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The application of flipped classroom in the teaching of Computer Application Basis

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Abstract. "Computer application basis" is a compulsory cultural basic course for college students; however, there are many inadequacies in this course, including large gaps among students in terms of learning basis, lacking of interests on study, weak learning abilities and lacking of the basic conditions in school teaching, etc. Facing such condition, we should focus on how to reform the teaching of "computer application basis", which not only match the learning characteristics of contemporary college students, but also overcome the current situation of lacking school hardware so as to reach better learning effect. Thus, this is an important subject for computer teachers. Based on the author's teaching and learning experience, this paper analyzed the disadvantages existing in the teaching mode of "computer application basis", *and* then the teaching design process based on the concept of flipped classroom was put forward.

Introduction

With the popularization of computer technology and intelligent terminal equipment, the gap between students' basic computer knowledge and practical ability is becoming more and more obvious than that before. There are many problems existing in the process of computer-application basic teaching course in application of the traditional teaching model, including frequent sleeping while listening, absorbed in smartphones and even truancies by the students. Flipped classroom is a teaching form which needs face-to-face communication, discussion and completion between students and teachers; in this process, the students learn the collected or recorded data at home in advance by using the intelligent terminals. The author tried to apply the flipped classroom concept into computer application basis course so that it will not only realize the differentiated teaching, but also inspire students' learning enthusiasm; meanwhile, the autonomous learning ability and innovative ability are enhanced.

Disadvantages in Traditional Teaching Mode

Single teaching mean can not be applied into differentiated teaching. Uneven economic development in different regions and different attentions on high school information education have caused uneven basic computer ability from various regions of the country. If school still use the slide in the class, it will definitely make parts of the students with solid foundation and practical ability feeling extremely uneasy; other students will gradually lose interests in learning. Some schools adopt the hierarchical teaching form so as to realize differentiating instruction, but this produce very little effect. It is difficult to quantify the classification standard; in addition, the reintegration of class led to the confusion on teaching management, which also increases psychological pressure for the students in different levels.

Lack of practicality, interest and pertinence. In traditional teaching mode, if teachers want to take into account all the students in limited class hours, they must strictly obey the teaching outline so that all the knowledge can be presented to students in class. Teaching content is lack of practicality, interest and pertinence, so it is difficult to teach students in accordance with their aptitude; as a result,

the students are always going to school with hope, but going home with disappointment.

Focusing on the results assessment with ignorance of process assessment. Evaluation methods have strong guidance on students' learning behaviors. Computer basic course is a very practical course, so we should pay more attention to the process of evaluation; a single assessment form and even a piece of examination paper are not effective enough to evaluate teaching works and to mobilize students' enthusiasm and initiatives.

Teaching Design Process Based on the Concept of Flipped Classroom

(1) Preparation before class.

Establish sharing platform of network teaching resources. Nowadays, the cyber resources are very rich so that many websites have provided a large number of high-quality videos of university basic computer courses. In China, the School Online was operated since October 2013, there are many platforms like CNMOOC, Ewant, Huawenmooc, Icourses and so on. The author watches and downloads these resources in advance, and then organize them with sharing his teaching video, relative electronic lesson plans, exercises, simulation test system, training materials and other resources on the network through network disk and cloud storage and other tools, so that students can download it and have autonomous learning. The video learning contents provided by author are divided into the basic learning module and development module. The contents in basic learning module are consistent with the teaching materials and teaching syllabus; I also add some popular videos concerning the skill application in the ability-expansion module, such as installation and maintenance of computer, network information retrieval and so on. Students can grasp the learning progress according to their own situation; especially for the students who have better knowledge can read content only once so that to have a general cognition connecting with former knowledge; as for the students who do not have solid knowledge can watch videos repeatedly without any limitation of time and place until they can fully understand. Through the platform of resource sharing, the student can pick up what they missed in the class and lay foundation for differentiated teaching. This method can not only strengthen the teaching extension after class, but also can cultivate students' autonomous learning ability.

Carefully design task before each class. According to the teaching schedule and the students' level, we make use of ARCS model and carefully design pre-class tasks so as to make clear learning goal; we also choose moderately difficult content in various forms with vivacity and interests. Further, certain evaluation and feedback are also added, which can fully arouse students' learning enthusiasm. The teaching content of computer application basis can be divided into two parts: basic theory and practical application. In the part of basic theory, the main tasks for the students before class are watching video, animation and self-testing exercises. The key teaching points will be presented by the videos, and the difficult point will be shown through the form of animation. The students can evaluate their learning conditions through self-testing questions after watching videos and animations. In the part of practice, except for watching videos before class, we ask the students to make certain specified effects in accordance with their knowledge and materials provided by the teachers; with the progress of the study, the difficulty will be gradually increased and the problems will be gradually changed from closed to open.

