Blended Teaching Design in Higher Education Based on SPOC

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Abstract. In the context of the new crown pneumonia epidemic, based on the advantages of the Internet platform, universities have opened a hybrid teaching mode that combines online teaching and classroom teaching. This hybrid teaching refers to a new learning mode that combines real situational learning and online distance learning in the traditional classroom to achieve complementary advantages. Facing the shortage of massive open online courses (MOOC), this paper selects SPOC, a small-scale restricted online course, as the main online teaching mode, and builds a hybrid dual teaching system for higher education by combining it with traditional classroom teaching, starting from three aspects: pre-class preparation, in-class observation and post-class evaluation. Through online and offline small-scale hybrid teaching, it helps students and teachers to achieve efficient, innovative and personalized teaching and learning in higher education and enhance students' learning ability by making full use of the advantages of the Internet platform.

Keywords: SPOC · higher education · blended learning

1 Introduction

In the background of the Internet, along with the emergence of the new crown pneumonia epidemic in 2020, the traditional classroom teaching method has been unable to fully meet the real teaching needs of schools. In order to meet the requirements of learners who want to continue learning in the current environment, online teaching based on the "Internet+" platform has gradually become an important teaching mode based on offline teaching, although online teaching has solved the current teaching dilemma and gradually formed a hybrid teaching mode of universities combining traditional classroom teaching and online teaching.

In the face of the new development trend, we have to have a new research direction, so we start from the hybrid teaching mode of online teaching combined with traditional teaching, make full use of the "Internet+" platform, choose a SPOC Small Private Online Course (SPOC) different from the Massive Open Online Course (MOOC) [1], and analyze and discuss with relevant survey data to build a hybrid teaching mode to provide reference for the development of teaching in higher education.

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2 Constructing a Hybrid Teaching System of "Assessment, Set Questions and Task"

To build a blended teaching design based on SPOC, it is important to establish a set of "complete and rich, diverse and complementary, integrated and creative" teaching system, which requires the following steps, as shown in Fig. 1.

2.1 Assessment

Clarify the first concept of "assessment". As a measure of students' psychological and cognitive structure, "evaluation" is a key part of "closed-loop teaching and learning" and is an important link between "teaching" and "learning." It includes forms of achievement assessment, attitude assessment, activity assessment, and paper-and-pencil test assessment. Teachers should not only analyze students' learning in chunks and chains, but also provide personalized diagnostic and evaluative guidance for students' individual development.

The online assessment based on SPOC should, on the one hand, incorporate the real needs of students and, on the other hand, build a teacher assessment system with four assessment points: cascading, gradient, integration, and value-added. It is important to emphasize the process factors of student development, to include the existing foundation and development level of students in the evaluation criteria, and to develop a unique "online + offline" dual evaluation program for students to achieve the goal of high-quality development of each student [2].

2.2 Set Questions

The second concept is "proposition". There are two types of questions - daily exercises and large paper-and-pencil exams. The former is designed to standardize and test students' learning outcomes in a short period of time. Their role is to diagnose students' academic level, provide them with immediate value, and increase their motivation and intrinsic drive. The latter refers to the rigorous specification of the questions asked. The main processes include: designing a blueprint, forming a team, dividing and collaborating, assembling the paper, sharpening it, discussing the scoring criteria, determining the scoring parameters, and monitoring the quality of scoring.

In order to optimize the design, the setting of propositions should consider the combination of overall propositions and individual propositions. First of all, the design of

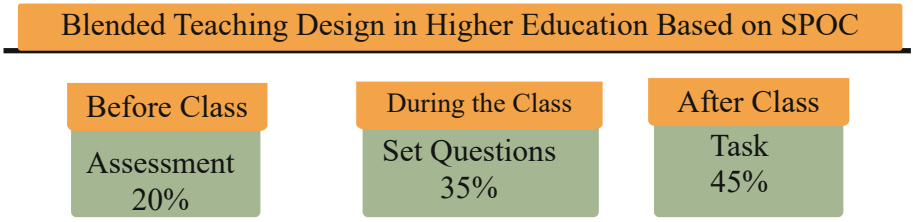

Fig. 1. "Assessment, Set questions and Task" hybrid teaching model

online propositions should reflect the wholeness of content, diversity of functions and comprehensiveness of subjects. Secondly, the design points of offline propositions should focus on problem-driven, interactive teaching and inquiry learning. At the same time, the implementation of propositions should ensure accurate diagnosis, timely feedback and moderate difficulty, so that the breakthrough of propositions always runs through the whole process of blended teaching.

