Application of “task driven + Moore” mode in experimental teaching of computer basic courses in Universities

Wenwu Tan

Jiangxi University of Engineering, Xinyu, China

Keywords: task driven; Mogao class; university computer basis; experimental teaching

Abstract: According to the characteristics of the basic computer courses in universities, the traditional laboratory teaching mode is analyzed, and a teaching mode of “task-driven + course-admiring” is proposed for the experimental teaching of this course, which is based on the “course-admiring” learning platform and guided by the task-driven of experimental teaching. Organize experimental teaching with students' learning ability and individual needs. Practice teaching shows that this method greatly improves the enthusiasm, initiative and creativity of students' autonomous learning.

1. Introduction

The prominent feature of university computer basic course is the combination of theory and practice, which has become a compulsory public basic course in the teaching system of talent cultivation in Colleges and universities. At present, colleges and universities have fully realized the importance of computer basic course experimental teaching in cultivating college students'practice and innovation, and have changed the teaching of computer course from the concept of “laying stress on theory but neglecting practice, laying stress on foundation and neglecting application” to the teaching method of computer laboratory with practice as the main content. However, with the deepening of curriculum reform in Colleges and universities, the experimental teaching of computer basic courses which only rely on laboratories as the main carrier of teaching environment is facing more and more prominent problems. How to reform the existing experimental teaching methods, substantially improve the computer application ability of College students, and cultivate innovative talents in line with the requirements, is the main task that we need to face at present.

2. The main problems in experimental teaching.

At present, the teaching mode of computer basic course is mainly multimedia teaching environment in computer room plus computer experiment. [1] Although this teaching mode puts practice and theory in the same space and time, it neglects the cultivation of students'individualized ability in the teaching effect.

1) The form and content of experimental teaching is single, so it is difficult to attract students' interest in learning. Computer basic course experimental teaching mainly depends on the teacher's courseware teaching, students through multimedia equipment to watch the teacher's operation method, according to the teacher's assignment of the experimental task, in the laboratory computer operation related software, for the acquisition of free exercise. This kind of practice is influenced by the experimental teaching environment, teachers'teaching methods and students' individual abilities. It is usually difficult to achieve good teaching results. The main reason is that this kind of experimental teaching method is difficult to arouse students'interest in learning, resulting in students' inadequate attention in class and feeling in the process of learning. Tired, it's easy to spend time learning other things.

2) The purpose of the experiment is not strong, and the learning task is not clear enough to achieve good experimental teaching results. The design of experiment content of computer basic course is often limited by experiment teaching material. The experiment content of students is relatively fixed. When the experiment content is not updated in time with the change of computer

  DOI: 10.25236/icetem.2019.050

technology, the experiment content can not allow students to further expand the practice, which leads to the lack of pertinence of experiment teaching, the quantity and quantity of experiment content. The quality is not high, the purpose of computer basic experiment is not strong, the learning task is not clear enough, it is difficult to fully mobilize the enthusiasm of students.

3) In the process of experiment, the interaction between teachers and students is not high. In the experimental teaching process of computer basic courses, the core of teaching is only focused on teachers'teaching, students' learning often stays in a passive state of acceptance, making the interaction between teachers and students, students and students obviously insufficient [1]. Even if the teacher carries on the unified instruction in the experimental curriculum, because the limited time can only guide to some students, it is difficult to grasp the overall learning progress of the students. At the same time, students'understanding of the experimental content can only be based on the experimental course and content, rarely thinking and solving problems by themselves. The combination of teaching and learning leads to limited experimental results in the classroom.

4) The evaluation system of experimental courses is not perfect [2]. Under the current experimental teaching mode, the teacher's evaluation of the course learning effect is mainly based on the students'class attendance, school work completion, classroom questions and final exam results, but does not fully take into account the quality of the students' completion of the course, integrity, and the students'mastery of skills through computer experiments. [3] teachers rely more on Teachers' personal knowledge and experience in the organization and methods of teaching contents.

