Research on the Blended Teaching Mode of Construction Regulations Course Based on "Chaoxing Learning Platform"

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Abstract: This paper explores the blended teaching mode of the Construction Regulations course based on the "Chaoxing Learning Platform." As a core course for majors such as engineering management and civil engineering, the current teaching methods for Construction Regulations are often monotonous, lacking interactivity and practicality. Blended teaching, which combines online and offline approaches, offers advantages such as flexibility, rich resources, enhanced interactivity, improved learning efficiency, and the cultivation of autonomous learning and innovative practical abilities. However, challenges such as insufficient teacher proficiency in information-based teaching, students' lack of self-directed learning skills, platform functionality and user experience issues, difficulties in updating and sharing teaching resources, incomplete evaluation systems, inadequate infrastructure investment, and student experience problems persist. To enhance teaching effectiveness, this paper proposes strategies such as optimizing pre-class preparation, enriching classroom activities, strengthening post-class extensions, improving the teaching evaluation system, enhancing teacher capabilities, and upgrading infrastructure. Through practical exploration, the blended teaching mode based on the "Chaoxing Learning Platform" has significantly improved teaching outcomes and student learning experiences in the Construction Regulations course, though further refinement is still needed.

Keywords: Chaoxing Learning Platform, Construction Regulations; Blended Teaching; Teaching Effectiveness; Autonomous Learning Ability

1. Introduction

With the continuous development of educational informatization, blended teaching has gradually become a significant direction in higher education reform. The Construction Regulations course, as a core course for majors such as engineering management and civil engineering, covers a wide range of content, including the legal system of construction projects, engineering bidding, contract management, safety production, and quality management. However, traditional teaching methods, which are primarily lecture-based and lack interactivity and practicality, struggle to meet the demands of modern education. To address this, many universities have adopted blended teaching models, integrating online and offline educational resources to enhance teaching effectiveness and student learning experiences. The "Chaoxing Learning Platform," a widely used online education tool, provides strong support for the implementation of blended teaching. This paper aims to study the blended teaching mode of the Construction Regulations course based on the "Chaoxing Learning Platform," exploring its advantages, challenges, and strategies for improving teaching effectiveness. Through this research, we hope to offer valuable insights and references for the blended teaching of Construction Regulations, promoting innovation and practice in teaching methods, and ultimately enhancing students' learning outcomes and practical abilities. Additionally, this study may provide inspiration and reference for blended teaching in other courses.

2. Current Teaching Status of Construction Regulations

2.1 Characteristics of the Construction Regulations Course

2.1.1 Strong practicality

The course is designed with a clear focus on practical application, integrating theoretical knowledge with real-world scenarios. By

simulating actual engineering project environments, students learn and master legal knowledge through practice, enhancing their ability to solve real-world problems.

2.1.2 Extensive content coverage

The course covers the entire process of construction project procedures, from project initiation and planning to construction permits. It incorporates knowledge from multiple important laws and regulations, such as the Civil Code and the Construction Law, forming a comprehensive legal framework.

2.2 Limitations of Current Teaching Innovation Models

2.2.1 Task-driven approach

This method centers on tasks, allowing students to learn through completing them. Limitations include the difficulty of task design—tasks that are too simple or complex may affect effectiveness. Additionally, varying student backgrounds may lead to uneven task completion, and balancing the needs of different students can be challenging. Furthermore, tasks may emphasize practice over theoretical knowledge.

2.2.2 Case analysis method

This approach involves learning through the analysis of real cases. Limitations include the selection of cases—whether they are representative and cover all key points. Overly specialized cases may hinder students' ability to generalize. Additionally, case analysis requires students to have a certain level of background knowledge and analytical skills, which may be difficult for beginners. Teachers also need to invest significant time in preparing appropriate cases.

2.2.3 Team-Based Learning (TBL) method

Limitations include communication issues within teams, such as some students relying on others, leading to "free-riding." Uneven team composition, such as significant differences in ability, may result in uneven learning outcomes. Additionally, evaluating team contributions fairly can be challenging, requiring complex assessment mechanisms.

