



Research and Practice of Autonomous Learning and Evaluation Mode Based on Mobile Client

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Abstract: This article focuses on the exploration and construction of a mobile online autonomous learning and evaluation model, and on the cultivation and guidance of students' autonomous learning methods and abilities, to complete the construction and optimization of formative evaluation. The basic teaching of computer application in the freshman year is the experimental object and content, and the experimental and control groups with strict variables are built to carry out a comparative analysis, discussion, and in-depth exploration through experimental research on how to build a mobile and autonomous learning and evaluation model with perfect content and structure, to promote better online teaching of various majors in the school and improve autonomous learning and evaluation models.

Keywords: Mobile Online Learning; Autonomous Learning; Evaluation Mode

The essence of the autonomous learning model is to require students to master the methods of autonomous learning, emphasizing the subjective study of student learning from passively accepting knowledge to autonomous thinking and learning, knowing what they need to learn, what to learn, how to learn, etc. The evaluation mechanism of learning has also changed from the evaluation of students to the evaluation of participation and thinking of students and teachers. It is particularly important that more objectivity is reflected in the evaluation process. In the process of students' self-directed learning and evaluation, teachers are more responsible for guiding and correcting students' self-directed learning methods and participating in the evaluation process. With the development of mobile Internet technology, students' independent learning relies more on the mobile terminal's independent learning platform and resources, such as mobile phones, tablets and other mobile devices for independent learning. Based on this, many colleges and universities began to actively explore hybrid teaching, attach importance to students' online self-directed learning, actively explore to build a complete and reasonable self-directed learning plan, content, methods and feedback system, and try to build a comprehensive objective learning evaluation information system to informalized the teaching evaluation, result analysis, queries and other works to be more authenticity, and objectivity, based on mobile client's autonomous learning and evaluation mode. These methods to a great extent help students develop correct autonomous learning habits, master more efficient learning methods, and use online evaluation, feedback and other mechanisms to further help students learn and grow independently.

1. Experimental research based on mobile client autonomous learning and evaluation mode

1.1 Experimental object, content, and preparation

In this experiment, two parallel classes in the 2018 undergraduates of the same major of our school are selected as the experimental object. Class A is the experimental group, that the class starts from the next semester; Class B is the control group that the class starts from the first semester of freshman, with both classes have more than 100 students.

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This experiment is based on the self-learning and evaluation of the computer application basic courses in the first year of the two classes. The mobile-side autonomous learning, evaluation model construction and experimental comparison are carried out.

During the experiment, both classes used the same textbook, and the same teacher conducted the same classroom teaching. The teaching software and content used in classroom teaching were basically the same. Before the experiment, combined with the actual situation of the basic learning of the computer application of the experimental object, the autonomy of the two groups of students was tested by the autonomy detection scale. The test was conducted under the principle of truth and comprehensiveness, with good reliability and validity. The final evaluation results show that the students with better autonomous learning ability in Class A and Class B account for about 25% and 24% of the class respectively, and the general standard for autonomous learning ability is about 41% and 43%, respectively. The students with poor overall ability in autonomous learning accounted for 34% and 33%, respectively. It can be seen from the data that the self-learning ability of the students in the two classes is almost the same. The analysis of the specific projects shows that students with average and poor autonomy also perform weakly in terms of autonomous learning awareness and methods.

After the evaluation, the experimental subjects were selected as freshmen or two semesters as the experimental time. During this period, there were a total of 40 hours of computer application basic courses. The main teaching content included the theoretical basis of the 16 hours of VB programming language and 24 hours of programming practice. During the experiment period, Class A adopts the natural course teaching and evaluation through the mobile software evaluation system, including guiding students to use university MOOC teaching resources as supplements. Most of the common operations are completed in the mobile software. In order to reduce the component of teachers' subjective participation, the check-in and mid-term test part of which is directly given statistical results by the mobile terminal. After class, students need to complete the discussion of various teaching-related knowledge points assigned by the teacher. Class B adopts the traditional independent learning model and rating system. It is mainly the formative evaluation by the instructor according to the average performance and homework completion, which is the so-called ordinary score. Self-study in spare time is facilitated by the assignments and discussion questions arranged by the teacher, mainly completed by the students themselves.

