



# AI Empowerment and Interactive Digital Teaching via Rain Classroom: Innovative Practice of Foreign Language Teaching Reform in Higher Vocational Education

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## Abstract

Aiming at prominent problems in higher vocational English teaching like limited class hours, superficial ideological-political integration, weak student motivation, and the “English is useless” misconception, this study uses the core units of New Future College English (Comprehensive Course 2) as a carrier. It integrates AI technology with Rain Classroom’s digital interactive tool to construct a four-dimensional teaching model of “thematic ideological-political integration, extended knowledge application, AI-empowered inquiry learning, and motivation stimulation through evaluation”. In teaching practice, distinctive cases such as automobile brand interpretation, BYD hot issues, and national culture exploration are embedded, combined with a group points incentive mechanism, effectively improving homework completion rate and classroom activity. The research shows that this model realizes in-depth integration of language and ideological-political teaching, breaks the traditional teaching predicament, stimulates students’ internal learning motivation, and provides practical references for higher vocational English digital teaching reform.

## Keywords

AI Empowerment; Rain Classroom; Higher Vocational English; Curriculum-based Ideological and Political Education; Foreign Language Audio-visual and Electronic Teaching

## Introduction

With the digital transformation of vocational education and the implementation of CIPE, college English for higher vocational education faces the triple missions of technological empowerment, teaching quality improvement, and value guidance. Digital and intelligent technologies, like large AI models and smart teaching platforms, have penetrated foreign language education. Tools such as Rain Classroom offer new ways for classroom interaction, learning status monitoring, and teaching resource generation, driving the evolution of foreign language teaching. The Guidelines require vocational education to explore educational elements and align skill training with value shaping, deepening CIPE reform in higher vocational English teaching.

However, current higher vocational English teaching has many practical problems. There's a contradiction between class-hour constraints and heavy teaching tasks, squeezing the space for CIPE integration. The "separation between CIPE and language teaching" is prominent, with ideological and political elements added mechanically. Traditional classrooms have insufficient interaction and a single evaluation method, leading to weak student motivation and utilitarian biases. The application of digital and intelligent technologies is superficial, lacking synergy and precise teaching design.

In recent years, academic circles have researched AI-empowered foreign language teaching, smart classroom construction, and CIPE in higher vocational English (Guo, Feng, & Hua, 2023; Kong, 2024). But empirical studies on the "AI tools + Rain Classroom interaction + textbook-based ideological and political education" synergy are scarce, especially replaceable teaching paradigms for higher vocational students and new-form textbooks. This study uses New Future College English (Comprehensive Course 2) as the teaching carrier to construct an integrated teaching model with digital and intelligent technology empowerment, interactive teaching support, and embedded ideological and political education, aiming to solve practical problems in higher vocational English teaching and provide references for digital reform and CIPE quality improvement.

## **1. Research Background and Core Issues**

### **1.1 Practical Dilemmas and Research Origin**

Higher vocational college English teaching has long faced multiple practical contradictions, which are the core bottlenecks restricting teaching quality and efficiency. First, there's a conflict between total class-hour constraints and diverse teaching tasks: the need to focus on test points for passing rates and cultivate practical language ability. Second, there's a conflict between CIPE requirements and fragmented language teaching: ideological and political elements are superficially integrated. Third, there's a conflict between students' lack of motivation and disciplinary biases: students see English as an exam-oriented tool. Fourth, there's a conflict between traditional teaching and digital learning situations: teacher-led indoctrination can't stimulate students' interest.

In recent years, the academic circle has studied AI-empowered vocational English and CIPE digital reform (Liu & Li, 2025; Wang, 2025), but most achievements only focus on superficial technology application and general teaching models, lacking adaptation to New Future College English (Chen, Cao, & Fowell, 2022) and failing to solve multiple pain points.

Based on this, this study constructs a highly synergistic and interesting vocational English classroom teaching model, aiming to achieve five-in-one goals and solve practical problems in vocational English teaching.

### **1.2 Research Significance**

**Theoretical significance:** This study breaks the traditional research paradigm of the binary separation of "language knowledge + ideological and political elements" in foreign language teaching, and constructs a deep integration teaching theory of "theme guidance + AI empowerment + inquiry-based learning" (Xie, 2024), which enriches the theoretical system of CIPE in foreign language courses of vocational education, fills the research gap of efficient higher vocational English teaching models under the digital background, and provides a theoretical reference for the teaching reform of basic disciplines in similar colleges and universities (Liu & Li, 2025).

**Practical significance:** It accurately solves the practical problems of tight class hours, heavy tasks, low learning interest, and deep cognitive biases in higher vocational English teaching, realizes the prominent focus and efficiency improvement of classroom teaching, and takes into account both the exam passing rate and the cultivation of practical language ability. It reverses the cognitive bias of "the uselessness of basic disciplines", strengthens students' cultural confidence and internal learning motivation, and creates a replaceable and probable innovative paradigm of foreign language audio-visual and electronic teaching (Wang, 2025; Zhang, 2026).