2.3 Task

Clarify the third concept, namely "homework. As an important link connecting before, during and after class, "homework" also serves as a transition and connection between online and offline teaching in the blended learning process." The scope of "homework" is very broad, including pre-course prep, classroom homework, post-course practice, unit assignments, stage tests, and even project learning for cross-period learning. Therefore, homework design needs to cover both the process evaluation of online teaching and the summative evaluation of offline teaching, integrate the learning situation, teaching objectives and evaluation concepts into homework design, improve the connection of all teaching elements, and help students learn effectively.

On the other hand, homework in the curriculum perspective, represented by the relevant teaching ideas of Dewey, Taylor, Bloom and others, considers homework not as the "tail" of teaching, but as an important part of achieving curriculum goals. This is equivalent to elevating the functional value of homework to the same position as teaching, which is the biggest difference in the view of homework in the curriculum [3].

3 Define the Objectives of the Exam

Establishing clear examination objectives is both a prerequisite for homework setting. It is also the lubricant of a hybrid teaching system. Here, Anderson divides the objectives into six levels from the cognitive dimension: memorization, comprehension, application, analysis, evaluation, and creativity [4]. In turn, from the knowledge dimension, it can be divided into four levels: metacognitive knowledge, procedural knowledge, conceptual knowledge, and factual knowledge. When designing assignments, different levels of objectives are used to match different types of assignments, and the differences in knowledge among the four levels are used as criteria for classifying the types of assignments, as shown in Fig. 2.

4 Standardize Assignment Design

4.1 Pay Attention to the Progressiveness of the Assignments

Assignment design needs to follow both "progressive integration of content" and the theory of the nearest developmental zone. First, units are identified based on the content organization of the course, then, the key concepts of the unit are identified and the hierarchy between them is clarified. Finally, assignments are classified and designed by drawing on Bloom's classification of teaching objectives, as shown in Fig. 3.

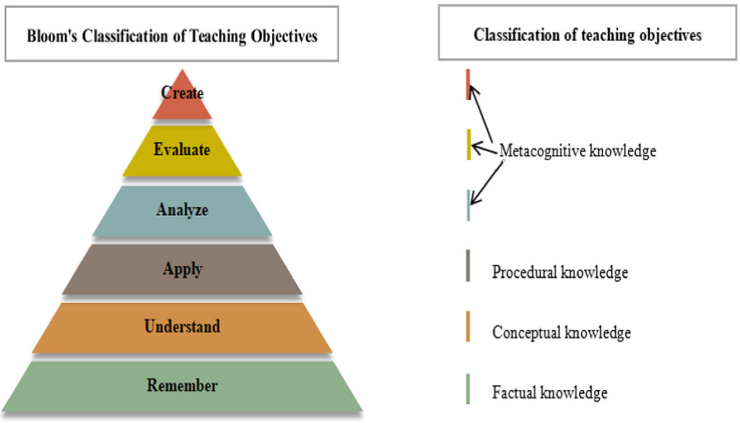

Fig. 2. Examination Objective Classification

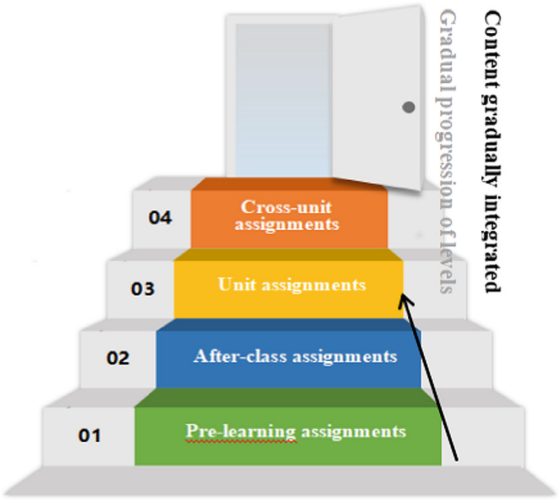

Fig. 3. Assignment design

4.2 Pay Attention to the Directivity and Logic of the Questions

The logic of the assignment lies in the fact that the questions are logically related to the material, the structure of the whole question is clear, each subquestion is progressive, and the logic of the assignment is set with a gradient according to the learning level of students. It is important to establish connections between units, to focus on units containing the same learning content, and to reflect the continuity and progression of the same learning content across unit assignments.[5].

4.3 Pay Attention to the Reasonableness, Precision and Guidance of the Answers

We should think in a "two-way" way about content and literacy, and be "logical" in our questions and answers, realizing that both of them have a guiding role in teaching itself.

5 Conclusions

This hybrid teaching model improves on the shortcomings of the original massive open online teaching (MOOC) based on SPOC, based on small-scale restricted online teaching, combined with the advantages of traditional classroom teaching, starting from evaluation, proposing questions and assignments, to create a new teaching model suitable for students in the context of the current new coronary pneumonia epidemic, helping students to better improve their learning ability and enhance their cognitive ability.

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