

# Design and Effect of Hybrid Teaching Reform of Cost Accounting under the Smart Classroom Model

Zhou Jing,Ran Jiayu

Dongguan City University, Dongguan, China

**Abstract:**To solve the teaching problems of Cost Accounting, such as abstract theories, disconnection from practice, and insufficient student initiative, and to meet the demand for accounting talents in the digital era, this study constructs a hybrid teaching model of “online independent study + offline interactive inquiry + after-class expansion and improvement” based on the smart classroom platform. Teaching practice was carried out in the financial management major by reconstructing teaching objectives, optimizing teaching content, innovating teaching processes, and reforming the evaluation system. Practice shows that the reform model has effectively improved students’ course participation, theoretical application ability, and digital literacy, significantly enhanced teaching effects, and provided a feasible path for the teaching reform of accounting courses in application-oriented undergraduate colleges.

**Keywords:** Smart Classroom; Cost Accounting; Hybrid Teaching; Teaching Reform; Application-Oriented Talent Training

## 1. Introduction

### 1.1 Research Background

With the rapid development of the digital economy, big data and artificial intelligence have been deeply integrated with the accounting industry. Enterprises’ demand for accounting talents has shifted from traditional accounting-oriented talents to compound talents with cost control, data analysis, and decision support capabilities. As a core course for accounting majors, Cost Accounting is highly theoretical, practical, and comprehensive, serving as a key carrier to cultivate students’ cost accounting and management abilities. However, traditional teaching has obvious shortcomings: teaching content overemphasizes

theory and neglects practice, disconnected from real enterprise cost management scenarios; teaching methods are mainly lecture-based with insufficient classroom interaction, leading to passive learning; assessment methods are single, relying on summative examinations, which cannot comprehensively evaluate students’ practical ability and comprehensive literacy; digital teaching tools are superficially applied and cannot support personalized and precise teaching.

Smart classrooms, relying on big data, cloud computing, and mobile internet technologies, realize the organic integration of online and offline teaching resources, breaking the time and space constraints of traditional classrooms and providing new ideas for solving the above teaching problems. As the core application model of smart classrooms, hybrid teaching combines the flexibility of online independent learning with the depth of offline interactive teaching, which can fully mobilize students’ learning enthusiasm and improve teaching quality. Therefore, exploring the hybrid teaching reform path of Cost Accounting under the smart classroom model has important theoretical and practical significance.

### 1.2 Research Status at Home and Abroad

Foreign research on hybrid teaching started relatively early. The U.S. Department of Education issued the *Hybrid Learning Guide* in 2009, defining hybrid teaching as the organic combination of online learning and face-to-face teaching, and affirming its advantages in improving learning effects and teaching efficiency. Since then, academic circles have conducted research on hybrid teaching model design, implementation strategies, and effect evaluation, forming mature teaching design frameworks such as the ADDIE model and SAMR model. In the teaching of accounting courses, foreign universities generally attach importance to the integration of practical teaching and digital technologies. For example,

Harvard Business School adopts the “case teaching + online simulation” model in accounting courses, effectively improving students’ decision-making ability.

Domestic research on smart classrooms and hybrid teaching has developed rapidly in recent years. Scholars have carried out many explorations on the hybrid teaching reform of accounting courses, but existing studies still have deficiencies: first, some studies focus on the theoretical construction of teaching models and lack specific implementation processes and detailed design; second, most evaluations of teaching reform effects adopt qualitative analysis with insufficient quantitative research; third, the hybrid teaching strategy design for core knowledge points of Cost Accounting is relatively weak. This study aims to make up for the above deficiencies, construct an operable hybrid teaching model, and verify the reform effect with empirical data.

### **1.3 Research Purpose and Significance**

The purpose of this study is to design a hybrid teaching reform plan for Cost Accounting based on the smart classroom platform, reconstruct teaching objectives, teaching content, teaching processes and evaluation systems, and verify the effectiveness of the plan through teaching practice, so as to provide practical references for improving the teaching quality of Cost Accounting.

The theoretical significance of this study is to enrich the research results of the integration of smart classrooms and accounting professional courses, and improve the design and evaluation system of hybrid teaching.

