Teaching Information Technology with Case Method in Colleges of China

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Abstract. Based on the elementary education in middle school and high school, the content of the course of Information Technology in college focuses on advanced operations on computer, such as solving the problems when using computer, handling the pictures with Photoshop. The operation skills are important in this course. Case method has three stages, individual preparation, small group discussion and class discussion. According to the characters of the college students and the course, we improve case method to four stages, individual preparation, small group discussion, class show and making decision. For 3 years practicing, we have written 18 cases and got good teaching result. The class not only transfers the knowledge, but also trains skills as self-learning, self-expression and solving problems personally.

What is Information Technology Course?

Information technology skills are a necessary core skill to highly skilled talents. As the chief position in training highly skilled talents, vocational college provide a course named information and technology to train information technology skills. The content of the course includes how to use Windows operating system, how to use Word, Excel and Powerpoint, how to search information with internet. It's a course to provide to all of the students no matter what major it is.

Why the College Students Still Learn Information and Technology in China

In China, the students begin to learn information technology in grade three in primary school, most of the college students can type, format the document in Word, operate Windows and be skilled in searching information with internet. The levels to use computer of the students in vocational college are different due to the various levels of economic development in each area.

In college, the source of students is complex. Some are from high school, some are from technical secondary school and the others are form technical school. Different students accept information technology courses in different ways, resulting in their computer operation ability are significantly different. At the same time, due to the different economic development, the requirements and teaching methods of information technology courses vary greatly. All these lead to the uneven level of students' computer operation. It's necessary to provide information and technology course in college.

When we begin to teach this course, we need to know what the students can do in their past experiences. We test the student for several years, and we decide to teach them how to deal with the common problems when using computer, how to format the complex document in Word and how to use Photoshop.

Case Method

The case method is a teaching approach that uses decision-forcing cases to put students in the role of people who were faced with difficult decisions at some point in the past. In contrast to many other teaching methods, the case method requires that instructors refrain from providing their own opinions about the decisions in question. Rather, the chief task of instructors who use the case method is asking students to devise and defend solutions to the problems presented by each case

In the common, there are 3 stage learning process in a regular case class, individual preparation, small group discussion and large group or class discussion. The first stage is individual preparation, which is the basis for all subsequent work. The students need to learn some theoretical materials contained in the case. The next stage is small group discussion; it can help the students know better about the case and relevant information by teaching each other. Large group or class discussion is the last stage, it makes the students reach a thorough understanding of the case and gives the students the opportunity to practice in the large group, and then get the solution of the case.

Case method emphasizes that the students solve problems independently and personalized, and the solution of the case will be different. Discussion in the class will train the ability of communication and expression he. All of these are new and interesting for Chinese students who have long accepted indoctrinated learning, and it is also in line with the habits of young people to properly challenge. Therefore, it is worth trying in vocational students.

Improved Case Method according to the Students Character

In order to solve the problems in the case, the students need to learn theoretical materials about the problems before the class by themselves, unless they will say nothing in the small group discussion, which can make the class not to go on. But the college students are not good at studying by themselves, they can't or they don't want to choose the useful information from massive information on the internet because it's difficult.

For a long time, Chinese students have been accustomed to learning under the guidance of questions. They usually answer questions designed by teachers to complete their studies. Moreover, the students attach great importance to examinations and grades. According to the characteristics of the students and the courses, we improved case method to make it fit for the college student. The three stage in the improved method is: individual preparation with materials provided by teacher and a test; small group discussion under the questions and judgment; large group or class discussion will show some operations to all of the class. The class process in improved case method shows as Figure 1.
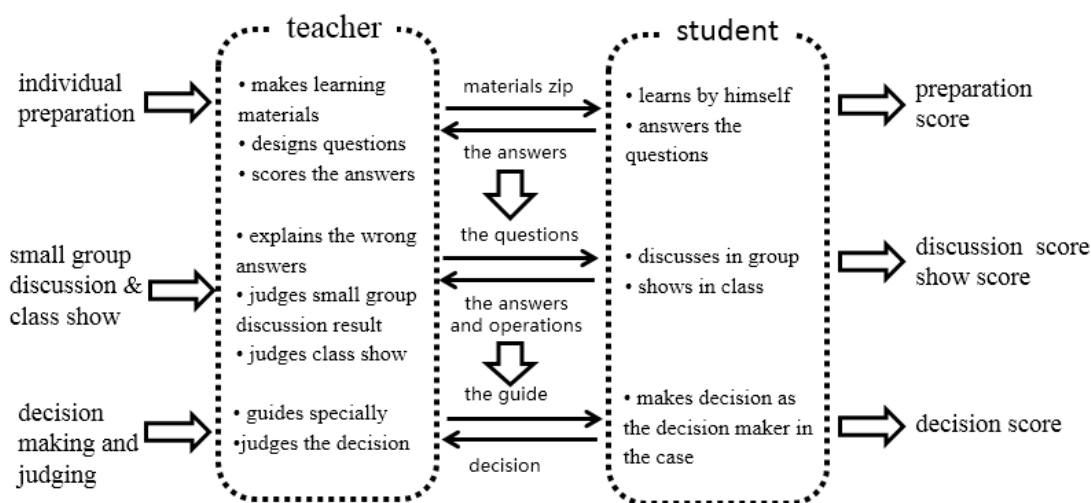

