Transactions on Comparative Education (2025)
Clausius Scientific Press, Canada

DOI: 10.23977/trance.2025.070223
ISSN 2523-5818 Vol. 7 Num. 2

Innovating Class Teaching through "One Guiding Principle, Dual-Driver Model, and Blended Instruction": A Practical Study on Integrating BOPPPS with PAD Class

—Taking the Course Enterprise Logistics and Supply Chain Management as an Example

Lifan Feng[a,*], Hongxia Gu[b], Min Feng[c]

School of Economics and Trade, Haojing College of Shaanxi University of Science and Technology, Xianyang, 712000, Shaanxi, China
[a]kdhjjmxy@sust.edu.cn, [b]gu_hx@outlook.com, [c]minzaifeng@163.com

Keywords: BOPPPS; PAD Class; Blended Instruction

Abstract: The course Enterprise Logistics and Supply Chain Management plays a pivotal and guiding role among logistics-related courses. It adopts a teaching model that integrates the "dual-driver" of BOPPPS (Bridge-In, Outcomes, Pre-assessment, Participatory Learning, Post-assessment, Summary) and PAD Class (Presentation-Assimilation-Discussion Class), incorporates blended instruction, and integrates online and offline resources to build a highly interactive and autonomous learning environment. The BOPPPS theory guides the teaching process, covering the stages of bridge-in, outcome setting, pre-assessment, participatory leaming.post-assessment, and summary, ensuring the orderly progress of teaching. The PAD Class model divides the teaching process into teacher presentation (with focused lectures and reserved thinking space), student assimilation, group discussion, and teacher summary, enhancing students' autonomous leaming and pllaborative abilities. Meanwhile, blended instruction empowers classroom teaching, realizing the integration of theory and practice, and addressing the problems in traditional teaching such as low student engagement, poor participation, and insufficient cultivation of students' high- level cognitive skills. Through the implementation of this innovative model, students' learning enthusiasm has been significantly improved, their professional knowledge and practical abilities have been strengthened, and the educational goals of imparting knowledge, developing skills, shaping literacy, and conducting ideological and political education have been effectively achieved.

1. Overview of the Course

The BOPPPS theory guides the teaching process, covering the stages of bridge-in, outcome setting, pre-assessment, participatory learning, post-assessment, and summary, ensuring the orderly

progress of teaching. The PAD Class model divides the teaching process into teacher presentation (with focused lectures and reserved thinking space), student assimilation, group discussion, and teacher summary, enhancing students' autonomous learning and collaborative abilities [4]. Meanwhile, blended instruction empowers classroom teaching, realizing the integration of theory and practice, and addressing the problems in traditional teaching such as low student engagement, poor participation, and insufficient cultivation of students' high-level cognitive skills.

Through the implementation of this innovative model, students' learning enthusiasm has been significantly improved, their professional knowledge and practical abilities have been strengthened, and the educational goals of imparting knowledge, developing skills, shaping literacy, and conducting ideological and political education have been effectively achieved.

As a basic course in logistics, Enterprise Logistics and Supply Chain Management is a compulsory course for economics and trade majors in our university. It features strong practicality, professionalism, and comprehensiveness. After completing this course, students are required to:

Master the processes of key management links in supply chain management, such as procurement, production, and inventory management;

Familiarize themselves with information technologies in supply chain links, including ERP systems, order management systems, WMS systems, and distribution management systems;

Analyze the supply chain operation mode behind products and identify potential bottlenecks in supply chain operations, thereby improving their comprehensive abilities to analyze and solve problems.

This course lays a solid theoretical and practical foundation for students to engage in management work in the field of supply chain logistics.

2. Analysis of Teaching Pain Points

2.1 Low Student Engagement

Under the traditional teaching model, the teaching content is mostly limited to theoretical knowledge in textbooks, with insufficient connection to the actual development of the industry and students' future professional scenarios [2]. Guided by the concept of "student-centered and teacher-led," this teaching innovation closely links teaching content to professional scenarios, integrates teaching focus with students' concerns, and builds a closed-loop classroom. Through the process of "teacher raising questions → students identifying questions → teacher-student questioning → students answering questions," it stimulates students' internal motivation through guided thinking and task-driven learning, realizing the integration of indoctrination and inspiration.

