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Research on the SPOC+PBL Blended Teaching Reform of the "International Investment" Course Based on "Both-Nature and One-Extent" Concept

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Abstract:
Based on the concept of "Both-Nature and One-Extent", this paper explores the reform practice and optimization path of the "International Investment" course under the SPOC+PBL blended teaching model. Although online teaching models such as MOOC and SPOC provide abundant resources, they face issues such as insufficient student participation, lack of motivation, and inconsistent knowledge retention. To address these challenges, the SPOC+PBL model effectively overcomes these shortcomings by integrating online resources with offline interactions. Through well-designed course content, interactive teaching activities, and a scientific assessment system, this model significantly enhances postgraduate students' autonomous learning abilities, critical thinking, and practical problem-solving skills. Through two rounds of teaching reform experiments, it was found that the SPOC+PBL blended teaching model not only improves academic performance but also promotes the comprehensive development of students' abilities. Students actively engage in classroom interactions, demonstrating increased interest and initiative. They are able to apply theoretical knowledge to practical problems and propose innovative solutions. Additionally, the SPOC platform's online resources provide convenient learning support, enabling students to better master course content during pre-class preparation, in-class interaction, and post-class review.

Keywords:
"Both-Nature and One-Extent", SPOC, PBL, Blended teaching

1 Introduction

In the current educational environment, autonomous learning has become the primary method of learning at the postgraduate level. However, influenced by various complex factors, the actual teaching effectiveness of MOOC (Massive Open Online Course) and SPOC (Small Private Online Course) in classroom settings has fallen short of expectations. SPOC, an "online-offline" blended teaching model developed from MOOC, is designed for small-scale, specific groups. It aims to meet the diverse needs of students and achieve better learning outcomes(Zhu et al.[1]). Although these online course models provide certain conveniences and resources for postgraduate education, several challenges persist in the teaching process. For instance, student participation remains low, motivation is insufficient, and knowledge retention is inconsistent. These issues

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have limited the effectiveness of postgraduate learning to some extent.

This study implements the SPOC+PBL (Problem-Based Learning) blended teaching model, adhering to the "Both-Nature and One-Extent" teaching philosophy, which emphasizes high-order, innovative, and challenging approaches. The primary objective is to enhance postgraduate students' high-order autonomous learning, critical thinking, innovative thinking, and practical problem-solving skills. Research indicates that the SPOC+PBL model significantly improves students' comprehensive competencies(Chen et al[2]). Furthermore, the "SPOC+PBL" flipped classroom approach integrates diverse teaching methods. By using project-based tasks as a learning entry point, it effectively combines SPOC online learning with offline activities, fostering students' autonomous learning capabilities and enhancing the efficiency of classroom teaching(Liu[3]). Focusing on the "International Investment" postgraduate course, this study actively advances its teaching reform. It aims to provide a higher-quality and more efficient learning experience, improve both course quality and students' overall competencies, and lay a solid foundation for cultivating high-level talents with innovative spirit and practical abilities.

2 Theoretical Foundations and Conceptual Framework

2.1 The Connotation and Implications of "Both-Nature and One-Extent"

The "Both-Nature and One-Extent" concept emphasizes three key dimensions: high-order thinking, innovation, and challenge. Its main principles are as follows: First, high-order thinking involves the integration of knowledge, skills, and qualities, aiming to develop students' comprehensive ability to solve complex problems and cultivate advanced cognitive skills (Sun[4]). Second, innovation encompasses advancements in teaching content, methods, and assessment approaches. Third, the challenge dimension focuses on increasing course difficulty and elevating learning expectations. In summary, the core objective of the "Both-Nature and One-Extent" teaching concept is to drive curriculum reform and enhance teaching quality, ultimately fostering high-quality talents with both innovative spirit and practical abilities. As a critical criterion for developing first-class courses, the "Both-Nature and One-Extent" framework has become a central focus of research in higher education teaching reform(Li et al[5]).

2.2 Analysis of the SPOC Model

A SPOC is designed for a limited number of participants who meet specific admission criteria(Li et al[6]). This model is characterized by customization, privacy, small class size, high student engagement, and strong teacher-student interaction. The advantages of the SPOC model include the following: First, it enhances teaching quality. With a smaller student cohort and selective admission, instructors can provide more personalized guidance and feedback, thereby improving instructional outcomes. Second, it increases student participation. The small-scale learning environment encourages active discussion and interaction, fostering greater enthusiasm and initiative among learners. Third, it offers flexible teaching arrangements. Instructors can adapt the pace and content of instruction to meet the diverse needs of students. Fourth, it optimizes the use of teaching resources. Compared to MOOC, the SPOC model utilizes resources more efficiently, minimizing waste.