The practical significance is to solve the practical problems in traditional Cost Accounting teaching, improve students’ professional ability and digital literacy, and provide replicable and promotable experience for the teaching reform of accounting courses in application-oriented undergraduate colleges.

### **1.4 Research Methods and Ideas**

The research methods adopted in this study include four aspects. First, literature research method. It sorts out relevant literature on smart classrooms, hybrid teaching and Cost Accounting teaching reform at home and abroad to lay a theoretical foundation for the study. Second, action research method. Taking Grade 2023 students majoring in financial management

in an application-oriented undergraduate college as the research object, a one-semester hybrid teaching practice was carried out, and the teaching plan was continuously optimized through the circular process of “plan-implement-observe-reflect”.

Third, questionnaire survey and interview method. It collects feedback from students and teachers on teaching reform. Fourth, quantitative analysis method. It compares and analyzes the academic performance, classroom participation and other data of the experimental class and the control class to verify the reform effect.

The research ideas of this study are divided into four aspects: first, analyze the current situation and problems of traditional Cost Accounting teaching; second, construct a hybrid teaching model of Cost Accounting based on the smart classroom platform; third, carry out teaching practice and implement the reform plan; finally, evaluate the effect of teaching reform through quantitative and qualitative analysis and put forward optimization suggestions.

## **2. Analysis of the Current Situation and Problems of Traditional Cost Accounting Teaching**

### **2.1 Disconnection between Teaching Content and Enterprise Practice**

The traditional teaching content of Cost Accounting is mainly based on textbook theoretical knowledge, with two prominent problems: first, the content lags behind industrial development, failing to fully integrate new methods and technologies of enterprise cost management in the digital era. There are few practical application cases of activity-based costing and life cycle costing, and the application of big data in cost analysis is missing; second, theoretical knowledge is disconnected from the actual business of enterprises. Most teaching cases are virtual cases in textbooks, lacking real enterprise cost accounting data and management scenarios, making it difficult for students to understand the application logic of methods and requiring a long adaptation period after graduation.

### **2.2 Single Teaching Method and Insufficient Student Initiative**

Traditional teaching mainly adopts the model of “teacher lecturing + blackboard/PPT presentation”, with single and solidified methods.

Due to the abstract knowledge points and large amount of calculation in Cost Accounting, pure lecturing is difficult for students to understand, leading to a dull classroom atmosphere. Students are in a passive state of receiving knowledge, lacking opportunities for active thinking and inquiry, and it is difficult to stimulate learning interest. Classroom interaction is mainly one-way interaction of teachers asking questions and students answering, lacking multi-directional interaction such as group discussion and case inquiry, which is not conducive to cultivating students' teamwork and problem-solving abilities.

### **2.3 Weak Practical Teaching Links**

Cost Accounting is a highly practical course, but the practical teaching links in traditional teaching are weak: practical teaching content is simple, mostly repeated exercises of after-class questions, lacking comprehensive and design practical projects; practical teaching resources are scarce. Most colleges have not built a special cost accounting training platform, and students cannot access the cost management software actually used by enterprises; practical teaching time is insufficient. Limited by class hours, systematic training is difficult to carry out, and students' practical operation ability is hard to improve.

### **2.4 Unreasonable Assessment and Evaluation System**

Traditional assessment is dominated by summative examinations. The final examination score accounts for more than 70% of the total score, and the usual score only accounts for about 30%, which is mainly based on attendance and homework, with a single evaluation dimension. This assessment method cannot comprehensively evaluate students' practical ability, innovative ability and teamwork ability, and easily leads students to focus on results rather than processes, relying on cramming before examinations, which is not conducive to the digestion and absorption of knowledge.

### **2.5 Insufficient Digital Teaching Support**

Although some colleges have introduced online platforms such as Chaoxing Xuexitong, their application is only limited to basic functions such as uploading courseware and assigning homework, failing to give full play to the advantages of smart classrooms. There is a lack

of personalized learning push, real-time learning data monitoring, precise academic situation analysis and other functions, and it is impossible to realize the whole-process tracking and personalized guidance of students' learning process. The quality of online teaching resources varies, lacking high-quality videos and virtual simulation cases matching core knowledge points, which is difficult to meet the needs of independent learning.

