Effectiveness-oriented SPOC+Flipped Classroom Teaching Reform--A Case Study of "Fundamentals of Photography" Course

Shujuan Yao

Taishan University, Tai'an Shandong 271000

Abstract: With the in-depth application of information technology in the field of education, the traditional teaching mode is facing unprecedented challenges and reform needs. This study explores the teaching reform practice of SPOC (Small Private Online Course) combined with flipped classroom in the course of Fundamentals of Photography as an example. By designing and implementing an effect-oriented SPOC + flipped classroom teaching model, this study aims to improve students' learning initiative, engagement and course satisfaction. The research methodology included questionnaires, interviews and classroom observations to assess the effectiveness of the model by comparing the teaching effects before and after implementation. The results show that the SPOC+flipped classroom model significantly improves students' academic performance and the quality of classroom interactions, and students' overall satisfaction with the course is significantly improved. Based on the results of the study, this paper puts forward suggestions for teaching reform in other courses, providing a reference for future educational practice and research.

Keywords: SPOC; Flipped classroom; Pedagogical reform; Fundamentals of photography; Learning outcomes

Introductory

With the rapid development of information technology, the field of education is undergoing a profound change, in which photography education is no exception. The traditional photography teaching model is facing multiple challenges, including the limitation of teaching resources, the lack of student participation and the lack of practice opportunities. At the same time, emerging online education models, such as SPOC (Small Private Online Course) and flipped classroom, bring new opportunities for photography education; SPOC provides a more flexible and personalised way of learning, while flipped classroom reconfigures the time and space of the classroom, encouraging students to learn on their own through online resources before class, and participate in discussion and practice during class. participate in discussions and practices during class.

This study aims to explore the effect of combining SPOC and flipped classroom teaching mode on the reform of the course "Fundamentals of Photography". As one of the core courses for photography majors, the teaching quality of Fundamentals of Photography has a direct impact on the cultivation of students' professional skills and innovation ability. However, limited by the traditional teaching mode, students often cannot fully understand and master the theoretical knowledge of photography, and it is more difficult to apply what they have learnt in practice. Therefore, by introducing the SPOC+flipped classroom model, this study aims to improve the teaching effect of the Fundamentals of Photography course, enhance students' motivation and practical ability, and thus better adapt to the needs of contemporary photography education.

1. Research methodology and design

This study was conducted on the Fundamentals of Photography course and the students involved in it, with the aim of exploring and evaluating the role of the SPOC+flipped classroom teaching model in improving the effectiveness of teaching and learning. In order to achieve this goal, the study used a variety of data collection methods, including questionnaires, interviews, and classroom observations, to ensure the comprehensiveness and accuracy of the data.

1.1 Research methodology

Questionnaire: A questionnaire will be designed to collect students' perceptions and feedback on the learning experience and learning outcomes of the traditional teaching model and the SPOC+flipped classroom model. The questionnaire will contain quantitative questions to assess students' learning satisfaction, engagement and learning outcomes, as well as open-ended questions to collect students' views on the

strengths and weaknesses of the teaching models.

Interviews: semi-structured interviews with students and teachers to gain insights into their perceptions, experiences and suggestions about the SPOC + flipped classroom model. The interviews will focus on the impact of the teaching model on students' motivation, interactive engagement and depth of understanding.

Classroom observation: direct observation of the implementation of the "Fundamentals of Photography" course, recording classroom activities, student participation and teacher instruction methods. Through observation, analyse the effect of the application of SPOC+flipped classroom model in actual teaching and possible problems.

1.2 Instructional design

The SPOC + flipped classroom model in this study contains the following specific implementation steps and teaching strategies:

SPOC course development: Based on the syllabus of Fundamentals of Photography, develop online course content covering theoretical knowledge and photographic techniques. Includes video lectures, reading materials, practical exercises and self-test questions for students' independent study before the class.