2.2.4 BOPPPS + case teaching model

BOPPPS includes six stages: Bridge-in, Objective, Pre-assessment, Participatory Learning, Post-assessment, and Summary, combined with case teaching. Limitations include the rigid structure, which may lack flexibility, and the need to adjust steps for different subjects or content. Time management can also be challenging, as each stage may take significant time, leading to a tight course schedule. Furthermore, designing effective pre- and post-assessments can be difficult, increasing teachers' preparation workload.

3. Advantages of Blended Teaching

3.1 Flexibility and Personalized Learning

Blended teaching breaks the time and space constraints of traditional classrooms, allowing students to learn at their own pace and schedule, thereby improving learning efficiency. Teachers can also adjust content and pace based on students' needs, enabling personalized teaching.

3.2 Rich Learning Resources

Blended teaching integrates online and offline resources, including video lectures, online discussions, e-books, and forums, providing students with a wider range of learning materials and methods. This richness enhances the learning experience and helps students grasp knowledge more comprehensively.

3.3 Enhanced Interactivity and Engagement

Blended teaching enhances interaction between teachers and students, as well as among students, through online discussions, real-time Q&A, and group collaborations. This interactive model fosters student interest and engagement, while also cultivating critical thinking and teamwork skills.

3.4 Improved Learning Efficiency and Outcomes

Blended teaching optimizes teaching processes and content, enabling differentiated instruction and improving learning efficiency. Research shows that blended teaching significantly enhances student learning outcomes, particularly in deep learning and higher-order thinking skills[1].

3.5 Cultivation of Autonomous Learning Abilities

Blended teaching encourages students to manage their own learning progress and combines online resources with offline practice, fostering autonomous learning and problem-solving skills[2]. This model

emphasizes student-centered learning, better preparing them for future academic and professional environments.

3.6 Promotion of Innovation and Practical Abilities

Blended teaching promotes innovative thinking and practical skills through online pre-class preparation, offline discussions, and hands-on practice. For example, students can engage in immersive learning through virtual simulations, deepening their application of theoretical knowledge.

3.7 Adaptation to Modern Educational Needs

With the advancement of information technology, blended teaching meets the modern educational demands for diversity, efficiency, and personalization. It is suitable not only for theoretical courses but also for courses that require a combination of theory and practice.

4. Challenges of Blended Teaching in Construction Regulations Based on "Chaoxing Learning Platform"

4.1 Insufficient Teacher Proficiency in Information-Based Teaching

Many teachers lack the necessary awareness and skills for information-based teaching, making it difficult to adapt to blended teaching models. For example, some teachers are resistant to blended teaching reforms due to a lack of understanding or fear of difficulty. Additionally, teachers need to invest more time and effort in course design, content arrangement, and teaching sequence adjustments, placing higher demands on them.

4.2 Students' Lack of Autonomous Learning Skills

Blended teaching emphasizes students' autonomous learning abilities, but some students struggle with motivation and self-discipline in online learning environments. Research shows that online learning is not suitable for all students, with only a few successfully adapting to it. Additionally, students need to shift from passive to active learning habits.

4.3 Platform Functionality and User Experience Issues

While the "Chaoxing Learning Platform" offers rich features, it still faces challenges in practical use. For example, the platform has a high entry barrier, and many teachers lack the motivation to build online courses. Additionally, issues with resource sharing and compatibility hinder the implementation of blended teaching. Some students also report that platform features, such as attendance and interaction, are underutilized[3].

4.4 Difficulties in Updating and Sharing Teaching Resources

Blended teaching requires timely updates and sharing of teaching resources, but this process faces numerous challenges. For example, research on the Construction Regulations course shows that content updates often fail to meet student needs, and traditional teaching methods struggle to cultivate practical skills. Additionally, platform limitations make it difficult for teachers to upload and share high-quality resources.

4.5 Incomplete Evaluation System

Blended teaching requires a diversified evaluation system, but current systems often suffer from subjectivity and incompleteness. For example, research on the Probability and Statistics course highlights that assessment methods are too simplistic, failing to fully reflect student learning outcomes. Similarly, research on Urban Rail Transit Safety Management suggests that evaluation methods need further optimization[4].