## **3. Design of Hybrid Teaching Reform of Cost Accounting under the Smart Classroom Model**

### **3.1 Reform Concept and Core Objectives**

This study takes "student-centered, ability-oriented, technology-supported" as the reform concept, aiming to realize the deep integration of online and offline teaching through the smart classroom platform and solve the problems of traditional teaching. The core objectives of the reform include three dimensions: first, knowledge objective. Enable students to master the basic principles, core accounting methods and basic theories of cost management of Cost Accounting, and understand the application logic of digital technologies in cost management; second, ability objective. Improve students' cost accounting practical ability, data analysis ability, problem-solving ability and teamwork ability; third, literacy objective. Cultivate students' awareness of integrity, responsibility and innovative spirit to adapt to enterprises' demand for accounting talents in the digital era.

### **3.2 Optimization Design of Teaching Content**

#### **1.Reconstruct Curriculum Knowledge System**

Taking the actual process of enterprise cost management as the logical main line, the curriculum is divided into four modules: basic cost accounting, core cost accounting methods, cost analysis and control, and digital cost management. Contents such as activity-based costing, life cycle costing, and big data cost analysis are added to make up for the lag of traditional teaching content.

#### **2.Integrate Real Enterprise Cases**

Cooperate with local manufacturing enterprises and accounting firms to collect real cost accounting cases, which are designed in layers as basic cases, comprehensive cases and expanded cases, used for classroom lecturing,

group discussion and after-class expansion respectively to strengthen knowledge application ability.

### 3. Construct Digital Teaching Resources

Relying on platforms such as Chaoxing Xuexitong and Rain Classroom, a diversified resource library is built: 5–10 minutes animated videos of core knowledge points; full-process cost accounting virtual simulation training system; automatic correction question bank including multiple choice, judgment, calculation and case analysis; industry reports, policy documents, academic papers and other expanded materials.

### 3.3 Design of Hybrid Teaching Process

A three-stage hybrid teaching process of “pre-class independent study – in-class interactive inquiry – after-class expansion and improvement” is constructed.

#### 1. Pre-class Independent Study (Online)

Teachers release preview videos, courseware, basic exercises and case thinking questions through the platform, and students arrange their own study. The platform automatically records learning data, and teachers identify learning difficulties through academic situation analysis to prepare lessons precisely.

#### 2. In-class Interactive Inquiry (Offline + Online)

(1) Key and difficult explanation (15 minutes): Focus on explaining preview difficulties combined with animations and cases.

(2) Case discussion (25 minutes): Students discuss real cases in groups of 4–6 people, submit results through the platform, and teachers provide guidance, comment and summarize.

(3) Real-time quiz (10 minutes): Release questions online, automatically count results, and intensively explain high-frequency wrong questions.

(4) Practical operation (20 minutes): Log in to the virtual simulation system to complete practical operations, and teachers monitor and provide individual guidance in real time.

#### 3. After-class Expansion and Improvement (Online + Offline)

Complete expanded case analysis, industry material reading and question bank practice online, with timely correction and feedback from teachers; organize enterprise visits and cost accounting skills competitions offline; the platform provides online Q&A to encourage students to communicate with each other.

### 3.4 Reform Design of Assessment and Evaluation System

A diversified assessment and evaluation system combining “process assessment + summative assessment” is constructed, in which process assessment accounts for 60% of the total score and summative assessment accounts for 40%, to comprehensively evaluate students’ learning process and comprehensive ability.

#### 1. Process Assessment (60%)

Process assessment includes online learning situation, classroom performance, practical operation, group discussion results and other dimensions. The specific weight and evaluation criteria are as follows: (1) Online learning situation (20%): Evaluated according to video viewing, courseware reading, exercise accuracy and expanded task completion. (2) Classroom performance (15%): Evaluated according to interaction participation, real-time quiz and classroom discipline. (3) Practical operation (15%): Evaluated according to virtual training scores and practical report quality. (4) Group discussion results (10%): Teachers’ scoring accounts for 70%, and group mutual evaluation accounts for 30%.