2.2 Poor Student Participation

The traditional teaching method is dominated by teacher lectures, where students passively accept knowledge and lack opportunities to actively participate in classroom activities. Classroom interaction is monotonous—mostly consisting of teachers asking questions and students giving simple answers—which hardly stimulates students' enthusiasm and creativity. Group discussions often lack clear task orientation and effective organizational guidance, resulting in poor discussion outcomes and low student participation.

This innovative teaching model emphasizes the in-depth integration of media convergence and teaching, and effectively leverages the advantages of smart teaching tools (such as Rain Classroom), including real-time interaction, big data visualization, and instant feedback. This not only aligns with students' learning characteristics but also promotes the integration of teacher leadership and student subjectivity.

2.3 Insufficient Cultivation of High-Level Cognitive Skills

The traditional course focuses on the imparting of theoretical knowledge, while paying insufficient attention to cultivating students' high-level abilities to analyze and solve complex supply chain problems [3]. Practical teaching links are relatively weak, leaving students with few opportunities to apply theoretical knowledge to real-world scenarios. The assessment method emphasizes knowledge memorization, which cannot effectively evaluate students' high-level abilities and is not conducive to the improvement of students' comprehensive literacy.

This innovative teaching model explores a diversified and multi-dimensional teaching evaluation system, with a particular focus on process-oriented hierarchical evaluation. Assignments are divided into three levels: basic level, advanced level, and challenging level. At the same time, classroom performance is valued, aiming to evaluate students comprehensively in terms of knowledge, ability, thinking, and literacy.

3. Innovative Design of Course Teaching

3.1 Philosophy and Ideas of Innovative Course Design

Guided by the concept of "student-centered and teacher-led," the overall idea of the teaching innovation is summarized as "one guiding principle + dual-driver model + blended instruction."

• "One guiding principle": Ideological and political education runs through the entire course to cultivate capable young people who can shoulder the responsibility of national rejuvenation. It involves deeply exploring the ideological and political elements in the course and organically integrating them with professional knowledge.

• "Dual-driver model": The integration of BOPPPS and PAD Class theories not only provides a systematic and complete teaching process framework to ensure the orderly development of teaching activities (with all links closely coordinated to serve the achievement of teaching goals) but also emphasizes students' autonomous learning and interactive communication, giving students more space for thinking and expression and stimulating their learning initiative and creativity [10].

• "Blended instruction": It gives full play to the systematic advantages of BOPPOS in teaching process design and highlights the unique role of PAD Class in promoting students' autonomous learning and enhancing interactive communication, thus effectively improving teaching effectiveness [9].

3.2 Measures for Teaching Innovation

To address the above pain points, the path of teaching innovation is as follows:

3.2.1 "One Guiding Principle"—Integration of Ideological and Political Education with Knowledge Imparting

Breaking the limitations of traditional textbook chapters, the teaching content is reorganized into modular units based on the supply chain process, including supply chain strategic planning, procurement and supplier management, production and inventory control, logistics distribution and transportation management, and supply chain risk management [6].

3.2.2 "Blended Instruction"—Resource Integration to Build a "Synchronous + Asynchronous" Learning Space

Based on the flipped classroom model supported by Rain Classroom, the "offline + online"

blended instruction is integrated to coordinate the three teaching stages of "pre-class, in-class, and post-class," realizing full-process precise connection and seamless alignment, with teaching links interlocking and progressing step by step. Online teaching tools are used to optimize the classroom process and enhance student participation.

The course resources include two categories: video resource libraries and collaborative tools/platforms:

Video resource libraries: Rain Classroom is used for course introduction and assignment submission; China University MOOC provides online courses for preview and supplementary learning; Tencent Meeting is used to invite experts to share practical experience and conduct interactive Q&A sessions.

Collaborative tools/platforms: FlexSim is used for logistics efficiency simulation and comparison; BoardMix helps students organize knowledge; Tencent Docs supports data sharing during group discussions and remote guidance from teachers. These resources provide support for teaching from different aspects.

3.2.3 "Dual-Driver Model"—Teaching Activities to Stimulate Internal Motivation of All Students throughout the Process

The teaching process integrates case analysis and game-based teaching methods. Through innovative cases, students are guided to think, discuss, and communicate using basic theoretical knowledge [7]. By raising questions that inspire thinking and stimulate discussions, students can better understand and master knowledge points and improve their ability to apply theoretical knowledge. Teachers set up scenarios where students play the roles of enterprises in the supply chain to conduct simulated supply chain operations, enhancing their ability to solve practical problems. Knowledge acquisition is achieved through game-based activities, which improves students' thinking, judgment, and observation abilities, and highlights the "student-centered" teaching philosophy. The specific implementation is as follows:

(1) Pre-class Stage (O + P1)

Teachers: Define teaching objectives and release pre-assessment tasks. They clarify the teaching objectives of the current lesson and design pre-assessment questions to understand students' knowledge foundation and preview progress.

