented teaching method lacks the characteristics of individuality. The problem-oriented teaching is based on the problems which require students to obtain answers by collecting and analyzing relevant documents and data. This process can effectively increase students' interest in solving problems. When the problem-oriented teaching is applied in the classroom, it can improve the fun in class and make students interested in listening. At the same time, teachers put forward questions according to the scheduling of the course, so that they can control the teaching process. Using modern information technology, combined with the teachers' fine lectures and inspiration, it will create students' independent exploration, question, and discussion. Only through intuitive experience and careful observation, can students draw correct conclusions. So the problem-oriented teaching method can effectively stimulate students' interest in learning which embody the student's main position.

2.2 Promote Students' Comprehensive Ability.

In order to successfully obtain the answer, college students need to obtain relevant data and documents through many channels. In addition to the traditional library materials, the information on the web page is also the main and direct way for contemporary college students to obtain relevant data and information. Therefore, in order to complete the problem of teacher arrangement, students need to master the modern information technology. The use of modern Internet technology can also foster students' ability to obtain, screen, judge and comprehensively analyze information resources, which plays an important role in improving students' thinking ability and creativity ability. It can also cultivate students' ability to raise problems, analyze problems, and solve problems. The process that college students using information is also a way to improve self-study ability and independent research ability. Students must master the means and methods of cognition, from "teaching" to "learning", which also helps them to cultivate their creative consciousness, creative thinking, creative personality and creative skills.

2.3 Promote Teaching Method Reform.

The application of the problem-oriented method can not only improve the comprehensive ability of students, but also can promote the reform of college teaching method. In order to effectively applying problem-oriented teaching method, teachers should pay attention to the impact of thematic discussed on students' personal abilities and insist on viewing students as the main body at class. To successfully carry out teaching activities, improving students' participation is one of most important teaching processes. So the problem-oriented method asks teachers who teach in the college to adopt new teaching method. As result, it accelerates the speed of teaching reform and provides more possibilities for teachers to innovate their teaching methods.

3. Problems in Problem-Oriented Teaching

The problem-oriented teaching method focuses on cultivating students' independent learning and innovation ability. In the teaching process, teachers need to fully grasp the teaching content and understand the students' abilities. If the teaching process does not pay attention to that teaching purpose, teaching content, and teaching procedures of the problem-oriented are different from traditional teaching method, the following teaching problems often occur.

3.1 Easy to Fall into the Trap of Traditional Teaching Method.

The purpose of problem-oriented teaching method is to enable students to use relevant theories to solve practical problems and improve their innovation ability while solving problems. If we believed that the problem-oriented teaching method is just simply to put forward a question in class and then let the students answer it, the problem-oriented teaching method is prone to falling into the trap of traditional teaching method, which acts as that “teacher ask questions – students answer the questions – if students cannot answer the questions, the teacher will explain it”. This is only the basic requirement of question-oriented teaching. It can only be regarded as a "questions-answer" lesson program and it is difficult to mobilize students' interest in learning. The complete problem-oriented teaching needs to be based on the students' acceptance situation, with the aim of developing students' learning potential to put forward a problem that can be seriously dealt with by students. Most of the problems are open questions and there is more than one way to solve the problems, and the answer to the problem is not an only one.

3.2 Easy to Ignore Cultivating Students' Team Cooperation Spirit.

The Problem-oriented teaching process is inspired by teachers. The problem should base on the students' original knowledge to provide independent learning and cooperative discussion among students. Teachers should provide students with the opportunity to freely express, question, explore, and discuss issues, so that students can apply their knowledge to solve practical problems through individual, group, and collective problems. If teachers only find out the answer when they assign homework, it is easy to ignore students' team cooperation. The ability to learn independently is important, but the spirit of cooperation is also important. If teachers ignore to cultivate the college students' team cooperative spirit especially in today's society where information is so important that material and knowledge sharing have become a trend, students are hard to live better in society.

3.3 Easy to Overweight Students' Abilities.

The purpose of university courses is to improve students' self-study ability, innovation ability, and collaboration ability. The problem-oriented teaching method takes the problem as the starting point and requires students to complete the solution within the specified time. The process of solving problems is also a process of discussion and communication between students. In this process, students need to cooperate with each other, work together to complete the task and find the answer to the problem. If teachers only focus on the results in this process, it is easy to kill the students' interest in learning and even ignore the students' ability development. If teacher puts forward a “big problem” in order to let every student take part in class, then students cannot answer it, even to explain it because the teacher has overweight the students' abilities.

4. The Way to Improve Teaching Problems

4.1 Conjoint Diversities Teaching Methods.

The problem-oriented teaching method is the process of guiding students' self-learning from the problem, but it is difficult to put forward accurate questions to practice teaching goals. In this regard, we can conjoint the problem-oriented teaching method with the goal-oriented teaching method and the trial-and-error teaching method. The goal-oriented teaching method mainly refers to the teaching method in which the content and procedure of teaching should take the teaching goal as the core. The trial-and-error teaching method test refers to allowing students to solve problems on their own, try various ways to solve problems, and finally find the correct or appropriate solution. In the process of using combination of the problem-oriented teaching method, the goal-oriented teaching method and the trial-and-error teaching method, We can put forward appropriate reasonable problem according the teaching goal and carry out trial-and-error answers. It can effectively avoid setting unreasonable problems so that students do actively participate in the problem.

4.2 Use Modern Information Technology.

The use of modern information technology in teaching can develop curriculum resources and provide students with more abundant and intuitive learning resources. It also can enrich teaching forms, change traditional teaching methods and traditional learning methods to integrate subject knowledge, increase classroom capacity, and allow students to actively participate in learning process, so as to maintain students' interest in learning and improve learning efficiency. The use of modern technology in problem-oriented teaching not only provides students with a platform for searching for materials, but also breaks the limitations of time and space. With the support of modern information technology, teachers and students can communicate and interact at any time, which helps students to participate with other students who live thousands of miles apart. Students can communicate on mobile devices such as mobile phones, computers, and iPads through QQ, WeChat, friend circles, Weblogs, and forums. This will not only record and present their ideas in a timely manner, but also provide students with interest.

4.3 Improve Teachers' Teaching Ability.

The problem-oriented teaching method mainly starts from the problem. It finds out the teaching problem which needs teachers to focus. In order to obtain the relevant knowledge and ability of teaching method, the application of the problem-oriented teaching method requires that college teachers adopt an open and inclusive attitude to study constantly. While improving their professional abilities and professional qualities, they can flexibly use modern information technology. Give full play to the role of modern information technology in teaching reform. When teachers adopt modern information technology and modern teaching method, they still cannot ignore the importance of traditional teaching methods and teaching ideas. In the traditional teaching method, reviewing existing knowledge is the basis for learning new knowledge. The application of the problem-oriented teaching method needs to continuously improve the teachers' teaching level, so that teachers can use various teaching methods in a comprehensive manner according to the students' ability to master, understand and adapt to knowledge.

5. Conclusion

The problem-oriented teaching method is one of the main methods to train students' independent learning ability and innovation ability. It can effectively cultivate students' innovation ability, self-study ability and cooperation ability. After analyzing the function of problem-oriented teaching, this paper finds out some problems that are easy to appear in the process of problem-oriented teaching, such as easy to fall into the trap of traditional teaching method, overweight students' abilities, and ignore cultivating students' team cooperation spirit. It is believed that use various teaching methods, modern information technology, and improve teachers' teaching level can avoid the problems which are easy to appear in the problem-oriented teaching method.

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