

Research on the Blended Teaching Mode Combining Micro-Courses—Taking the Course of Basics of Web Design as an Example

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Keywords: Micro-courses, Web design, Teaching mode.

Abstract. With the development of informationized education reform, combining micro-courses with traditional college education becomes the trend recently. In this paper, the course of Basics of Web Design is taken as an example for analyzing the current situation of teaching. The importance of the reform of teaching mode is explained. Then teaching mode of micro-courses and the blended teaching mode are compared. The advantages of blended teaching mode are summarized. Furthermore, the implementation of the blended teaching mode of the Basics of Web Design course is discussed.

Introduction

With the continuous development of technology, all kinds of new teaching mode are constantly challenging the traditional college education. The concept of "micro-course" was first proposed in China in 2011[1]. Micro-courses are widely accepted due to its advantages like flexibility, brevity, interactivity, applicability and its prominent theme. It spread rapidly as a new type of resource for educational information. For students, micro-courses can better complement their knowledge obtained in the classroom, and effectively promote students' independent personalized learning skills [2-4]. For teachers, they are able to choose the suitable educational mode and put more effort into helping students solve problems. As far as the discipline is concerned, teachers and students can be liberated from the complicated and repeated teaching and experimental tasks, so that teachers and students can better focus on the development of the discipline. Therefore, the development of micro- courses has brought more space to the education method in the future.

Current Teaching Mode of the Course of Basics of Web Design

The course of Basics of Web Design is a compulsory basic course for undergraduate students in major of digital media technology. Basic knowledge and practical operation of HTML, CSS and Javascript are contained in this course. Traditionally, the teaching of this course is mostly based on teacher's theoretical interpretation and students' practical exercises with the help of individual counselling by teachers.

The complicated operating procedures and the enormous quantity of code bring problems to the course with limited class hours and large number of students. It's difficult for teachers to carry out comprehensively counselling with every student. Therefore, there is a great challenge for students to acquire knowledge and learn how to use the knowledge through classroom learning. This may leave accumulated problems to students in the classroom. Students may lose the confidence and interests to learn or cannot keep up with the progress of the course. It's not conducive for students' ability of independent learning and innovation.

Comparison between Micro-courses and Blended Teaching Mode

Micro-Courses Teaching Mode and Blended Teaching Mode

Micro-course is a kind of online course. Compared with the traditional courses, The obvious features of teaching design in micro-courses are oriented to a wider range and larger scale of teaching objects. The teaching module of micro-course is usually clearly divided. Each teaching module often consists of several microvideos in length of 5-15 minutes. And each microvideo contains one or two knowledge points, which is convenient for students to learn independently and repeatedly.

For blended teaching, Kekang He believes that blended teaching need to combine the advantages of traditional-learning with those of network-learning methods. Teachers can play the leading role for guiding, enlightening and monitoring in the teaching process, and should excavate students' enthusiasm and creativity [5-7]. Therefore, besides making changes in teaching form, blended teaching is more focused on the understanding of needs of students. As a result, better teaching and learning effects can be achieved as long as making full use of the complementary advantages of different teaching modes.

Deficiency of the Teaching Mode of Micro-Courses

(1) Lack of effective communication with teachers

Students can meet different questions during the learning process. It may lead to a significant impact on learning when the teacher's answer have a time delay in online micro-courses. While traditional teaching mode has its greater advantage in this respect. Teachers and students can communicate directly, face the problems together, and solve them more efficiently.

(2) Inadequate resource support

In order to achieve good learning effect, micro-courses need special tutors and specified mechanisms to provide tracking and mentoring services to online students. However, without the support of professional team on micro-courses, most micro-course resources must be completed by teachers themselves. It is difficult for a single teacher to complete all the works including platform construction, recording, post-editing, maintaining, and release of the course video. It's more difficult for teachers to spend enough time on tracking and coaching students' learning effects.

(3) Insufficient exercise in practical skills for students

The course of Basics of Web Design particularly focuses on the operational skills of students. Although micro-course teaching mode has great superiority in better understanding of knowledges for students, practical operation and exercises are difficult to complete online. Without a certain amount of practical operation, it is difficult for students to master operational skills. Furthermore, it is difficult to train the talented person combining theory with practice skills.

(4) Difficulty of effective study supervising and managing

At present, the lack of effective offline supervision mechanism can easily affect make the teaching and learning effect, which basically rely on the learner's self-restraint and interest.

Advantages of Blended Teaching Mode

(1) More flexibility in switching the teaching and learning modes

Blended teaching mode allows students to choose not only can study online in their own time, but also can follow their teachers in class. Students can choose freely to participate in the two learning modes independently. It offers greater learning flexibility to students for different knowledge considering their different understanding and mastery.

(2) Human-based way in talents training

It is not all the same in learning style or learning habit for each student. Some of students prefer to be guided by the teachers in classroom while the others prefer to learn by themselves. A significant characteristic for blended teaching mode is to teach in accordance with students' aptitude. Under the support of the two teaching modes, teachers can better understand the learning characteristics and habits of students, and carry out teaching counseling more reasonable.