The implementation of the SPOC model requires attention to the following key points. First, in terms of

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course design, the online content should be meticulously designed to ensure the systematization and integrity of the curriculum. Second, regarding student screening, admission criteria should be clearly defined to select suitable participants for the SPOC course, thereby ensuring the quality of the learning group. Third, for teaching interaction, a variety of online and offline activities should be organized to promote communication and collaboration among students and between students and teachers. Fourth, in assessment and evaluation, a scientific and reasonable system should be established, taking into account factors such as students' online performance, offline participation, and test scores. Fifth, teacher training is essential. Relevant training should be provided to familiarize teachers with the teaching methods and technical tools of the SPOC model, thereby enhancing their instructional skills.

2.3 Principles of PBL

PBL emphasizes a student-centered and problem-driven approach. It involves creating real-world, meaningful, and exploratory projects, such as problems and challenges, within the classroom. Through these projects, students engage in in-depth exploration and collaborate with peers to produce project outcomes, thereby acquiring knowledge and skills(Buck Institute for Education[7]). The core principle of PBL is to center learning around real and complex problems. In this approach, students transition from being passive recipients of knowledge to active problem-solvers who independently investigate and explore the essence and key aspects of problems.

Group work is a critical component of PBL. Students actively exchange ideas, share resources, and analyze problems collectively. They gather information from diverse perspectives, brainstorm, and propose multiple solutions. This process significantly enhances their problem-solving abilities, enabling them to effectively utilize various methods and tools to address challenges. Additionally, through collaboration, students develop teamwork skills, learning to listen to others, allocate tasks efficiently, and work together toward common goals. In PBL, students also engage in literature review, which fosters their skills in information retrieval, critical analysis, and problem-solving. During group discussions and summarization, they further develop their abilities to organize and express ideas, as well as to synthesize information(Wang et al[8]). In summary, PBL emphasizes active learning and practical application by situating learning within meaningful problem-solving contexts. It enables students to deeply understand the value and application of knowledge while addressing real-world problems, which is highly beneficial for their future academic and professional lives.

2.4 Theoretical Foundations for Constructing the Blended Teaching Model

In the current educational field, with the rapid development of information technology and the continuous innovation of educational concepts, the blended teaching model has gradually become an important approach to improving teaching quality and effectiveness. Constructivist learning theory, problem-based learning, instructional system design, and blended learning provide a theoretical foundation for the effective construction of the blended teaching model.

Constructivist learning theory, an extension of cognitive learning theory, emphasizes the constructivist views of knowledge, learning, students, and the learning environment (Zhong & Xu[9]).

The problem method, also known as the five-step teaching method, was proposed by the modern educator

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John Dewey[10]. He argued that the teaching process involves children gaining experience through personal practice and exploration, which parallels their cognitive development. This process mirrors the scientific research process. Dewey divided education into five steps: (1) presenting a situation and identifying a problem; (2) defining the problem and motivating learning; (3) collecting data and proposing solutions; (4) testing hypotheses and refining them; and (5) applying solutions in real-life contexts.

In instructional system design, systems science posits that a system is an organic whole composed of interacting and interdependent elements with specific functions(He et al[11]). Spector[12] suggested that in complex systems, when faced with challenging problems, complex solutions are not always necessary. Instead, small, well-considered changes can have significant impacts.

Blended learning, had been implemented even before it was formally conceptualized. Singh & Reed [13] defined blended learning as "a learning method that achieves optimal outcomes by applying appropriate learning technologies to match appropriate learning styles at the appropriate time, thereby delivering appropriate skills to appropriate learners".

In 2018, the Ministry of Education formally introduced the concept of "Golden Courses" and emphasized the development of blended Golden Courses to transform traditional education models and enhance course quality. Wu Yan[14], Director of the Higher Education Department, highlighted that Golden Courses should possess "Both-Nature and One-Extent", characterized by high-order thinking, innovation, and challenge. Based on this, domestic universities have undertaken course construction with this goal in mind. "Both-Nature and One-Extent" has thus become a key focus for the development of blended teaching in Chinese higher education. This concept also provides valuable insights for postgraduate training objectives.

