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Research on SPOC Hybrid Teaching Reform for Design Majors in the Context of "Internet +"

-- A Case Study of Product Integration and Innovation Design Curriculum

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Abstract

Small Scale Restricted Online Course (SPOC) is a hybrid teaching mode based on the integration of physical classroom and online education after the Large Open Online Course (MOOC), which is an in-depth exploration and effective supplement to the development of teaching reform in colleges and universities under the background of "Internet + teaching". In this study, "Product Integration and Innovation Design" is used as an example, and a hybrid teaching mode based on SPOC is explored and designed using Chaoxing Learning Platform, taking into account both the SPOC course characteristics and the actual needs of teaching reform for design majors in colleges and universities.This study's realization of the SPOC mode's construction through one semester of classroom instruction has improved the way that this course is taught to design majors and serves as a teaching guide for the in-depth development and use of the SPOC mode in design courses at colleges and universities.

Keywords

Internet +; Blended Learning; SPOC Teaching; Product Integration and Innovation Design Curriculum.

1. Introduction

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With the rapid advancement of information technology, the Internet has impacted every part of life and fundamentally altered it. On June 21, 2018, Minister Chen Baosheng advocated "Internet + Education" as a new educational productivity to restructure the delivery of higher education in China and achieve the "overtaking" of higher education quality at the National Conference on Undergraduate Education in the New Era. On June 21, 2018, Minister Chen Baosheng proposed that "Internet + Education" be used as a new educational productivity to reshape the teaching form of higher education in China and realize the "overtaking" of higher education quality at the National Conference on Undergraduate Education in the New Era. A

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huge wave of "Internet +" in college education has begun, and open teaching methods in the new era represented by MOOC have become new favorites in higher education research and practice. The education departments of provinces and cities across the country have issued guiding opinions on promoting "Internet + teaching" in general colleges and universities. The direct implementation of MOOC mode will inevitably result in a number of issues, including difficulty in interaction, failure to ensure the quality of classes, and failure to teach in accordance with the material, which is inconsistent with the elite educational tradition of design universities. Design disciplines are also more practically oriented than other disciplines. As a result, despite the development of digital informationization of teaching, many design majors domestically and overseas continue to favor the conventional teaching method.

2. Hybrid Teaching Reform Concept with SPOC

Professor Armando Fox of UC Berkeley initially presented the idea of Small Private Online Course (SPOC), commonly referred to as "private class," in 2013. Small refers to a small number of students (up to hundreds), and Private refers to a course for on-campus or online students who are restricted by the course's requirements and the course is not open to everyone on a large scale in order to ensure participation and completion rate. SPOC is an open course format that was derived from MOOC.

In comparison to MOOC, SPOC is more suited for design course classroom instruction. Second, SPOC typically only allows university students to participate, which not only can use the online teaching platform for more effective teaching management, improve the efficiency of teaching and learning for both teachers and students, make teaching more relevant and operable, and protect teaching results from teachers and students' creativity from leaking to some extent. For these reasons, this group uses SPOC mode as the preferred teaching mode for this assignment.

3. SPOC-based Blended Instruction in Practice

3.1. The Existing Environment and Issues with Course Delivery

A required course for product design majors is Product Integration and Innovation Design. Students can gain a comprehensive understanding of the whole Product Integration and Innovation Design process with this course, including project conception, research, analysis, and study, as well as creative expression, model creation, and production evaluation. This is a crucial function in developing the skills of future professionals.

The group's examination and analysis revealed four primary issues with this course:

(1) Students' low learning efficiency and lack of excitement for theory study have an impact on their ability to apply theory in practice;

(2) The emphasis of the course is mostly on the instruction of professional procedures; the students lack an exploratory spirit;

(3) The extracurricular activities are not sufficiently developed;

(4) A one-way information flow; a lack of effective management of the learning process for students; 4. a lack of tailored student cultivation design;

(5) A lack of universal teaching content.

In conclusion, there is an urgent need for reform in the traditional design teaching classroom. Based on its own teaching experience in the course of Product Integration and Innovation Design, this study suggests reform and practice objectives in the course design of the SPOC teaching mode, and significantly alters the way the course is taught.