## **2. Core Research Ideas and Teaching Model Design**

### **2.1 Core Philosophy of the Teaching Model**

Abandoning the traditional teaching thinking of "teacher-centered lecturing and students' passive acceptance", and based on the digital advantages of foreign language audio-visual and electronic teaching, this study takes unit themes

as the core link, language knowledge points as the carrier, intelligent technology tools as the inquiry grasp, and CIPE as the value guidance to construct a four-dimensional teaching model of “thematic integration of ideological and political education, extended application of knowledge points, AI-empowered inquiry learning, and motivation stimulation through evaluation” (Xie, 2024). It promotes the natural penetration of ideological and political education into the whole process of language learning, realizes the transformation of students from “passive acceptance” to “active inquiry”, and achieves the organic unity of knowledge transmission, ability cultivation, and value shaping (Li, 2024).

## 2.2 Specific Implementation Paths

### 2.2.1 Thematic Anchoring and Exploring the Integration Points of Ideological and Political Education

Closely focusing on the core themes (digital communication, workplace wisdom, cross-cultural communication, humanistic literacy) of Units 1, 2, 4 and 5 of New Future College English (Comprehensive Course 2) (Chen, Cao, & Fowell, 2022), and highly conforming to the compiling characteristics of the textbook of “fostering virtue through education, competency-based, cross-cultural integration and vocational adaptation”, this study abandons the drawback of superficial stacking of ideological and political elements, and takes unit themes as the core grasp to accurately explore the core of value guidance and the integration points of ideological and political education. Unit 1 Connecting in the Digital Age focuses on communication literacy in the digital age, connecting with the ideological and political dimensions of network civilization, rational thinking and cross-cultural empathy; Unit 2 Work Hard, Work Smart is based on workplace survival and development, connecting with the ideological and political dimensions of vocational literacy, craftsman spirit and efficient learning; the theme of cross-cultural communication in Unit 4 connects with the ideological and political dimensions of cultural confidence, cross-cultural understanding and patriotism; the theme of humanistic literacy in Unit 5 connects with the ideological and political dimensions of humanistic care, sense of responsibility and lifelong learning. It realizes the embedding of ideological and political education in the logical system of unit teaching, resonates with language learning and vocational ability cultivation, and promotes the imperceptible implementation of CIPE (Liu & Li, 2025).

### 2.2.2 Extending Knowledge Points and Exploring Interesting Expansion Points

Closely following the textbook’s class hour planning and the requirements of key and difficult points, this study focuses on the high-frequency test points such as core vocabulary, sentence patterns, translation and reading in Units 1, 2, 4 and 5, abandons the fragmented and indoctrinated knowledge teaching model, and explores interesting and practical expansion content based on unit themes, taking into account both exam score improvement and the acquisition of practical language skills (Li, 2024). The details of knowledge point extension and interesting expansion of each unit are shown in Table 1, which not only focuses on core test points to ensure exam effectiveness, but also relieves classroom dullness through interesting expansion, breaks students’ cognitive bias of “English is useless”, and conforms to the compiling concept of the textbook of “integrating learning with application and promoting learning through interest” (Zhang, 2026).

### 2.2.3 AI-empowered Inquiry and Building a Closed Loop of Autonomous Learning

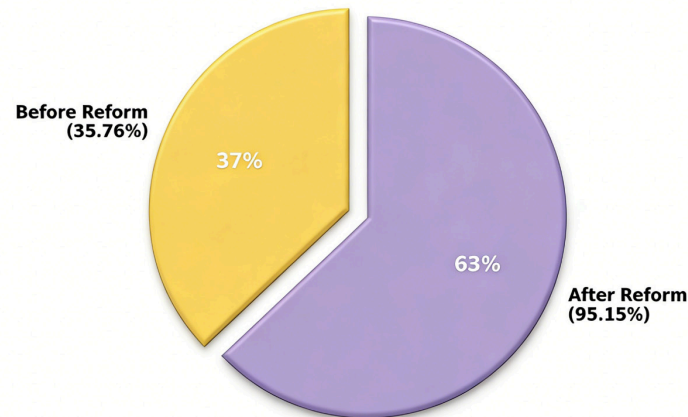
On the basis of knowledge point expansion, AI tools are used to build an autonomous inquiry closed-loop, realizing in-depth teaching and learning transformation. Relying on AI tools like Doubao and the Yangtze River Rain Classroom platform, a stepped inquiry question chain is designed to guide students to independently retrieve, sort and summarize information, changing the teaching model from “teacher’s instruction” to “students’ inquiry” (Kong, 2024). Taking the BYD case as an example, a three-tier question chain is designed, helping students screen information, sort context and complete language output with AI. Teachers transform into classroom designers, guides and evaluators. Through hierarchical questioning and task-driven teaching, students master language skills, understand language learning’s value and connotation, and reverse the cognitive bias of basic disciplines (Guo, Feng, & Hua, 2023).