3 Course Design and Optimization

3.1 Construction of the SPOC+PBL Blended Teaching Model in the "International Investment" Course Teaching

Combined with the teaching practice of the "International Investment" course, this paper integrates constructivist learning theory, problem-based learning(PBL), instructional system design, and blended learning theory to guide the development of a SPOC+PBL blended teaching model. Based on the course construction goal of "Both-Nature and One-Extent", a teaching evaluation system and a course assessment system are established under the SPOC+PBL framework. Additionally, a comprehensive teaching reform plan is designed. The PBL teaching tasks are meticulously planned, covering the entire process from project topic selection, design, and execution to evaluation. This ensures that students can gain a comprehensive and in-depth understanding of the course content. Furthermore, the course syllabus and lecture notes are compiled, multimedia courseware and teaching videos are produced, and high-quality online teaching resources are integrated to enhance the online teaching platform.

Through a survey of learners, this study investigates graduate students' perceptions of the SPOC+PBL teaching model. Based on students' feedback, the research comprehensively examines the three stages of preclass preparation, teaching activity design, and teaching activity feedback. Furthermore, it constructs and ap-

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plies the SPOC+PBL teaching model for the "International Investment" course.

In the pre-class preparation stage, teachers should develop detailed plans and prepare resources. First, they should design the PBL teaching content, including determining learning goals, creating open-ended questions, and planning students' learning paths. These questions should stimulate students' critical thinking and exploration, guiding them to conduct in-depth research. Next, teachers are required to produce SPOC online courses, which involve creating diverse and interactive content such as video lectures, reading materials, and interactive modules. Additionally, interactive elements such as Q&A sessions, discussion forums, and quizzes should be designed to enhance student engagement and ensure that all online course materials are easily accessible. Furthermore, building a teaching resource library is a crucial component of pre-class preparation. This includes collecting various course-related resources, such as academic papers, case studies, and video tutorials, and categorizing them by theme or difficulty level for easy access by both students and teachers. Finally, the resource library should be regularly updated to ensure the timeliness and relevance of the materials.

The teaching activity design stage is divided into three phases: pre-class, in-class, and after-class. In the pre-class phase, teachers should provide preview materials and guidance to help students understand the issues to be discussed in class. They should also pose guiding questions to stimulate students' curiosity and exploration. If applicable, groups can be assigned before class to facilitate collaboration during the session. The in-class phase is the core of teaching activities. Teachers organize discussions, encouraging students to share their views and insights. Group collaboration is facilitated to solve problems and develop teamwork skills. Additionally, practical opportunities can be provided to enable students to apply theoretical knowledge to real-world problems. The after-class phase focuses on consolidating and extending course content. Teachers assign homework related to the course material and encourage students to write reflective journals to document their learning process and insights. Furthermore, resources and guidance are provided for further research, allowing students to explore areas of interest in greater depth.

The teaching activity feedback stage serves as a summary and reflection of the teaching process, playing a crucial role in continuous improvement. First, teachers should collect feedback from students, themselves, and peers through methods such as questionnaires, discussion forums, self-reflection, and peer reviews. Next, the collected feedback data should be analyzed to identify the strengths and weaknesses of the teaching activities, as well as existing problems and areas for improvement. Based on the feedback results, teachers should adjust the teaching content, methods, and resources accordingly. Additionally, the teaching resource library should be updated to ensure the quality and relevance of the materials, and teaching strategies should be optimized to enhance teaching effectiveness and students' learning experiences. Through this iterative process, teachers can ensure the effectiveness and interactivity of their teaching activities, continuously improving teaching quality through ongoing feedback and refinement.

The construction of the SPOC+PBL blended teaching model for the "International Investment" postgraduate course focuses on integrating PBL project-based teaching into the curriculum. This approach emphasizes students' acquisition of knowledge and skills through participation in authentic and challenging projects. Specifically, the projects designed for this course are primarily guided by the goal of enhancing students' academic literacy and professional competencies. A total of seven projects have been developed, as presented in Table 1.

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Table 1 PBL projects for the "International investment" course

Project Number	Project Name
1	Review Important International Investment Reports and Agreements
2	Summarize Theories of International Direct Investment
3	Analyze Authoritative Journal Articles on International Direct Investment
4	Explore Research Questions in International Direct Investment
5	Summarize Research Methods in International Direct Investment
6	Collect Common Data Sources for International Direct Investment Research
7	Analyze Case Studies of Chinese Enterprises' Foreign Direct Investment