3. The reform of laboratory teaching mode.

The reform of computer basic course in university needs to pay attention to the change of teaching environment, teaching method and teaching technology in the existing laboratory teaching mode. The course education should pay attention to the knowledge, ability, quality and innovative consciousness of talents, so that students can gain the sense of accomplishment and experience the happiness of learning in the process of learning. Sense, promote the upgrading of computer application ability, improve problem-solving thinking ability, cultivate computer information literacy. In view of the existing problems in the laboratory teaching of this course, it is necessary to reform the teaching mode of computer basic course, make full use of existing teaching resources and new computer technology, combine new teaching ideas, draw lessons from new teaching methods, and create new teaching mode of computer basic course. On the basis of analyzing and absorbing various teaching modes, we put forward the teaching mode of “task-driven + admiring courses” for the experimental teaching of computer basic courses in universities. Through task-driven teaching, students can be guided to actively apply learning resources, carry out independent exploration and interactive and cooperative learning, and complete learning and practical activities while completing tasks; and through the learning platform of “mu-class” curriculum resources, students can be guided to participate in the interaction of curriculum learning and fully mobilize students to learn. Activeness and autonomy, to achieve the interaction between teachers and students, students and students on the progress of learning, mutual promotion of teaching results, improve teaching efficiency.

4. Experimental teaching mode research

Task-driven teaching method is to change students'passive learning into active and participatory learning, and form an effective teaching system through the process of designing tasks, grouping reasonably, feedback and control, and evaluation. [4] This teaching method takes improving teaching effect as the main means and cultivating students'practical ability, innovative thinking and autonomous learning as the main objectives. Through this method, teachers can also be encouraged to design research experimental subjects according to teaching requirements, and put forward clear requirements and ultimate goals. Its concrete manifestation is: the teaching activity revolves around a common learning goal, lets the student under the strong question motive drive, through the initiative independent exploration and the cooperation study, completes the study practice activity

while completing the fixed task. However, the task-driven approach also has three problems that can not be ignored: first, the progress of teaching is not easy to grasp; second, the classroom management needs to be improved; third, there are difficulties in teaching evaluation.

The construction, popularization and application of large-scale online course (MOOC) points out a new direction for the curriculum reform in Colleges and universities. The introduction of MOOC teaching mode changes the learning process into pre class video, class discussion and after class test [5]. This process fully integrates the construction of teachers'curriculum resources, the decomposition of learning tasks, the degree of learning participation between teachers and students and the evaluation of teaching effect, giving full play to the role of teacher-led and student-centered teaching. The use of “Mu-class” teaching model, not only greatly attracted the attention of students to the content of learning, but also can let teachers from the heavy teaching process, improve the efficiency of guiding students. Through the management of the learning platform, teachers can restrict students to submit their assignments within the prescribed time and complete the tasks of the experimental course. In the application of course experiment teaching, we combine the task-driven teaching method with the learning resource platform of “mu-class”. The teaching team decomposes the teaching content according to different levels, mobilizes the pressure of students to complete the task by task-driven, and lets the students analyze and design the learning task on their own initiative. Task completion program, combined with the “Mu Course” learning resources platform, students through the allocation of accounts logged into the network teaching center, watching teaching video resources, to find out how to complete the task, and finally combined with practice testing, complete the learning task. After completing the task, the teacher monitors and evaluates the teaching effect through the “Mogao” teaching platform. The teaching flow chart of the process is shown in Figure 1.

5. The application of “task driven + Moore” teaching mode

The experimental teaching of W computer basic course in our university is mainly for the non-computer major undergraduates in the first year of our university. The number of teaching and training is about 3000. The experimental teaching of this course is mainly completed by relying on the teaching team of the computer public department of our university. In the past, the main form of teaching to complete the course is composed of more than 150 large class teaching, teachers teach in class, students practice after class, teaching activities are basically non-interactive. This results in heavy workload for teachers, and the effect of student learning is very limited. In 2016, the teaching team of the computer public course department actively explored the teaching reform mode. Under the organization of the school educational administration department, it explored the teaching mode of “Task-Driven + Mu-Course” and successfully applied it to the experimental teaching of university computer basic courses, and achieved very good results.

5.1 Teaching team building.

The teachers'teaching team in the computer public course of our university is the concrete implementer of the experimental teaching of the basic computer course, and also the builder of the course resources. The teaching team consisted of 7 teachers and 1 experimental staff. Among them, two associate professors, five lecturers and one teaching assistant formed a reasonable experimental teaching and experimental technical support team. The experimental teaching team has determined the teaching dynamic process of teaching objectives, task design, task initiation, learning resources, interactive communication, assignment submission, process monitoring, task evaluation and so on, and formed a teaching system with clear hierarchy and reasonable knowledge structure. At the same time, the experimental teaching team also strives to improve their professional quality through thematic discussion teaching activities, open class lectures, and outdoor learning.