PRE-CLASS PREPARATION: Students are required to complete the assigned SPOC course content study and submit a brief learning feedback or complete an online self-assessment prior to class to ensure their readiness for class discussions and activities.

Classroom activities: Class time is devoted to discussions, case studies, group work and practical exercises. Teachers adjust the focus and level of difficulty of classroom activities based on students' pre-course learning and feedback to promote in-depth understanding and application of skills.

Post-class assignments and feedback: After class, students are required to complete projects or assignments related to classroom activities to deepen their mastery of the fundamentals and skills of photography. Teachers provide personalised feedback and guidance to help students improve and enhance.

Through the above research methodology and instructional design, this study aims to comprehensively evaluate the effectiveness of the SPOC+flipped classroom model in the Fundamentals of Photography course, so as to provide useful instructional strategies and practical guidance for photography education and, more broadly, art and design education.

2. Teaching and learning implementation

Implementing the SPOC+Flipped Classroom model in the Fundamentals of Photography course, we adopted the following strategies to ensure the effectiveness of teaching and the optimisation of students' learning experience.

2.1 SPOC course content development

Syllabus Sorting: Firstly, according to the syllabus of Fundamentals of Photography, the core content and learning objectives of the course will be determined, including the theory of photography, history, technical skills, and analysis of works.

Content production: Development of multimedia teaching resources suitable for online learning. This includes short video lectures, example presentations, interactive quizzes and simulation exercises to cover both theoretical knowledge and practical skills learning.

Platform Integration: Upload teaching resources to the SPOC platform and set up learning paths, including pre-course self-test questions, post-course practice tasks and feedback mechanisms, to ensure that students can independently and efficiently complete their pre-course learning.

2.2 Implementation strategies for the flipped classroom

Pre-class study guide: Students are required to complete the assigned study tasks through the SPOC platform before class and review their weaknesses on their own based on the results of the self-test. In this way, students can enter the classroom with specific questions and reflections.

Interactive in-class teaching: Class time is used for in-depth discussions, case studies, collaborative group projects and on-site filming practice. Teachers guide the discussion, adjust the focus of teaching and encourage students to take the initiative to ask questions and share, based on their pre-class learning.

Post-class feedback and consolidation: assignments or projects related to classroom activities where students are asked to practice the skills they have learnt and submit their work on the SPOC platform. Teachers and peers provide feedback to help students identify room for improvement.

2.3 Student interaction and feedback

Setting up of interactive forums: Forums are set up on the SPOC platform to encourage students to discuss and exchange views on learning content, practical experience and problems encountered. This kind of peer-to-peer learning can enhance students' interest and motivation in learning.

Regular Online Q&A: Regular online Q&A slots are arranged where students can raise queries and teachers answer them in real time. This not only enhances student-teacher interaction but also ensures timely resolution of students' queries.

Instant feedback system: The automated assessment tools of the SPOC platform are used to provide students with instant feedback to help them keep abreast of their learning progress and problems. For assignments and projects that are highly subjective, teachers provide personalised and constructive feedback.

Through these teaching implementation strategies, the SPOC+flipped classroom model can give full play to the advantages of online learning resources and the value of classroom interaction, promote students' active learning, and improve the teaching effect of the Fundamentals of Photography course.

3. Effectiveness evaluation and analysis

This study provides a comprehensive assessment and in-depth analysis of the teaching reform effect of adopting the SPOC+flipped classroom model in the course of Fundamentals of Photography through the comprehensive use of multiple assessment tools and analysis methods.

3.1 Assessment of teaching effectiveness

Learning outcomes: comparing students' learning outcomes before and after the implementation of the SPOC+flipped classroom model, including theoretical knowledge tests and practical work assessments, in order to quantify the direct impact of the pedagogical reforms.

Questionnaire Survey: A questionnaire survey was designed and implemented to collect feedback from students on their learning experience, quality of learning resources, participation in classroom activities, and satisfaction with the teaching methodology of the SPOC+flipped classroom model.

