Application of Interactive Teaching in Mechanical Engineering Teaching

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Abstract. The double subject teaching mode of interactive teaching is increasingly accepted and implemented by the educational circle. Interactive teaching could improve the enthusiasm and initiative of teachers and students, and education management and classroom teaching effect. In the classroom teaching of mechanical engineering, teachers can use interactive quiz to stimulate students' learning enthusiasm. By performing classroom presentations on learning topics, student could improve self-confidence and conducting panel discussion to create peer collective learning atmosphere. The value of interactive teaching in teaching is worth digging further.

1. Connotation of Interactive Teaching

Man is the sum of social relations. Interactive communication is the living manifestation of human beings. Interactive communicaiton is the interaction and interaction between actors. The actors include individuals as well as various groups. Interaction is a two-sided interaction and reaction. Classroom interaction, as a special form of interaction, is the interaction and influence of various forms, shapes and degrees of interaction between teachers and students in class. The types of classroom interaction can be divided into four types from the actors: teacher interact with students, students interact with students, students interact with student groups and student groups interact with student groups. Orderly classroom interaction is an important way to enliven the classroom atmosphere.

Interactive teaching method believes that educational activities are the exchange and communication of knowledge, information and emotion between teachers and students, and the teaching process is a dynamic and unified process of teaching and learning, and a systematic fusion of the functions and values of teachers and students. Interactive teaching through teaching and learning could promote and communicate each other in all directions, to meet the effective needs of students and social talents[1]. Interactive teaching is a kind of teaching method of equal and harmonious dialogue and exchange between teachers and students in the classroom teaching. Interactive teaching is a kind of teaching method which means teachers and students can exchange the content of the teaching by equal dialogue and harmonious [2]. Most scholars define the interactive teaching as the interaction and influence between teachers and students in the classroom. They emphasize that the interaction goal is to achieve the unity of teaching and learning, to meet the needs of students' study and the demands of society. interaction between teachers and students is equal, which is highlighted by scholars in the definition of interactive teaching. It is considered as an equal exchange of individual life. On the basis of these scholars' understanding, we think that interactive teaching refers to teachers and students , and the influence would effect each other on the basis of subject equality in classroom teaching.

Interactive teaching has many forms in the actual operation process. The main forms include: (1) The case method, which is based on specific cases, especially the representative case. Students should discuss openly about representative case and propose the corresponding solutions which would be commented by teachers.(2) Asking excitation method. According to the teaching content and teaching actual situation, Teachers design some related teaching content to promote students' thinking, and stimulate students' desire for knowledge, and help students better understand the teaching content. (3) Situational heuristic methods. Teachers design scenes similar to teaching content to put students

personally into the scene so as to arouse the students' manifold feelings.So that students can master the knowledge and learning skills in the relaxed environment.Teachers can flexibly or comprehensive use the above methods according to the content of the course and the class.

2. Advantages of Interactive Teaching Methods

2.1 Interactive teaching fully mobilizes the enthusiasm and initiative of teachers and students

Interactive teaching method has abandoned the completely "Spoon Feeding" teaching, and also avoided the "Sheep Style" teaching, which fully stimulated the enthusiasm of teachers and students. Teachers and students are interdependent in classroom instruction. The objective law of teaching requires that we should respect the leadership of teachers and the subjectivity of students. Therefore, in practical classroom teaching, all methods must be taken into consider so that both teachers and students can devote themselves to classroom teaching. Interactive teaching emphasizes the interaction between teachers and students. Teachers are required to interact with students in a variety of effective ways. This makes the teacher give full consideration to the subjectivity of the students and realize that the object of the teaching service is the students and must follow the rules of the students' study. The transfer of interactive teaching to students' subjectivity has changed the students' passive participation in class. Students have the opportunity to take an active part in classroom teaching, which greatly arouses the enthusiasm of students. Therefore, interactive teaching can not only play the leading role of teachers, ensure the effective development of classroom teaching, but also play the main role.

2.2 Interactive teaching is propitious to improve teaching quality

The quality of teachers is directly related to the degree of students' absorption of knowledge and the degree of participation in classroom. Improving the teaching management requires not only the teachers' knowledge of teaching psychology, but also the need for sufficient knowledge reserves. Of course, how to prepare the teaching content through the simple way to make students accept and understand depends on the teaching process. Interactive teaching method enables students to participate in classroom teaching by mobilizing students' initiative, and even allows students to make different opinions. Through the participation and feedback of the students, teachers should adjust their teaching emphases and difficulties in time. According to the student's confusion and doubt, teachers should timely analysis and interpretation, making the teaching content to meet the needs of the students and more in line with the objective law of students knowledge. Interactive teaching makes the teaching and learning of organic unity.Teachers and students in the classroom interaction and mutual consultations,will urge students to think actively, grasp more knowledge. The most critical point is to deepen the understanding and flexible use of knowledge. Students are participate in classroom teaching, which puts forward new requirements for teachers preparing lessons. Teachers must be study teaching content more carefully and prepare students' questions in class teaching, which make teaching plan more perfect, especially the knowledge depth and attraction of the teaching contents. In a word, interactive teaching can help to improve teaching quality and teaching effect because of the encouragement of teachers and the participation of students.