Course content: Specify learning objectives to help students clarify the learning direction; present the knowledge structure to show the framework of course knowledge points; conduct pre-learning tests (pre-assessment) to check the effectiveness of students' preview.

Students: Conduct preview discussions to share preview experiences with peers; complete the pre-assessment to test their initial mastery of knowledge; conduct self-evaluation to understand their learning status based on pre-assessment results.

(2) In-class Stage (B + P2)

Teachers: Conduct classroom bridge-in (by raising questions to attract students' attention and introduce the course content) and organize participatory learning to guide students to actively engage in classroom activities.

Classroom bridge-in: Stimulate students' interest and create a positive learning atmosphere.

Focused lectures with reserved thinking space (P): Teachers explain core knowledge while leaving some content for students to explore independently.

Knowledge assimilation (A): Students conduct independent thinking to digest and absorb the knowledge.

Group discussion and evaluation (D): Students participate in group discussions to exchange ideas, and evaluations are conducted by teachers or students.

Students: Engage in learning after their interest is stimulated; conduct independent thinking to

internalize knowledge; participate in group discussions to share viewpoints and learn from each other. This part also reflects the concept of PAD Class, emphasizing students' active learning and interaction.

(3) Post-class Stage (P2 + S)

Teachers: Release post-assessment tasks to test students' mastery and application of knowledge; conduct teaching summaries to sort out the teaching process and reflect on teaching effectiveness.

Course content: Conduct post-class tests to evaluate learning outcomes; carry out evaluation and feedback to collect students' learning feedback and provide references for subsequent teaching; guide students to summarize and reflect to consolidate knowledge and improve learning abilities.

Students: Complete the post-assessment to test their learning effectiveness; present their learning achievements; conduct self-summary and evaluation to reflect on the learning process and clarify the direction for improvement.

3.2.4 Diversified and Multi-Dimensional Teaching Evaluation System

• Process-oriented evaluation: The proportion of process-oriented evaluation in the total score is increased to 40%. It records students' pre-class preview status (including completion of preview tasks and pre-assessment scores) through Rain Classroom; evaluates their in-class participation (such as the quality of group discussion speeches, participation in real-time feedback like voting and bullet comments, and performance in individual quick-answer sessions); and assesses their assignment completion (based on accuracy, innovation, and attitude). During group discussions, students' teamwork ability, communication skills, and ideological and political performance (e.g., whether they demonstrate a spirit of cooperation and concern for social issues) are observed and evaluated accordingly. Assignments are also stratified into different levels [8].

• Basic consolidation assignments (Basic level): Targeted at students with weak logistics management foundations and insufficient understanding of core course concepts and basic principles. These assignments aim to help students consolidate basic knowledge, build a solid knowledge framework, and enhance learning confidence. By completing these assignments, students can master basic course concepts and processes (laying a foundation for subsequent learning) and improve their ability to summarize and express in writing, thus overcoming their fear of learning.

• Ability enhancement assignments (Advanced level): Designed for students with a certain knowledge foundation who are eager to improve their application and analysis abilities [1]. Through case analysis and small-scale project assignments, these tasks cultivate students' ability to apply knowledge to solve practical problems. Completing these assignments enables students to apply theory to practice (improving their professional abilities) and enhance their teamwork and communication skills.

• Expansion and innovation assignments (Challenging level): Suitable for students with strong learning abilities who pursue in-depth exploration and innovation. Through industry research and scheme design assignments, these tasks cultivate students' innovation and research abilities and broaden their industry horizons. By completing these assignments, students can gain in-depth understanding of the industry, improve their innovation ability and comprehensive literacy, and accumulate experience for future career development and academic research.

