Discussion on the Reform of Classroom Teaching Mode Based on Information Teaching Platform

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Abstract: Classroom teaching is the main way to cultivate students and spread knowledge. The deep integration of information and teaching has injected new impetus into the reform of classroom teaching mode. This article firstly expounds the necessity of the reform of the classroom teaching mode and clarifies the purpose and significance of the reform. Secondly it analyses the characteristics of the current information teaching platform which provides the basis for rational use. Finally, it expounds the reform of the classroom teaching by using the information teaching platform from three aspects: the formulation of the evaluation standard of the classroom teaching, the comprehensive application of the information teaching platform and the improvement of the data-based teaching process evaluation. The experience and practice can provide reference for the reform of similar classroom teaching mode.

1. Introduction

Classroom teaching is the central position of personnel training and knowledge dissemination. The traditional classroom teaching mode mainly focuses on teachers' teaching to achieve the purpose of knowledge transmission through the explanation. With the rapid development of the Internet the amount of information shows an exponential growth trend and the channels for students to acquire knowledge are increasing. Traditional teaching with teachers as the leading role can no longer meet the needs of students to acquire knowledge. Therefore, the reform of classroom teaching mode is imperative.

The information teaching platform is a kind of online course platform based on network, computer and other technologies. It provides a new means for the dissemination and sharing of knowledge by establishing a learning management system and using the system to release resources. It is necessary to integrate the information teaching platform into classroom teaching to play its advantages and effectively improve the quality of classroom teaching.

This paper summarises our practice and experience in the reform of classroom teaching mode of computer application course. Firstly, it expounds the necessity of promoting the reform of classroom teaching and clarifies the purpose and significance of the reform. Secondly it analyses the classification and characteristics of the current information teaching platform which provides a basis for rational selection and use. Finally, it expounds the reform of the classroom teaching by using the information platform from three aspects: the formulation of the evaluation standard of the classroom teaching, the comprehensive application of the information teaching platform and the improvement of the data-based teaching process evaluation. The reform of classroom teaching has achieved positive teaching effect.

2. The Necessity of Classroom Teaching Mode Reform

Classroom teaching is a teaching activity that teachers and students carry out around the course in the classroom. The purpose is to let students master knowledge, exercise ability and cultivate quality. In recent years, the Internet and the mobile Internet are becoming more and more popular.

The convenient network conditions and rich network resources have a double impact on classroom teaching. On the one hand, the channels for students to acquire knowledge are greatly widely, they can obtain the resources at any time, improve their self-study ability and alleviate the problems of students' ability differences and lack of class hours. On the other the rich Internet resources also distract the students' attention. Mobile phones have become the necessities of students' life. Students only bring mobile phones into the classroom, "bow headed group" and "finger control" have become common phenomena in the classroom which seriously affect the classroom teaching order and teaching quality [1].

Therefore, teachers should play the role of the Internet and information teaching platform in promoting teaching, find ways to solve the problems existing in classroom teaching and effectively carry out the reform of classroom teaching mode.

First, we should adapt to the information teaching reform and change the concept of education and teaching. The outline of national medium- and long-term education reform and development plan (2010-2020) points out that "teaching is the primary content of teacher assessment". With the development of national information level the information and networking of teaching ability are inevitable [2]. Teachers must change the concept of education and teaching, actively participate in the innovation of classroom teaching mode, boldly explore the integration of information teaching platform and classroom teaching, master students' learning situation and make more contributions to our teaching.

Second, we should cultivate students' active learning ability. In the age of the Internet all resources are transparent and shared. Students can find the answer as long as they want to find them. Therefore, in classroom teaching we must focus on revealing the law of knowledge formation and cultivate their thinking ability, cultivate the ability of reading materials and content integration, encourage students to find and solve problems actively and promote the whole learning ability in the spiral process of thinking and solving problems.

Finally, we should activate the silent classroom and arouse the enthusiasm of learning. At the present stage, the phenomenon of teachers' teaching according to the book, students' not active listening and low participation still exists in the university classroom. In classroom teaching, teachers must pay attention to what students have learned and how well they have learned and find ways to stimulate students' interest in learning, improve students' attention to classroom teaching activities and actively participate in classroom teaching activities. Teachers' teaching and students' learning should resonate and create a harmonious and active classroom atmosphere to complete teaching tasks with quality and quantity guaranteed.