3.2 Implementation and Optimization of the SPOC+PBL Blended Teaching Model in the "International Investment" Course

Focusing on the construction of the course teaching platform and the design of teaching projects, the implementation of the SPOC+PBL blended teaching model in the "International Investment" course is divided into three stages: pre-class, in-class, and after-class. In the pre-class stage, teachers assign learning projects to students and require them to complete the tasks in groups. Students use the platform to access teaching videos, PPTs, and documents, enabling them to independently construct a knowledge system. Subsequently, project teams actively engage in data collection and discussions related to their assigned tasks. The platform's dedicated discussion area provides a space for communication and collaboration, effectively promoting teamwork and enhancing students' higher-order autonomous learning abilities, innovative thinking, and critical thinking skills. During the in-class stage, teachers utilize mind-mapping tools to help students quickly establish a knowledge framework for their projects. They focus on explaining key concepts and guiding students to internalize the knowledge. Through classroom Q&A sessions, students are encouraged to think critically and analyze research projects. Additionally, academic salons, discussions, and debates are organized to create a stimulating research atmosphere. Upon project completion, each group presents their findings, and teachers provide feedback, highlighting strengths and weaknesses while guiding students in finalizing their project reports. In the after-class stage, students reinforce their understanding and application of knowledge through exercises and tests on the SPOC platform. The platform's discussion area is used for project-related communication, reflection, and further discussion. By participating in project-based research, students develop a comprehensive knowledge structure centered around research questions. Teachers conduct assessments and evaluations to measure learning outcomes.

In the specific implementation of the teaching plan, the study employed pre-prepared teaching materials and followed the SPOC+PBL teaching model to conduct two rounds of teaching reform experiments. The research subjects were 2022-grade and 2023-grade international business postgraduate students at Jiangxi Normal University. First, the teaching reform plan was piloted in the "International Investment" course for the 2022-grade cohort. Subsequently, a questionnaire survey and in-depth interviews were conducted to comprehensively understand students' pre-class preparation, learning goals, and post-class learning experiences and attitudes. The research revealed that 80% of the students believed the SPOC+PBL blended teaching model significantly enhanced their engagement and interest, enabling them to actively explore complex issues in international investment. Students reported that this model not only deepened their understanding of theoret-

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ical frameworks but also strengthened their ability to apply theoretical knowledge to practical case analyses. Particularly through group collaboration, students developed effective communication and teamwork skills, as well as critical thinking and problem-solving abilities. Additionally, 75% of respondents indicated that previewing video and reading materials on the SPOC platform allowed them to focus more on discussing challenging and topical issues in class, thereby improving learning efficiency. After class, PBL project assignments further consolidated knowledge, and applying this knowledge to simulated investment decisions or real-world case analyses enhanced the practicality and applicability of learning. However, 20% of students noted initial challenges in adapting to this new teaching model, such as insufficient self-management skills and underutilization of online resources. In response, the study observed students' in-class performance and analyzed learning processes, outcomes, and online learning data. Combining these findings with actual teaching scenarios and students' research participation, the first-round reflection and summary of the teaching reform were conducted. Based on this, the course syllabus, lecture notes, and courseware for the "International Investment" course were revised, further optimizing the SPOC+PBL teaching model. In the second-round experiment, the "International Investment" course for the 2023-grade international business postgraduate students was adjusted and optimized. More guiding materials and personalized learning path suggestions were added, and the supportive role of the online community was strengthened. Students were encouraged to tutor each other and share learning resources, effectively addressing adaptation difficulties. Ultimately, both rounds of teaching reform achieved positive outcomes, not only improving academic performance but also fostering the comprehensive development of students' abilities. This provides new insights and examples for the educational training model of international business postgraduate students.

4 Discussion and Suggestions

4.1 Advantages and Significance of the Teaching Model

The integration of the SPOC platform and PBL combines the benefits of students' learning autonomy, subjectivity, and enthusiasm under the PBL teaching method with the strong interactivity of the SPOC platform, forming the synergistic advantages of the SPOC+PBL blended teaching model(Liang[15]). SPOC+PBL is an innovative teaching model that integrates offline classrooms with the online SPOC platform, utilizing project-based learning as a core approach(Chen[16]). The SPOC combined with PBL model leverages the shared resources of the SPOC platform to stimulate students' initiative and enthusiasm in learning, while fostering their innovative thinking(Yang et al[17]). Blended learning emphasizes not only maximizing the teacher's role in guiding, inspiring, and monitoring the teaching process but also fully embodying students' enthusiasm, initiative, and creativity as the main participants in learning(He[18]). This approach combines the strengths of traditional learning methods and online learning(Du[19]). In recent years, the SPOC+PBL blended teaching model has been widely practiced and applied in college courses, achieving remarkable teaching outcomes(Zheng et al[20]; Fan et al[21]; Li et al[22]). Its significance is reflected in the following aspects:

(1)This study aims to establish specific standards and requirements for the development of the "International Investment" postgraduate course, guided by the "Both-Nature and One-Extent" concept. To address the limitations and shortcomings in the current teaching of this course, the proposed framework emphasizes the design, implementation, and evaluation of both online and offline teaching content. By doing so, it enhances the

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high-order thinking, innovation, and challenge inherent in the course, thereby improving its overall quality.