(3) More scientific way of assessment and evaluation

Relying on the learning data of the online curriculum platform and the offline learning environment, the blended teaching mode can offer a more comprehensive teaching feedback. It avoids teachers to evaluate students only rely on impressions subjectively. The assessment method of the curriculum is more scientific and reasonable.

(4) More possibilities to improve teaching quality due to resource sharing

A growing number of micro-courses and platforms are available for teachers to choose the resources according to their own needs. Abundant online micro-courses resources of famous schools can assist the teachers carry out the blended teaching mode, which brings more possibilities for improving the quality of teaching.

Teaching Design of the "Basics of Web Design" Course in Blended Teaching Mode

Pre-Class Guidance before Class

Pre-class task guidance is an important part of blended teaching mode, which is the basis of all the teaching links.

Teachers need to carry out task analysis according to the curriculum training objectives and develop the content of the pre-class guidance. The excellent learning resources can be well organized and then introduced to the students. Students can arrange their learning plans before class to preview the lesson content briefly and learn the aim and main tasks to prepare for the course to be carried out. It is conducive to establishing students' confidence during learning.

Take the knowledge module "CSS Box Model" in the "Basics of Web Design" course as an example, there are several key points which need to be learned:

- a. The concept of a box model. It includes the width and height of page elements, padding, border, and margin.
- b. The calculation of the box model. The space occupied by the page elements should actually be the sum of the width and height, padding, border and margin.
- c. Explanations of box model resolution of block-level elements and inline elements.

The pre-class guidance of this part can be illustrated with more vivid video or animations in order to help students understand the spatial concept involved. It is more conducive for students to calculate the box model when building the webpage structure by means of guiding the students to build a sense of space of webpage elements. In addition, several box model calculation tasks can be assigned to guide students to think deeply about the calculation of box model in a task-driven manner.

Learn through Problem Solving During Class

Main purpose of learning in class is to review the key points and solve the difficult problems left by the pre-class guidance stage. According to the students' completion of the pre-class guidance, the teacher can design the content of the lesson and problems that need to be solved. Initiative of learning of students could be mobilized by guiding the students to participate in the discussion of the problems. After that, the teacher can focus on explanation of the solution of the problems combining with key points, which can help students complete the internalization of the related knowledge.

Take the knowledge module "CSS Box Model" in the "Basics of Web Design" course as an example: Students may have questions or face operational errors during pre-class guidance. The teacher can collect and summarize these questions in time, then select several typical questions for students to discuss in the class. The key points of related knowledge can be integrated in the answers, solutions, and explanations. For example, box models often result in numerical calculation errors during setup due to misunderstanding of concept. As a result, the page element structure would drop due to lack of space. The key solution is to understand the concept of total width and height of the box model. Therefore, it is a convincing way for teachers to help students to learn the calculation method of box model through the specific cases of students.

Expand training for Consolidation after Class

The course of Basics of Web Design is a course that pays great attention to practical practice. A large number of expansion training after-schools are necessary to consolidate the key points of the class. However, considering the irregularity of students' abilities, teachers need to set up expanding training programs with multiple levels of difficulty. Students can overcome these challenges according to their own abilities. Meanwhile, corresponding bonus system could be established to promote students to actively finish the programs with higher level of difficulty.

Take the knowledge module "CSS Box Model" in the "Basics of Web Design" course as an example: Calculation of block-level elements is relatively simpler for box model. Students face more difficulties in calculation of the inline element with the box model. Thus, more training is needed to be expanded to help students understand the possible problems during resolution of inline elements of the box model. For further understanding improvement and application, students also need to learn how to master the way to convert the block-level and inline elements with each other in the specific situation in order to conduct better calculation of box model. For these learning requirements, the ability to apply the box model for students can be trained by setting up more complex code scenarios based on demand.

Assessment Regulated with More Reasonable Weight

Effective regulatory restraint mechanism is an important factor for guarantee the learning effect. In the blended teaching mode, the supervision should include both "online" and "offline" assessments, such as attendance, homework, classroom interaction, operation, etc. for "offline", and visits, views, online questions, etc. for "online". The appraisal projects should be materialized and detailed. And reasonable weight could also be considered. It can be a good way to improve the students' learning initiative. Furthermore, the assessment is more objective and scientific, and the quality of teaching can be greatly improved.

Conclusions

With the help of the Internet technology, blended teaching mode which combined with the "micro-course" conforms to the reform requirements of undergraduate education in colleges and universities. Blended teaching mode not only embodies the leading role of teachers in guiding, enlightening and monitoring in the teaching process, but also fully reflects the enthusiasm and creativity of students as the main role of the class. It has played a significant role in promoting the deep integration of informational and traditional teaching mode, and in improving the teaching quality of the "Basics of Web Design" course. It is a long-term project about promoting the blended teaching mode more effective and improve the quality of teaching, which needed to be further explored and studied constantly.

Acknowledgement

This work was supported by the Project of Research on Reform of Education and Teaching in Colleges and Universities in Hainan Province (No. Hnjg2016-45) and Project of Quality Improvement of Vocational Education in Hainan Province 2019, which is gratefully acknowledged.

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