3. Classification and Characteristics of Information Teaching Platform

At present more information platforms are used in teaching including network teaching platform and teaching software.

3.1 Network Teaching Platform

The network teaching platform include the MOOC and SPOC. MOOC is a large-scale open network course based on the Internet, multimedia, big data and other technical means. SPOC is relative to the MOOC and customises for specific groups such as students in school [3].

Figure 1 is taking the MOOC as an example to illustrate the relationship between teachers and students when using the network teaching platform.
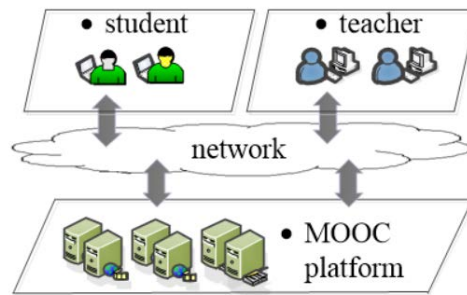
Figure 1 The relationship between teachers and students in MOOC.

MOOC platform provides online management and operating environment for courses. A course is divided into several independent knowledge points which are centred on micro-video (5-10 minutes) and equipped with test questions, discussion questions, reference materials and so on.

The MOOC platform creates a home page for each course as an interface with the platform. The teachers publish the course resources to the MOOC platform through the interface. After the opening of the course MOOC platform also provides online communication, examination, learning evaluation and other functions for the teachers.

Students access the MOOC platform through the Internet to complete the registration, learning, licensing and other works. Students learn flexibly to complete a course or choose to learn part of the content or even a knowledge point. There is back-to-back online communication between the students and the teachers.

3.2 Teaching Software

"Rain classroom" and "Super-star learning" are now in common use. Such software is easy to install and operate and is suitable for the use of computer and mobile phones. The teaching software are widely used in universities. Figure 2 is the relationship between teachers and students when using "Rain classroom" teaching software.
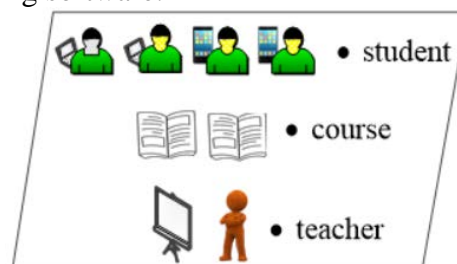

Figure 2 The relationship between teachers and students using teaching software.

"Rain classroom" is an intelligent teaching solution developed by Tsinghua University. The computer end of "Rain classroom" integrates teaching tools into PowerPoint. Teachers can insert choice questions, fill-in-the-blanks exercise and subjective questions into PPT for testing. Functions such as random roll call, on-site test, histogram display of test questions and answers provide the many methods for classroom teaching [4].

The teachers talk with students face to face when using teaching software. The teaching process is completed under the guidance of teachers. The real-time feedback of classroom situation can let teachers know what students are doing and how they are doing. It can also provide support for teachers to adjust teaching strategies and teaching contents.

4. Some thoughts on the Reform and Practice of Classroom Teaching Mode

4.1 Setting up the Evaluation Standard of Classroom Teaching

Classroom teaching based on information platforms presents a new form. The transformation of teachers' and students' tasks and roles makes the evaluation standard of classroom teaching to be further improved. Based on retaining the evaluation methods of supervision scoring and students'

scoring the following three elements are added:

The first is classroom participation: the enthusiasm of students' participation in classroom activities indirectly reflects the differences between teachers in teaching organisation and teaching methods. Teachers with strict teaching organisation and flexible teaching methods naturally have a high degree of classroom participation. Otherwise it is not. Class participation is a quantitative index which can be evaluated according to the number of students who have completed the preview questions, in-class tests and after-class exercises.