1.2 The content and results of the experimental implementation of the independent study and evaluation of the students in the control group

In order to ensure that the control group obtains better teaching results in a natural state, in addition to classroom teaching, teachers assist students to conduct extracurricular learning in the traditional way, and establish corresponding autonomous learning systems to help students master autonomous learning methods. However, under the traditional model, because of the large number of classes and the different situations of the students, teachers have difficulty in taking care of every aspect of each student's learning. They can only use the time of practice to arrange as many specific experimental contents as possible to improve students' hands-on practical ability.

In order to ensure the validity of the evaluation and follow the principle of unique variables, the control group also tried to use a formative evaluation method to conduct comprehensive evaluations such as self-evaluation and mutual evaluation of the formation of students' independent learning after each class. The content of students' participation, self-learning knowledge and related extra-curricular competitions are evaluated, as well as classwork and mid-term tests.

1.3 Experimental implementation content and results of students in the experimental group for independent learning and evaluation

The autonomous learning model of the experimental group is mobile online learning and evaluation. Therefore, according to the self-learning situation of class A students before the experiment, reasonable learning, content, methods and evaluation modes were formulated and presented through the mobile client. The teaching materials and course progress adopted by the experimental group and the control group are roughly the same, so the learning content of autonomous learning is basically the same, mainly the theoretical knowledge learning and programming practice exercises. The difference is that students use mobile software for autonomous learning and online group work with real-time and

detailed record and update of students' independent learning progress, content, plan completion, etc., The main part of formative evaluation is directly exported by mobile software, and daily check-in, group discussion, mid-term test and other results account for the in-process assessment.

The evaluation process such as exams also adopts an online model. Students complete the qualitative evaluation through electronic test papers and use mobile software to perform the main formative evaluation. The basic composition of the evaluation is the same as the control group, but the evaluation content and process are informalized by software evaluation. The system records and evaluates the two aspects and students' self-directed learning. The data is operable, which is convenient for teachers to analyze the specific experimental conditions according to their needs.

2. Practice results, analysis and discussion

2.1 Practice results

According to the results of the autonomous learning evaluation test, the following conclusions are drawn: (1) There is a significant difference in autonomous learning between the control class and the experimental group. The experimental group's overall learning performance and autonomous learning attitudes and abilities are greatly improved. The number of people who achieved the standard reached 92%, while the proportion of the number of people who achieved the standard in the control group increased to 75%; Perfect application is very important for students to develop self-learning awareness and ability, and online self-learning and evaluation models provide students with a more convenient, efficient and comfortable learning platform and environment.

2.2 Discussion and analysis of practical results

Through the construction and application results of the mobile self-learning and evaluation mode of the experimental group, it can be found that the self-learning platform is closely related to the curriculum teaching and student conditions in terms of content, learning plan, method and related evaluation with good validity. In contrast, the control group that using a more robust autonomous learning and formative model, because of the traditional book learning, paper evaluation, oral guidance and other methods has not obvious final reform effects. It can be seen that the self-sufficient learning and evaluation mode of the mobile terminal can have a better teaching effect.

3. Conclusion:

In summary, through comparative experiments, we found that mobile-based autonomous learning and evaluation models can promote students to better enhance their cognitive depth and learning ability for autonomous learning, and the conclusive online platform provides students with more efficient Accurate autonomous learning is an important factor to improve the efficiency and quality of students' autonomous learning. In the experiment, the teacher group adjusted and optimized the self-learning content and planed in a timely manner through the students' autonomous feedback and online platform data analysis, finally achieved good results, making the model more complete and better guiding students to promote students to improve their initiative, practical ability and innovation ability.

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