4.6 Insufficient Investment in Infrastructure

The successful implementation of blended teaching requires robust hardware and software support. However, some schools lack sufficient investment in information infrastructure, leading to environments that cannot meet the demands of blended teaching. Issues such as unstable network connections and insufficient multimedia equipment hinder the development of blended teaching.

4.7 Student Experience Issues

While blended teaching can stimulate student interest, practical challenges remain. For example, some students find the "Chaoxing Learning Platform" complex to use, with

unclear learning paths. Additionally, student engagement and motivation in pre-class preparation, in-class interaction, and post-class review are often limited.

5. Strategies to Improve Blended Teaching Effectiveness in Construction Regulations Based on "Chaoxing Learning Platform"

5.1 Optimize Pre-Class Preparation
5.1.1 Enhance learning materials
Teachers should upload course materials, including syllabi, chapter videos, and pre-class quizzes, to the "Chaoxing Learning Platform" in advance, helping students clarify learning objectives and tasks. For example, micro-lecture videos or recorded content can enable students to learn and grasp basic knowledge independently.
5.1.2 Design interactive tasks
Teachers should use platform features such as attendance tracking, quick quizzes, and surveys to stimulate student interest and assess their understanding of foundational knowledge. For example, teachers can design short quizzes related to pre-class materials to ensure students grasp key concepts before in-class activities.
5.1.3 Personalized learning paths
Based on student performance data (e.g., quiz scores and participation rates), teachers can adjust the difficulty of content and provide personalized resources tailored to students at different proficiency levels. For instance, teachers may offer advanced reading materials for high-performing students while providing additional explanatory videos for those needing reinforcement.

5.2 Enrich Classroom Activities
5.2.1 Combine online and offline learning
Teachers should adopt a "MOOC + SPOC + Flipped Classroom" model to integrate theoretical teaching with practical exercises. For example, in the Urban Rail Transit Safety Management course, teachers can guide students to complete self-directed learning through flipped classrooms, followed by offline case analysis and discussions to deepen understanding[5].
5.2.2 Real-Time feedback and discussion
Teachers can utilize the platform's discussion boards and polling features to encourage active participation, thereby enhancing teacher-student interaction and classroom engagement.
5.2.3 Case-based teaching
Teachers should incorporate real cases into teaching. For instance, in the Construction Regulations course, teachers can use case studies to help students understand the practical application of legal provisions[6,7].

5.3 Strengthen Post-Class Extensions
5.3.1 Assignments and discussions
Teachers should assign online homework and use the platform's grading features to provide timely feedback. Additionally, teachers should encourage students to participate in online discussions to reinforce learning.
5.3.2 Provide extended learning resources
Teachers should upload supplementary resources such as case videos, expert lectures, and online question banks to support students' independent learning.
5.3.3 Showcase learning outcomes
Teachers can display outstanding assignments or projects on the platform to motivate students to learn from each other.

5.4 Improve the Teaching Evaluation System
5.4.1 Diversify evaluation methods
Teachers should combine online data with offline performance by applying formative and summative assessments. For example, teachers can track students' attendance, homework completion, and online test scores through the platform to comprehensively evaluate learning outcomes[8-10].
5.4.2 Feedback and improvement
Schools need to regularly collect student feedback, analyze teaching data, and adjust strategies accordingly. For instance, teachers can optimize content and methods based on students' progress and challenges.

5.5 Enhance Teacher Capabilities
5.5.1 Training and support
Schools should provide teachers with training on using the Chaoxing learning platform to improve their ability to design and manage blended teaching.
5.5.2 Share teaching experiences
Schools can organize teacher workshops or seminars to share successful blended teaching practices, fostering collaboration among educators.

5.6 Upgrade Infrastructure

5.6.1 Improve hardware environment

Schools must ensure comprehensive campus network coverage and provide stable internet access to support anytime, anywhere learning.

5.6.2 Optimize software features

Platform developers should continuously update features, such as adding interactive tools and data analysis modules, to enhance user experience.

6. Conclusion

The application of the blended teaching mode based on the "Chaoxing learning platform" in the construction regulations course has significantly improved teaching effectiveness and student learning experiences by optimizing content, refining methods, enhancing evaluation systems, and providing technical support. However, this model requires ongoing exploration and refinement to meet the needs of different disciplines and student groups.

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