The second is the quality of curriculum report: according to the questions or requirements assigned by the teachers, the students can independently search for materials and complete the curriculum report after class. This indicator reflects the students' attitude towards classroom learning. Whether to finish or deal with the work seriously depends on the gold content of the tasks assigned by the teachers. Qualitative and quantitative methods of course report quality evaluation can be used. Qualitative evaluation methods include whether the report topic is practical and whether it promotes students' ability to investigate, research, summarize. The quantitative evaluation methods include the number of publishing papers, applying for patents, or participating in competitions.

The third is the quantification of learning atmosphere: the purpose of classroom teaching is not only to impart knowledge but also to teach students the truth of how to behave. Teachers' behaviour has a subtle impact on students. Teachers should use personality charm to infect students so that students can change their lazy learning attitude from the heart and form good learning habits. It is difficult to evaluate this index which can be implemented by students and teaching managers.

4.2 Integrated Application Information Teaching Platforms

Different information teaching platforms are applied to play their advantages in classroom teaching. Figure 3 is application of the information teaching platforms in classroom teaching [5].
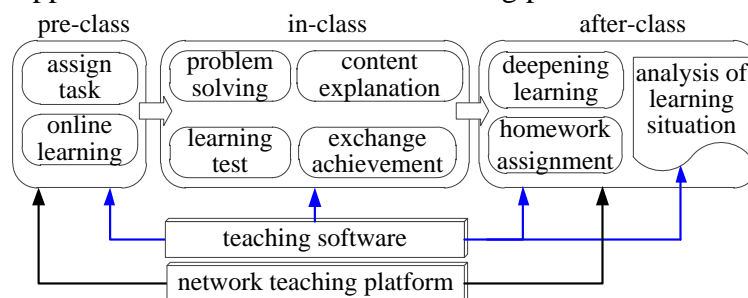

Figure 3 The application of information teaching platforms.

The network teaching platform is used in pre-class and after-class. In the pre-class students study on the network teaching platform to complete the preview tasks. In the after-class it is used to deepen the understanding or expansion of the classroom content [6].

The teaching software is used in the whole process of classroom teaching. Pre-class tasks are arranged before class and homework is arranged in after-class. For example "Rain classroom" can release pre-class courseware with voice and also publish test questions. The teacher can check the number of students in pre-class and the answering questions.

No matter what kind of information teaching platforms is used, teaching in class is an indispensable link.

The organization of in-class lessons is closely related to the content of the course and the preview requirements. The preview content is a project-type topic, such as completing software programming, project design and development. When teaching in the classroom the students can first communicate the results and finally the teacher can summarize and explain the common problems. The pre-preview content is to test the knowledge points in self-study textbooks, such as prior knowledge, common sense content, simple concepts. In-class lectures are led by teachers, and the content of the preparatory content is taught in-depth gradually. Teachers should make full use of the various functions of teaching software to mobilise the enthusiasm of students. For example the

barrage can be used for the discussion and feedback of simple problems, the field test can set the test time and the field score.

4.3 Improving the Evaluation of Teaching Process Based on Data

Based on the information teaching platform learning tasks and difficulties increase and students' learning extends from in-class to before and after class. Teaching software such as "Rain classroom" can generate statistical charts to analyse the following situations:

Students' completion of preview and review tasks: number of students who open courseware, watch courseware and take test.

Students' participation in teaching activities in-class: number of students arriving in-class, answer questions in-class and early warning for students who are not active or whose test scores are not ideal.

These data quantify students' learning trajectory and provide objective evaluation basis for teaching process. According to the chart data teachers can understand students' learning state and learning level and effectively regulate the teaching process. Students understand the gap between themselves and other students according to their learning data and encourage their internal learning motivation in comparison. According to the chart data the teaching manager understands the teaching state in real time and explores a more scientific and reasonable teaching mode.

5. Conclusion

In the past three years we have carried out a comprehensive reform of the classroom teaching mode of computer application professional and taked the advantages of MOOC and "Rain classroom". We have practiced a variety of teaching modes such as flipped classroom, split classroom and hybrid classroom. This teaching mode has achieved effective results. In the process of exploration and practice we also realised that the reform of classroom teaching mode involves many factors including teachers, students and teaching managers. Reasonable management strategies, active teachers' practice and students' conscious cooperation can really improve the quality of classroom teaching.

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