#### 2. Summative Assessment (40%)

The final examination focuses on theoretical application and comprehensive analysis, reducing memorization questions. Case analysis and comprehensive questions account for no less than 60%. Objective questions are automatically corrected online, and subjective questions are answered on paper and corrected manually.

### 3.5 Teaching Safeguard Measures

1. Teacher team construction: Carry out digital teaching ability training, encourage teachers to practice in enterprises, and form teaching teams for collective lesson preparation and resource sharing.

2. Technical platform support: Ensure the stable operation of the smart classroom platform, optimize the virtual simulation training system, and provide technical support for students.

3. School-enterprise cooperation support: Establish stable practice bases, invite enterprise experts to give lectures, and jointly develop cases and training resources.

### 4. Practice and Effect Analysis of Hybrid Teaching Reform of Cost Accounting under the Smart Classroom Model

#### 4.1 Practice Objects and Implementation

## **Process**

Taking two classes of Grade 2022 majoring in financial management as objects, 45 students in the experimental class adopt hybrid teaching, and 43 students in the control class adopt traditional teaching. There is no significant difference in admission scores and learning foundation between the two classes. The practice period is the first semester of the 2023–2024 academic year, with a total of 48 class hours, including 16 online hours and 32 offline hours. The experimental class strictly implements the three-stage teaching process, while the control class adopts the traditional “lecture + practice” mode without using the smart classroom platform, and assessment is mainly based on the final examination.

## **4.2 Effect Evaluation Indexes and Data Sources**

The evaluation indexes include four dimensions: learning effect, learning participation, practical ability and teaching satisfaction. Data come from smart classroom platform records, score data of the experimental class and the control class, 45 valid student satisfaction questionnaires and teacher interview records.

## **4.3 Analysis of Reform Effect**

### **1. Significant Improvement in Learning Effect**

The average total course score of the experimental class is 82.3, and that of the control class is 75.6; the average final score of the experimental class is 78.5, and that of the control class is 71.2, with significant differences. The scores of core cost accounting methods and digital cost management modules in the experimental class are higher than those in the control class, and the average score of the digital module is 10.3 points higher.

### **2. Obvious Improvement in Learning Participation**

The average online learning duration of the experimental class is 28.6 hours, far exceeding the required duration; the average online interaction is 32 times per person, classroom speech is 4.2 times per person, group discussion participation rate is 100%, and 84.4% of students take the initiative to complete expanded tasks, all of which are significantly higher than those of the control class.

**3. Significant Enhancement of Students’ Practical Ability** The average virtual simulation training score of the experimental class is 85.7, and the

average practical report score is 83.5, both significantly higher than those of the control class. In the cost accounting skills competition, 44.4% of the winning groups in the experimental class, compared with only 11.1% in the control class.

## **4. High Student Teaching Satisfaction**

Students’ satisfaction with the hybrid teaching model is 93.3%, teaching content 91.1%, teaching methods 95.6%, and assessment methods 88.9%. Students recognize the flexibility of learning, practicality of cases and comprehensiveness of assessment; teachers believe that they can accurately grasp students’ learning situation and improve teaching efficiency.

## **5. Problems and Optimization Suggestions**

### **5.1 Problems Existing in the Reform**

First, students’ online learning autonomy varies greatly. Some students can take the initiative to complete online learning tasks and actively participate in interactions, but a few students still have low enthusiasm for online learning and perfunctory completion, affecting the overall teaching effect.

Second, the function application of the smart classroom platform is insufficient. Although the basic functions of the smart classroom platform are used, there is still room for improvement in personalized learning push and in-depth learning data analysis, and real precise teaching has not been realized.

Third, virtual simulation training resources need to be improved. The current virtual simulation training resources mainly cover the basic cost accounting process, lacking the simulation of complex cost management scenarios and digital cost management tools, which cannot fully meet the needs of students’ practical ability training.

Fourth, teachers’ digital teaching ability needs to be improved. Some teachers are not proficient in the application of advanced functions of the smart classroom platform and virtual simulation technology, affecting the implementation effect of the hybrid teaching model.