### 2.2.4 Collective Positive Feedback and Stimulating Internal Learning Motivation

Relying on the bullet screen and contribution functions of Yangtze River Rain Classroom, a diversified positive feedback mechanism is built. Combined with the group cooperative points system, classroom interaction is strengthened, constructing a “real-time feedback - group mutual evaluation - points incentive - achievement display” closed-

loop evaluation system to stimulate students' internal learning motivation (Xie, 2024). The specific methods are: First, use the bullet screen function to guide students to send impressive knowledge in real-time for full participation and interaction. Second, collect after-class homework through the contribution function for digital and convenient submission. Third, implement the group points system: 165 students from 3 classes are divided into 21 groups. Participation in the bullet screen and homework contribution is counted by group, with points awarded and public notice (see Figure 1).

**Proportion of Rain Classroom Assignment Submission Completion Rate Before and After Reform**



**Figure 1. Pie Chart of Homework Submission Completion Rate Before and After the Reform of Rain Classroom Homework Contribution.**

Data source: Teaching statistics data from Rain Classroom background, statistical period is the homework of the same unit in the 2025-2026 academic year (2 weeks, irrelevant variables controlled). After the implementation of the group points positive feedback mechanism, the homework submission volume of 3 classes improved greatly. The overall submission completion rate rose from 55.76% to 95.15%, the average number of bullet-screen messages sent by students increased from 0.5 to 2.3 times per person before the reform, and the classroom satisfaction rate in the after-class questionnaire reached 92.7%. Bullet-screen interaction broke the silence of traditional classrooms. Students actively shared learning experiences, the classroom atmosphere became more active, and the previous situation of passive participation and homework procrastination changed. A positive learning cycle of “group cooperation - competitive incentive - active participation” was formed, which effectively strengthened students' sense of learning achievement and belonging (Wang, 2025).

### 3. Teaching Reflection and Theoretical Sublimation

#### 3.1 Reshaping and Positioning of Teachers' Roles

The core value of higher vocational English classrooms is not teachers' refined indoctrination of scattered knowledge points, but their role as classroom designers, value guides, and learning companions (Liu & Li, 2025). Relying on unit themes, teachers build a bridge between language learning and ideological and political education, help students establish correct outlooks, and strengthen cultural confidence and national identity. Teachers' core responsibility is to guide students to master autonomous learning methods and cultivate logical thinking and an inquiry spirit, rather than simply transmit knowledge (Kong, 2024).

#### 3.2 Regression and Reconstruction of the Essence of Teaching

The essence of basic discipline teaching in vocational colleges is to break exam-oriented and utilitarian barriers and achieve the organic unity of knowledge learning, ability cultivation, and value shaping (Zhang, 2026). Higher vocational English teaching involves not only language skill transmission but also the collaborative cultivation of thinking ability, humanistic literacy, and professional spirit. Through AI-empowered inquiry-based learning and

positive incentive classroom evaluation, students are helped to abandon the “learning for exams” mentality, clarify learning significance and development goals, realize “promoting learning through teaching and fostering people through learning”, and eliminate the cognitive bias of basic disciplines (Wang, 2025).

### 3.3 Optimization Directions and Limitations of the Teaching Model

Although this teaching model has achieved good results, it has limitations. First, it requires students’ digital literacy, and some students with a weak foundation face obstacles using AI tools (Kong, 2024). Second, the group points incentive model may lead to “free-riding” by individual students, and evaluation fairness needs improvement (Li, 2024). In follow-up teaching, it’s necessary to refine AI tool application, deepen the integration of ideological and political elements with language knowledge, and improve the diversified evaluation system (Xie, 2024). Hierarchical teaching design should be implemented for students with different English foundations and majors to enhance the teaching model’s adaptability (Zhang, 2026). The classroom teaching process should be continuously optimized, promoting the integration of foreign language audio-visual and electronic teaching with CIPE reform to improve classroom educational efficiency (Liu & Li, 2025).

## 4. Research Conclusions

Taking higher vocational non-English major students as the research object and relying on specific units of New Future College English (Chen, Cao, & Fowell, 2022), this study integrates AI technology and Rain Classroom tools with higher vocational English teaching, constructing a four-dimensional teaching model (Xie, 2024). Empirical teaching targets practical pain points like class hour constraints and insufficient learning motivation (Guo, Feng, & Hua, 2023). Practical tests lead to the following conclusions: First, the synergistic use of AI and Rain Classroom solves class-hour and efficiency problems in higher vocational English teaching (Kong, 2024). AI-empowered learning streamlines teaching and considers exam and practical language ability needs (Li, 2024), while Rain Classroom interaction and group points boost classroom participation and homework quality (Wang, 2025). Second, textbook theme anchoring and localized case integration achieve in-depth integration of CIPE and language teaching (Liu & Li, 2025), reversing students’ cognitive biases (Zhang, 2026). Third, the transformation of teachers’ roles and the construction of a positive evaluation system align with the digital reform of higher vocational foreign language education, realizing the synergistic advancement of knowledge, ability, and value. The teaching model has theoretical rationality and practical operability, providing a replicable path for digital reform and CIPE integration. In the future, hierarchical teaching strategies can be refined, AI teaching scenarios improved (Guo, Feng, & Hua, 2023), and the evaluation mechanism optimized (Li, 2024) to enhance educational quality and vocational adaptability.

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