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3.2. Course Objectives based on SPOC Blended Learning

(1) Use "Chaoxing Learning" as a teaching platform tool to enhance instructional strategies and boost efficacy.

We attempt to reform and implement SPOC blended education online and offline in the context of the "Internet Plus" and "Big Data Era" by successfully utilizing intelligent terminal devices and mobile teaching platforms. to resolve the issue of students' passive learning and raise the standard of in-class instruction and talent development.

(2) Modify the course material using the market as a reference.

Teachers must meet rigorous criteria since the curriculum must adapt to changing times and commercial demands.The content of design courses should be updated to reflect the state of the art, including changes to research techniques and frameworks in the big data era and to design methodologies and business models in the internet era, among other things. In order for students to better adapt to the ever-changing changes in society, the teaching material of the courses needs to be updated frequently.

(3) Enrich the instructional strategies in order to promote quality as the objective.

We shall change the focus of the classroom from the teacher to the students in an effort to better cultivate talent. To aid students in improved understanding and assimilation of the teaching materials, mastery of the pertinent knowledge, expansion of their vision, and improvement of their problem-solving skills, we will use a multi-dimensional teaching design and use a variety of teaching approaches.

(4) Project-driven to improve the efficiency of instruction.

Project-driven learning, which involves assigning projects that are directly related to competition projects or businesses, can help students learn more and become more adept at applying what they have learned in real-world situations. It can also give students the chance to experience the real design requirements of businesses, feel what goes into the actual design and production processes, and see how seamlessly school and society are connected. For all three parties, this is a win-win circumstance.

3.3. Teaching Implementation based on SPOC Blended Teaching

(1) Teaching Object

The purpose of this study is to evaluate the efficacy of SPOC-based design courses using 80 product design students from two natural classes of the 2020 class at Wenzhou Polytechnic were utilized as test subjects to assess the efficacy of the SPOC-based design course. In accordance with the students' selected design themes, each class was divided into 10 groups of four pupils. The groups' research, debate, and reporting were the responsibility of the group leaders. In the pre-class poll, 100% of the students reported having smartphones and 95% had personal laptops.

(2) Teaching time

Preparation for the blended SPOC course began in January 2020 and was completed in December of the same year. The course started in February 2021 and ended at the end of June, lasting 17 weeks.

(3) Teaching and learning process

Prior to the start of the course, the course was published on the Chaoxing Learning Platform, which offered top-notch courseware, videos, and other pertinent online resources to develop the course content based on SPOC blended teaching. Before the course began, students were required to log into the Chaoxing Learning Platform, watch the course materials and videos in accordance with the requirements, complete an independent study of the knowledge points, and then complete a questionnaire test on the course's content to gauge their understanding of the knowledge points. This study will be used in conjunction with the students' prior

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independent learning in the classroom to enhance their grasp of the ideas and implications of the course knowledge points through analogy research, analysis, and comparison.

4. Conclusion

From the standpoint of the teachers, blended learning places a lot of demands on them. In order to keep up with the times, teachers must first recognize and modify their outdated teaching methods. They must also take the initiative to learn new Internet skills. Secondly, teachers must possess certain information literacy and cutting-edge educational technology skills in order to find or create professional teaching videos and organize clear and concise teaching materials that will make it easier for students to conduct independent study outside of class. By exploring, analyzing, and comparing analogies, this research will be used in the classroom to complement the students' prior independent learning and help them better understand the concepts and meanings of the course knowledge points. In the classroom, teachers must possess strong classroom management and control skills in order to manage the discussion and teaching effect based on research and learning. Of course, teachers must devote more time and effort outside of class to assess students' knowledge and understanding and homework completion, as well as to communicate and interact with students more.

The new teaching approaches have given classroom instruction new life since students, who are "digital natives," can readily embrace and adapt to the new teaching style. Although students' learning time outside of class increases exponentially when compared to traditional teaching methods, blended learning places high demands on their preparation for learning before class and their practice and consolidation after class. In addition, because task points are assigned, students are also expected to complete and submit them within the allotted time. Additionally, the platform is an open teaching platform that allows students to view each other's work and freely discuss and remark on them, which helps to some extent foster mutual learning and student progress.

In order to better organize instruction and increase the effectiveness of teaching and learning for both teachers and students, the online teaching platform can be implemented.

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