• Summative evaluation: The final exam accounts for 60% of the total score. The exam questions focus on knowledge integration and application, reducing memory-based questions and increasing comprehensive, analytical, and innovative questions. For example, students are asked to analyze a real enterprise's supply chain problem and propose solutions using the knowledge they have learned. At the same time, students' understanding and application of ideological and political elements are assessed (e.g., whether corporate social responsibility is considered in the proposed

solutions). In addition, students are required to write a course paper to reflect on their learning gains, experiences, and their understanding and application of professional knowledge and ideological and political content, so as to comprehensively evaluate students' knowledge mastery, ability improvement, and the development of ideological and political literacy [5].

4. Major Educational Effects and Achievements

Through this teaching reform and innovation, the course Enterprise Logistics and Supply Chain Management of our university (a first-class offline undergraduate course in Shaanxi Province) successfully concluded its project in 2024. Meanwhile, students' professional practical and innovative abilities have been significantly enhanced:

Our students won 2 national second prizes in the "National College Students Smart Supply Chain Innovation and Entrepreneurship Competition";

They obtained 3 provincial first prizes, 6 second prizes, and 9 third prizes in the Shaanxi Logistics Simulation Competition;

They also won 4 provincial bronze awards in the 4th China Internet Plus College Students Innovation and Entrepreneurship Competition.

The quality of student employment has improved year by year, with the employment rate of logistics majors remaining above 98% for the past three years.

5. Conclusion

Through the innovative practice of "one guiding principle, dual-driver model, and blended instruction empowering classroom teaching: integrating BOPPPS with PAD Class," the course Enterprise Logistics and Supply Chain Management has addressed the problems of low student engagement, poor participation, and insufficient advancement to high-level knowledge. Students' enthusiasm for attending classes has been significantly improved, their sense of participation in class has been greatly enhanced, and their critical thinking (characterized by being diligent in thinking and good at asking questions) has been cultivated, creating a lively classroom atmosphere.

By leveraging the advantages of blended instruction and information technologies such as Rain Classroom, teachers determine the organization of offline teaching based on online feedback and update online resources according to offline teaching effects. Through reasonable design and organization of course teaching, teachers guide students to shift from passive listening to active learning, enabling them to learn to think and solve problems, and thus better achieving the course's teaching goals.

Acknowledgements

1) 2024 University - level Teaching Reform Project of Shaanxi University of Science and Technology (granted number 2024JG058)

2) 2024 University - level High - quality Experiment Project of Shaanxi University of Science and Technology (granted number JPSY24006)

References

[1] LU M. Exploration on the Mixed Teaching Mode of Supply Chain Management Course in the Post Epidemic Era[C]//Proceedings of the 14th International Conference on Education Technology and Computers (ICETC '22). 2023: 96-102.

[2] Rongjun C, Xiaomei L, Qiong N, et al. BP-CM Model: A teaching model for improving the teaching quality of IoT hardware technology based on BOPPPS and memory system [J]. Education and Information Technologies, 2022, 28

(6): 6249-6268.
[3] Yahia Zare Mehrjerdi. "Excellent supply chain management", Assembly Automation, 2009.
[4] Chen W, Li Z, Tang Y, et al. Three Approaches to the Design of a Golden Online Course on Data Structure[J]. IEEE, 2020.CSEI50228.2020.9142523.
[5] Lu Y, Wang Z, Chen M. Research on the construction of cheerleading technique evaluation and teaching system integrating deep visual recognition and cognitive feedback mechanism [J]. Scientific Reports, 2025, 15 (1): 33197-33197.
[6] Gill F. Gender, Intimacy, and Class in a Changing China: The Individual and Social Change[M]. Taylor & Francis: 2025-08-19: DOI:10.4324/9781003590651.
[7] Liao X. The Practical Path of Promoting the Teaching Innovation of Civics and Political Science Classes in Colleges and Universities with Research and Study Tourism as the Carrier [J]. Education Insights, 2025, 2 (6): 10-16.
[8] Hao H, Chen W. Research on the Application Effect of BOPPPS and Chat GPT-Based AI-Assisted Teaching in the Machine Learning Course [J]. The Asia-Pacific Education Researcher, 2025, (prepublish): 1-12.
[9] Liao X. The Practical Path of Promoting the Teaching Innovation of Civics and Political Science Classes in Colleges and Universities with Research and Study Tourism as the Carrier [J]. Education Insights, 2025, 2 (6): 10-16.
[10] Gao L, Chen S, Bai Y, et al.Research Progress on the Application of BOPPPS Teaching Model in Domestic Emergency Education[J]. Journal of Contemporary Educational Research, 2025, 9(1):32-38. /jcer.v9i1.9531.