3. Application of Interactive Teaching in Mechanical Engineering Teaching

Traditional teaching method emphasizes the leading role of teachers too much and ignores the main role of students, which lead to "Spoon feeding" becoming the main method of teachers in teaching and students just passively accept knowledge and lack of participation. Traditional teaching makes the students lack the ability to study independently, express communication and innovative practice. Therefore, facing the era of rapid knowledge updating, many students are helpless about new knowledge and new problems, especially for engineering students to integrate into society. Considering the advantages of interactive teaching, we talk about the application of interactive teaching in light of our own subject teaching practice.

(1) Q & A interaction, which can stimulate the enthusiasm of students thinking. Plain classroom teaching is easy to form the boring atmosphere of subject in class. The boring atmosphere is easy to

make the students attention away from subject teaching content and will be sleepy straws. On the other hand, the whole will suppress the class atmosphere, which isn't conducive to the formation of good class atmosphere. So, classroom teaching must be interspersed with clever questions, which can stimulate students' thinking enthusiasm, arouse the attention of students and prevent students' attention away subject teaching content.

The design of the problem should be closely related to the teaching content and objectives, in line with the students' learning level, at the same time to be interesting and close to the actual life of contemporary college students. Questions should be taken into consideration in the representation of students. Not only including good grades, but also unsatisfactory academic results. They should also include willing to answer questions as well as those who are not good at speaking. Before asking questions, the main points of the problem should be repeatedly stressed and attract the attention of the students. After the question, teachers should leave some time to let the students give full consideration , or go down the platform to the students and urge them to think. For students' answer, teachers must seriously comment, both to point out the correct place and the wrong place. On the whole, positive encouragement is the main factor.

Another way to Q & A interaction is students asking questions directly. Before class, teachers make teaching reference books and ask students to preview before class. Students write down questions they don't understand, ask questions from teachers. And then teachers answer these questions in class. Allowing students to ask questions is more likely to stimulate students' enthusiasm for learning, and easier to invest in the teacher's content. In this process, teachers should pay attention to selecting students' representativeness and control the time for teachers to answer questions. The best way is to answer the students' questions, and guide students to understand and master the content of the teaching. Let students follow their own questions and learn happily in the ocean of knowledge.

(2)Class presentation, which can improve students confidence in learning. The meaning of class presentation is to make individual outstanding students prepare oratorical courseware around a certain question related to the teaching content and show in class. Teachers in advance choice some lecture content that suitable for class students to speech and pay particular attention to the choice of content with high degree of learning acceptance, moderate degree of difficulty and high possibility of learning. Then inviting students to prepare their own speech around the layout of the content and show their lectures in formal classroom teaching. Throughout the preparation process, teachers should always pay attention to the preparation of students and actively solve the doubts of students. Teachers should carefully screening these oratorical coursewares prepared by students and select well prepared and well organized coursewares. Then asking the selected students to show the class what they are prepared in class.This class presentation will undoubtedly arouse the enthusiasm of students,make students realize the concept of honor that comes with mastering knowledge and promote other students learning enthusiasmthe in class.

Teachers should strictly limit students' time in class presentations. If the time dragged too long, it will affect the subject of teachers teaching content.It is better for teachers to advance their students to practise before class when students start their formal speech.So that when the formal class presentation,students will not result in reduced effect by nervousness and confusion.

(3) Group discussion,which shapes collective learning.Individual and atomistic classroom learning will make students easily fall into fatigue and disperse their attention.and It is not easy to find the fun of learning.So the modern teaching theory advocated more peer learning,through peer mutual encouragement and promotion to improve the learning effect and efficiency. Group discussion is an important way to peer learning.

The key to the group discussion is to select the topic for discussion.The subjects chosen by teachers must conform to the requirements of the teaching contents and the learning rules and cognitive interests of the students. Only by being close to the interests of college students can they arouse their enthusiasm for discussion. The topic of group discussion should be combined with theory and practice.At the same time, it has both theoretical knowledge and realistic problems.The group discussion time should not be too long, generally arranged in 10-15 minutes. The number of group discussions can be flexibly arranged according to class conditions. Throughout the discussion

process,teachers should observe in real time to prevent the discussion deviating from the subject.After the discussion, each group should be asked to submit a summary of the discussion.According to the quality of each group discussion, select a representative group to report on the stage.

4. Conclusion

Interactive teaching is welcomed by teachers and students because of its own advantages. It promotes teachers to concentrate more on classroom teaching and improve their teaching level. On the other hand, it promotes the initiative of students' learning, and make them actively discusse with teachers.In a word,interactive teaching is helpful to the realization of Teaching benefits teachers as well as students.

Acknowledgements

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