### **5.2 Optimization Suggestions**

First, strengthen online learning process management. Set personalized learning tasks and push learning content of different difficulties according to students’ learning progress and ability level; establish an online learning

incentive mechanism to reward outstanding students and improve students' learning enthusiasm; strengthen the supervision of the online learning process, and timely remind and supervise students with low learning enthusiasm. Second, deepen the application of the smart classroom platform. Strengthen cooperation with platform technology providers to develop personalized learning push functions and accurately push learning resources and exercises according to students' learning data; improve teachers' data analysis ability, identify learning rules and problems through in-depth analysis of students' learning data, and realize precise teaching guidance.

Third, improve virtual simulation training resources. Increase investment in the virtual simulation training system, cooperate with enterprises to develop complex cost management scenarios and digital cost management tool simulation modules, such as ERP cost module, big data cost analysis module; update training resources regularly to ensure that the training content is synchronized with the actual needs of enterprises.

Fourth, improve teachers' digital teaching ability. Regularly organize teachers to participate in digital teaching ability training, invite experts to carry out special lectures to improve teachers' application ability of smart classroom platforms and virtual simulation technologies; encourage teachers to carry out teaching research and explore new paths and methods for the integration of smart classrooms and Cost Accounting teaching.

## 6. Conclusion and Prospect

### 6.1 Conclusion

The hybrid teaching model of Cost Accounting under the smart classroom model constructed in this study effectively solves the problems of disconnection between theory and practice, insufficient student initiative, weak practical links and other problems in traditional teaching by reconstructing teaching objectives, optimizing teaching content, innovating teaching processes and reforming the evaluation system. It significantly improves students' learning effect, participation, practical ability and teaching satisfaction, providing a feasible path and reference experience for the teaching reform of accounting courses in application-oriented undergraduate colleges.

### 6.2 Prospect

In the future, the reform will be further deepened: strengthen the application of artificial intelligence in teaching, develop intelligent Q&A and intelligent scoring systems; deepen the integration of industry and education to realize the precise connection between teaching content and enterprise job requirements; carry out inter-college teaching cooperation to share resources and experience. Promote hybrid teaching to become the mainstream model of accounting courses, and provide strong support for the cultivation of compound accounting talents in the digital economy era.

### Acknowledgments

This paper is supported by Online Open Course Project of Cost Accounting, Dongguan City University. No. 2021zlgc006, July 2021. Dongguan City College Higher Education Teaching Reform Project: Research on Online-Offline Hybrid Teaching Reform of Cost Accounting Course Based on BOPPPS Mode, No. 2022yjjg019, January 2025.

### References

- [1]Li Dingqing. Construction and Practice of Hybrid Teaching Model of Cost Accounting[J]. Friends of Accounting, 2021(12): 156-160.
- [2]Zhang Dunli. Research on Accounting Teaching Reform Integrating Curriculum Ideology and Politics into Smart Classroom[J]. Public Finance Research, 2022(5): 112-120.
- [3]Ministry of Education. Action Plan for Educational Informatization 2.0[Z]. 2018.
- [4]Wang Zhuquan. Research on the Reform of Accounting Talent Training Model in the Digital Economy Era[J]. Accounting Research, 2020(8): 181-189.
- [5]Liu Junyong. Research on the Application of Hybrid Learning in Accounting Professional Courses[J]. China Educational Technology, 2021(7): 105-110.
- [6]Chen Li. Theory and Practice of Hybrid Learning[M]. Beijing: Higher Education Press, 2020.
- [7]Ministry of Finance. Outline of the 14th Five-Year Plan for Accounting Reform and Development[Z]. 2021.
- [8]Li Ming. Application of Smart Classroom in Cost Accounting Teaching[J]. Commercial

- Accounting, 2023(3): 123-126.
- [9]Zhang Wei. Research on the Application of Virtual Simulation Technology in Accounting Practical Teaching[J]. Research and Exploration in Laboratory, 2022(4): 256-260.
- [10] Garrison D R, Anderson T, Archer W. Critical thinking, cognitive presence, and computer conferencing in distance education[J]. American Journal of Distance Education, 2001, 15(1): 7-23.