(2) Classroom teaching activity design - Based on interview

The interviews can also be the form as "the students ask question and teachers answer it". In terms of some contents with strong application, the teacher can encourage the students to raise their hands and then help students to answer. When the practicability of the knowledge was discovered by the students, the enthusiasm also can be stimulated. For example, teachers can encourage students to express their confusion in information-gathering process when giving a class of information retrieval. Here are three examples of interview teaching in class.

The first question: "although I logged in the MOOC curriculum, I found no direct link to

download. Could you tell me how the teachers download these videos?" The live demonstration and solution: you should use the search engine Baidu and search your question like "how to download videos on MOOC", and then quickly you will find ways to download and download a video immediately according to the method.

The second question: "I want to go for a travel, but I have no time and money. What should I do?" The live demonstration and solution: nowadays, many tourism attractions have the corresponding clients for tourists, if you want to travel the Forbidden City, you can search for" Virtual Forbidden City ", and then download the client-side to register so that you can visit anywhere in the Forbidden City as a traveler.

The third question: "nowadays, the two-dimensional code can be seen everywhere, so do you know how to make two-dimensional code and use it to introduce myself or local specialties in my homeland?" The live demonstration and solution: firstly, you should make a simple business card, and then search for "how to make two-dimensional code card" so that you can make two-dimensional code card in accordance with the search results. When the students find that the various problems in their lives can be solved easily by the Internet, the independent consciousness, students' autonomous learning ability and innovation ability can be greatly cultivated and strengthened in this process.

To study the digital form of the Pyramid Theory by the achievement-demonstration way shows whether the learners can also remember the content in two weeks (the average retention rate of learning). In the basic position of the pyramid learning, the most efficient way of learning is "teaching" or "to apply immediately", which can let learners still remember contents about 90% in two weeks; however, the average learning retention rate for the traditional "lecture" is only 5%.

For document editing, slide production and other highly operational contents can be solved by the way of achievement-displaying so that to motivate students into practice. The way of achievement-displaying firstly asks the students to design a personalized document combined with a specific application theme according to their knowledge before class, such as using word to make a resume, editing an existing document in accordance with the format requirements and specifications, sending a notice to students through mail-merging, etc. Moreover, it also asks students to make Thanksgiving cards by the slide with background music and hyperlinks, etc. In order to encourage the students who make good job at homework, parts of the students can be invited to show their achievements and share experience in class. According to the feedback from the students, the students make progress quickly when they adopt the way of achievement-displaying. Previously, though the students can understand and operate what they learned in class, the impression is blurred once the textbooks are closed. At present, the students learn by hearts at the thought of making presentation in class; as a result, we're glad to hear that the students' confidence and interests are inspired by it with a clear minds; even for some students, they learn animation and other applications on their own initiatives. Thus, the adoption of the achievement-displaying way can internalize knowledge and expand ability.

Teaching Effect Analysis and Reflection

In order to evaluate the teaching effect of the Flipped Classroom, the author makes a comprehensive evaluation and on students by means of basic knowledge test, application skills competition, questionnaire and other forms. From the final examinations, the students master the basic knowledge very well, and their grades' distribution are abnormal for it relatively concentrated on high scores between 86 and 95; as for the application skill competitions, we find that the students' practical abilities are significantly improved, and problem analyzing and solving skills have also been enhanced; in the final questionnaire, the students say "we love the Flipped Classroom for we can learn knowledge and relative contents in the interactions, which not only expand the daily practical skills of utilization and maintenance on the computer, but also more importantly master the channels and methods of collecting information; it trains self-learning abilities for the students, which will be

beneficial to learn other courses in the future. At the same time, the computer is no longer mysterious, and students can repair computer by themselves."

Summary

Through an entire semester of teaching practice, the Flipped Classroom concept is good for computer application basis course and differentiated teaching can be achieved in the end. Moreover, it not only improves the practical skills, autonomous learning abilities of the students, but also increases classroom interactions with more active atmosphere so that to enhance the friendship between teachers and students; with the increasing of interactions, the teacher evaluates the students in a more objective way. However, with the rapid development of information technology, to achieve a good flipping, teachers need to learn constantly and devote themselves to teaching works; further, they'd better form a team.

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