(2) The practice of the SPOC+PBL teaching model facilitates the development of students' learning autonomy, critical thinking, innovative thinking, and problem-solving abilities(Zhong[23]). Through the implementation of the SPOC+PBL model, which includes teaching content design, discussions, Q&A sessions, presentations, and reflections, communication and interaction between teachers and students, as well as among students, are significantly enhanced. This approach further stimulates students' interest in learning, increases their engagement in the teaching process, and promotes the improvement of their autonomous learning abilities, critical thinking, innovative thinking, and practical problem-solving skills.

(3) The implementation of the SPOC+PBL teaching model can significantly contribute to teacher development. By applying this model in the "international Investment" course, teachers are encouraged to transform their teaching philosophies, enhance their instructional skills, and gain a deeper understanding of cutting-edge disciplinary knowledge. Additionally, it facilitates in-depth interactive teaching and guides students in conducting project-based research. As a result, the model comprehensively improves both the teaching and research capabilities of educators.

4.2 Practical Considerations and Recommendations for Promotion

First, the SPOC+PBL model overcomes the constraints of time and space, emphasizing a student-centered approach and fostering students' initiative and innovation in learning. This necessitates higher standards for achieving efficient and profound knowledge interaction. Consequently, it is essential to conduct in-depth research on learners' willingness to participate, key influencing factors, support systems, and outcome evaluation to optimize the implementation of the SPOC+PBL model.

Second, in the context of SPOC+PBL teaching, the teacher's guiding role is crucial. It is important to account for the varying abilities of postgraduate students. The course content should be designed to be high-order, innovative, and challenging. Through reasonable arrangements, students are encouraged to complete in-depth projects efficiently, promoting deep learning and enquiry mind. This further enhances their academic innovation, collaboration, and communication skills.

Finally, postgraduate students play a vital role in scientific research teams, where innovation is paramount. The SPOC+PBL teaching model significantly enhances their autonomous and inquiry-based learning capabilities. By leveraging available resources, students can explore, learn, communicate, and collaborate effectively on projects. Teachers guide students to achieve a deep understanding and application of knowledge, fostering innovative and critical thinking. This approach underscores the course's high-order nature, innovation, and challenge.

The effectiveness of the teaching model is the result of the combined efforts of the SPOC+PBL course, teachers, and students. Teachers and students are connected through the SPOC+PBL course. The rationality of course content design, teachers' ability to manage the classroom, and the effective organization and utilization of teaching platform resources play a crucial role in ensuring positive teaching outcomes. These factors are also closely linked to the evaluation of teachers' teaching abilities. Students' autonomy, enthusiasm, teamwork, critical thinking, innovative thinking, and problem-solving abilities demonstrated during project

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participation reflect the achievement of effective teaching outcomes and influence the evaluation of students' learning performance(Wang[24]). The level of interaction between teachers and students and the implementation of teaching tasks in SPOC+PBL course activities serve as important bases for evaluating teaching effectiveness. The three elements—teachers, students, and teaching content are interconnected and collectively contribute to the improvement of teaching outcomes. Based on students' learning achievements, teachers assess their performance and propose targeted improvements to course content and teaching methods.

5 Conclusion

Through in-depth research and practice, the SPOC+PBL blended teaching model has demonstrated significant effectiveness in enhancing the "International Investment" course under the "Both-Nature and One-Extent" concept. This model effectively stimulates students' continuous engagement in project-based learning. Rather than being passive recipients of knowledge, students actively participate in exploring and solving problems, which significantly boosts their learning motivation. When confronted with challenging international investment projects, students exhibit enthusiasm and a willingness to challenge themselves. They analyze problems, gather information, and propose solutions through independent exploration and collaborative group work, addressing real-world international investment issues. This approach fosters greater learning autonomy, cultivates self-directed learning habits, and enables students to acquire knowledge and skills more proactively. Furthermore, the model encourages innovative thinking by prompting students to consider diverse perspectives and develop unique solutions, thereby enhancing their creativity and practical abilities. In conclusion, the SPOC+PBL blended teaching model revitalizes the "International Investment" course within the "Both-Nature and One-Extent" concept, significantly improving both the quality and effectiveness of instruction.

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