5.2 The construction of curriculum resources.

In the summer of 2016, our school opened a new MOOC teaching mode with the help of a new generation of Internet self-learning platform called “Youku Online”. After two months, the teachers

of the computer public department have completed the online education resources of the university computer basic courses. The resources include course introduction, course assessment criteria, teaching plan, video teaching and experimental operation. This course is composed of two textbooks and experimental instructions edited by four teachers, which are divided into seven chapters. Seven teachers make the course plan, video demonstration and chapter test according to the chapters respectively. The teaching assistant assists the teachers to complete the post-production, modification and experimental teaching environment preparation of the course chapters.

5.3 Teaching process.

(1) A teacher will give a general lecture on the course, introduce the teaching system and knowledge system of the course to the students in an all-round way, put forward the learning task for the students in each chapter of the course, let the students think independently first, study independently through the textbooks, the Internet and the learning platform of the course, and ask the students to follow Finish the course learning task.

(2) After entering the learning process of each chapter of the course, each chapter is instructed by the teacher to guide the students'classroom learning tasks, monitor the students' online learning, assess the students'learning tasks and evaluate the learning tasks. Teachers initiate the process of supervising, testing, assignment submission, on-line interaction and experimental operation of students'learning tasks through the management end of the learning platform.

(3) Students can study independently, receive learning tasks, explore and study independently, complete learning tasks, communicate and interact online, and submit task assignments in the laboratory or dormitory environment where they can log on to the online learning platform.

(4) Teachers supervise and review the students'accomplishment of tasks and initiate new tasks for the next stage of learning.

(5) Teachers plan 1-2 weeks'training time to further strengthen students' computer practice ability by collecting students'learning progress in the course platform. After completing the experiment task, the students submit the practical operation task to the teacher through the “Mogao” platform.

(6) Teachers can calculate and monitor the progress of students'learning tasks, evaluate the learning quality and effect of each student, and give the results of students' task evaluation through the management interface of the learning platform.

5.4 Teaching process monitoring.

Because the teaching environment of this course mainly depends on the “Mu-class” learning platform, students are required to login to the “Mu-class” learning platform for task learning and task completion in the teaching process. Based on this, teachers can monitor students' learning process comprehensively. In the course of teaching, after the teacher initiates the learning task to the student, the teacher can track the student's learning situation comprehensively through the course platform management interface of “Mu Course”. For example, the progress time of students'study, the online homework test, the interaction of students, the completion of students' tasks and the submission of homework.

5.5 Teaching effect and evaluation.

Through the “task-driven + mu-class” learning mode, students have more flexible learning time inside and outside class, improve the students'willingness and efficiency of independent learning, students have achieved good results in experimental operation. According to the online questionnaire survey data of the “Mu Course” learning platform conducted by the school administration department, 98% of the students think that they have a clearer knowledge system of the basic computer courses in universities through this learning method; 100% of the students think that they have mastered the practical operation of Word 2010, Excel 2010 and PowerPoint 2010; 100% of the students think that they have mastered the practical operation of Word 2010, Excel 2010 and PowerPoint 2010. Learning that through the course of learning, computer application ability has been greatly improved; 100% of students believe that the use of “task-driven + mu-class” learning mode than the traditional classroom teaching laboratory teaching and after-class

experimental operation mode can improve their learning ability and learning efficiency.

6. Conclusion

Based on the teaching mode of “task driven + Moore”, the combination of teaching and learning is realized. Through the organic integration of teaching ideas and information technology, the use of driving thinking and the Internet platform, reflecting the concept of student-oriented teaching. [6] Through the practical application of this teaching mode in college computer basic teaching, it not only promotes the improvement of students'self-study ability and practical ability, but also promotes the improvement and accumulation of teaching efficiency and experience of teaching team. In the next step, we will focus on the content of college computer basic textbooks, develop and expand the chapters of knowledge system for the new laboratory teaching mode, constantly meet the students'innovative and personalized needs, and further play the exemplary effect of this teaching mode.

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