Fig.1, The class process in improved case method

Individual Preparation before Class

Before the class, the teacher sends the case and relevant learning materials and some questions to the student. The students read the case and find the problem that the person in the case met. They can learn the materials provided by teacher at anytime and anywhere, and then they need to answer the questions sent with the case. The teacher scores the answers and counts out questions with high error ratio.

Small Group Discussion and Class Show in Class

In class, first the teacher explains the questions with high error ration. Then he groupings the students, gives the discussion topics and begins the small group discussion. After that, the teacher should judge the discussing result for each group. We change class discussion to class show, because Information Technology course has many operations on computer to do, the students who shows his operation to the class will be added more mark.

Make Decision and Judge the Solution

After 2 stages above, the students know the problem in the case and be acquainted with the information on the solution, the next step, they will solve the problem personalize and give his solution. For each case, we report a video about how the decision maker does in fact or the manager who gives the problem wants, and these are the evaluation criterion to the solutions made by students.

Judge Immediately in the Whole Teaching Process

The students will get four scores in a case process. In individual preparation stage, the teacher will judge them by their answers on the provided questions. In small group discussion stage, the teacher will choose a group member randomly and choose a question from provided for this stage randomly, he scores all of the group members by answer of the chosen member.

In class show stage, the teacher scores the student who shows by his operations of the question. At last, there is a score of case solution, according to the solution in fact or the need of the manager, the teacher judges the solutions of the students, and gives a score.

A Teaching Example in Case Method

Here we will give an example in the teaching with case method. The example is a case about how to use Excel; its content includes formula, data relation, sort and rank.

The Case

The case is from a graduate of my college, whose name is Shu CAO. She was the monitor. Once a time she was asked to rank all of the class according to the academic record and special skill such as contest, music, sport and so on. She got academic record sheet and special skill record of each student in picture.

Individual Preparation

In order to reduce the difficulty to complete the task, we make 4 videos to explains the knowledge relevant to the case and afford to the students. They are how to use formula, what data relation between sheets is, what is sort and how to do, what rank is and how to do. With the videos, we give 10 questions to test whether the student know the knowledge or not. We judge their answers and mark them. The questions put emphasis on the knowledge, for example:
What's the difference between relative reference and absolute reference?
What is data relation between sheets?
How to refer the data in other sheet?

Small Group Discussion

In this stage, we choose several more difficult questions in individual preparation; it puts

emphasis on the knowledge, makes the concepts more clear by discussion.

Class Show

In this stage, we give some operation questions, for example, provide to sheet a and sheet b, ask the students refer the data from sheet b to sheet a. The student who shows his operation to the whole class correctly will get extra scores.

Decision Judge

To let the students know what is a good solution of the problem in the case, we make a video of the counselor who released the task. He tells us his requirement. 1, the sheet should be easy operation, there is no horizontal scroll. 2, it should be easy query, when someone doubt if the scores are correct, he can find the information in this sheet but not look up the original record. At last, the sheet should be easily alter, when altering one score, the other relevant to this score will be altered automatically. In the light of his requirement, we judge the solutions and score them.

Summary

After three years of practice, the improved case method is more suitable for Chinese students. It has played a good role in cultivating students' cooperation, personalized problem solving, self-learning, self-expression and other aspects. Driven by the scores, students' learning initiative is also passively stimulated, which makes teaching can be smoothly promoted. Each case in the improved case teaching method involves four evaluations and four achievements, which increases the workload of teachers and occupies classroom time to a certain extent. In order to provide efficiency, we can develop and design small software specially used for group evaluation and class presentation evaluation, which can automatically count and score.

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