Interviews: semi-structured interviews with students and teachers to gather deeper insights and opinions on the impact of the teaching model on motivation, choice of learning strategies, sense of engagement in the course and learning outcomes.

3.2 Analysis of student feedback

Acceptance: to analyse students' acceptance of the SPOC+flipped classroom model, including the frequency of use of online learning materials, the adequacy of pre-course preparation and active participation in classroom activities.

Engagement: The level of student engagement throughout the learning process, particularly in group discussions, case studies and practical exercises, is assessed through classroom observation records and online platform activity data.

Satisfaction: Based on the results of questionnaires and interviews, students' overall satisfaction with the teaching mode, learning resources, teaching support and learning outcomes is assessed.

3.3 Reflections on teaching

Problems in the teaching and learning process: Identify the main problems encountered during the implementation of the SPOC+flipped classroom model, such as challenges in the matching of learning resources, students' ability to learn independently, the effectiveness of classroom interaction, and technical support.

Challenge analysis: In-depth analysis of the root causes of the above problems and challenges, their impact on learning outcomes, and the coping strategies and solutions adopted in practice.

Suggestions for improvement: Based on the reflection on teaching practice and effectiveness evaluation, specific suggestions and strategies for improvement are proposed to address the problems identified, aiming to further optimise the teaching design and implementation of SPOC+flipped classroom model and to improve the teaching effectiveness.

4. Conclusions and recommendations

4.1 Conclusions of the study

This study shows the positive effects of the teaching reform in improving students' motivation, engagement and learning effectiveness through a comprehensive assessment of the implementation of the SPOC+flipped classroom model in the Fundamentals of Photography course. The combination of high-quality online resources provided by the SPOC and the interactive learning environment of the flipped classroom model effectively promotes students' self-directed learning and classroom participation, and deepens their understanding and mastery of the basic knowledge and skills of photography. skills. At the same time, some challenges have been revealed in the teaching practice, such as the unevenness of students' independent learning ability, the match between online resources and actual teaching, and the complexity of classroom management.

4.2 Practical implications

Teaching resource development: Educational practitioners should pay attention to the development of high-quality online teaching resources to ensure that the content is rich, accurate and easy to understand to suit the needs of different learners.

Teaching design flexibility: When implementing the SPOC+flipped classroom model, teachers should flexibly adjust their teaching strategies to optimise classroom activities and interactions according to students' learning progress and feedback.

Technology and support system: A robust technical support and learning counselling system is in place to help students overcome technical problems and learning barriers that they may encounter in online learning and classroom interactions.

Continuous assessment and feedback: Establishing a continuous assessment and feedback mechanism to collect and analyse students' learning data and feedback on a regular basis, so as to make timely adjustments to the teaching methods and contents and improve the effectiveness of teaching.

4.3 Research outlook

Research on long-term effects: future research needs to further explore the long-term teaching and learning effects of the SPOC+flipped classroom model, especially on the development of students' professional skills and innovation abilities.

Personalised Learning Paths: to study how to develop more personalised learning paths and teaching strategies based on the SPOC+Flipped Classroom model to suit the needs and preferences of different learners.

Integration of Technology and Teaching: In-depth discussion on the potential of emerging technologies (e.g. artificial intelligence, big data analysis, etc.) to be applied in the SPOC+flipped classroom model in order to further improve the quality and efficiency of teaching and learning.

Interdisciplinary application research: to explore the effectiveness and adaptability of the SPOC+Flipped Classroom model in disciplines and fields other than photography education, in order to promote the widespread promotion and application of the teaching model.

Through this study, we not only verified the effectiveness of the SPOC+flipped classroom model in the Fundamentals of Photography course, but also provided valuable experiences and insights for future teaching reform and research.

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Author: Shujuan Yao(1986.3.20), Female, Han nationality, Tai'an City, Shandong Province, Doctor of Fine Arts, Mainly engaged in photography, radio and television editing and directing education.