

Research on the Path and Practice of Higher Vocational English Teaching Reform Empowered by Artificial Intelligence

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Abstract: The in-depth application of artificial intelligence technology injects new impetus into higher vocational English teaching to break through practical dilemmas. At present, major problems exist in higher vocational English teaching, including huge disparities in students' foundational proficiency, disconnection between teaching content and career demands, single evaluation methods, and teachers' insufficient digital literacy. Based on an analysis of the above predicaments, this paper comprehensively explores paths for AI-enabled teaching innovation from four dimensions: intelligent adaptive learning, construction of multimodal vocational scenarios, data-driven targeted assessment, and human-machine collaborative teacher development. Properly integrating artificial intelligence into the whole teaching process, this research aims to improve vocational college students' workplace English competency and provide reliable referential models for advancing teaching reform outcomes.

Keywords: Artificial intelligence; Higher vocational English; Teaching reform; Personalized learning; Intelligent evaluation

Online publication: August 31, 2026

1. Introduction

The new generation of artificial intelligence technologies is rapidly restructuring the education ecosystem and bringing great opportunities to resolve long-standing problems in traditional teaching. As a compulsory course for cultivating foreign communication abilities of technical and skilled talents, higher vocational English has long been criticized for being time-consuming yet inefficient. The *Curriculum Standards for General English in Higher Vocational Colleges (2021 Edition)* clearly define "workplace foreign communication" as one of the core literacies of English disciplines and set higher requirements for teaching^[1]. However, emerging challenges such as diversified student sources and lack of vocational scenarios, coupled with exam-oriented evaluation, make unified teaching approaches fail to reach intended teaching objectives. Therefore, how to leverage AI's

capabilities in perception, analysis, and generation to transform the ecosystem of higher vocational English teaching has become a critical research topic awaiting solutions.

2. Practical dilemmas facing higher vocational English teaching reform

2.1. Wide disparities in students' foundations make unified teaching incompatible with individual needs

Higher vocational colleges enroll diverse student groups, including regular high school graduates, secondary vocational students recruited through classified admissions, and social expanded enrollment learners, whose English proficiency varies sharply. A survey conducted by a vocational college shows that the average English entrance score of senior high school graduates is 75 out of 150, while that of secondary vocational students stands at merely 43; around 35% of students have a vocabulary of fewer than 1,000 words and cannot construct complete oral sentences ^[2]. Under the class-based unified teaching model, if lessons are designed according to secondary vocational students' level, it will be difficult to achieve the workplace goals stipulated by curriculum standards; if standard teaching progress is maintained, a large number of underachievers will fall behind. Even when tiered class teaching is adopted, conflicts in class scheduling and shortages of teachers render the measure superficial. Moreover, students within the same tier still exhibit heterogeneous abilities in listening, speaking, reading, and writing, and manual grouping cannot realize precise matching for individual learners.

2.2. Disconnection between teaching content and vocational orientations leads to insufficient cultivation of workplace language competency

Most topics in current higher vocational English textbooks follow the general college English system, covering subjects such as online life and ecological environment, without deep connections to specialized posts in intelligent manufacturing, modern services, medical care, and other vocational fields. An analytical study on textbooks of 12 vocational colleges reveals that 89% of textbook units are general topics, while only 11 involve specific vocational scenarios.

In classroom practice, oral teaching mostly stays at text reading and simple dialogues, lacking authentic or simulated workplace communication tasks. Students can only memorize sentence patterns instead of using language for real communication and expression. The competency objective of completing work tasks in vocational settings as specified in curriculum standards cannot be realized due to insufficient situational support ^[3]. For instance, a questionnaire survey of 312 interns shows that 76.5% of students state that current English courses lack tasks such as drafting foreign trade emails and reading and analyzing English equipment manuals. Mismatch between teaching supply and students' employment demands turns English courses into perfunctory compulsory credits, greatly undermining students' confidence and competence in cross-border communication during internships.

2.3. Single-dimension evaluation system with absence of process diagnosis and feedback

Current assessment of higher vocational English still mainly adopts the model of usual performance (attendance and homework) plus paper-and-pencil final exam, with summative tests accounting for over 70% of total grades. Exams focus heavily on objective questions testing grammar rules and word discrimination, with very few points allocated to listening and speaking ^[4]. A sampling survey of 286 higher vocational

colleges conducted by the Ministry of Education indicates that final exam scores make up more than 70% of total grades in 68.4% of surveyed institutions, and only 14.7% of schools include oral tests or project tasks in formal assessments.

Process evaluation mostly relies on teachers' subjective impressions, lacking continuous collection and scientific analysis of learning behavior data, which cannot accurately reflect individual learning trajectories and typical errors. A questionnaire shows that among 462 surveyed higher vocational English teachers, 81% rarely use learning portfolios or diagnostic tests, and only provide grades or total scores in feedback without pinpointing students' specific problems. In addition, when facing large classes, teachers cannot fully grasp the distribution of common student problems, resulting in delayed and vague evaluation feedback, and the diagnostic function of assessment to promote learning almost disappears.

2.4. Teachers lacking digital literacy leading to superficial integration of intelligent technology and teaching

Most higher vocational English teachers only understand AI teaching applications at shallow levels, such as playing audio and video or using APPs for attendance taking. Their willingness to adopt tools such as learning analysis dashboards, adaptive learning engines, and intelligent essay grading is relatively low. Some teachers fear human-machine collaboration will weaken teacher-student emotional communication and worry about being replaced, thus resisting in-depth teaching reforms^[5]. A survey of English teachers in the Yangtze River Delta vocational colleges notes that 73.5% apply AI in resource playback or attendance, while only 9% use AI for essay grading. Meanwhile, 58% of surveyed teachers hold resistance to AI applications and suffer from "technology replacement anxiety." Furthermore, teachers' overall intelligent education literacy lags behind demand, which has become a major obstacle to the implementation of AI-enabled teaching reform. A shift from ornamental to integrated innovative application is urgently needed.

3. Paths and practices of higher vocational English teaching reform empowered by artificial intelligence

3.1. Construct personalized learning paths based on intelligent adaptive learning platforms

Supported by knowledge graphs, collaborative filtering, and learning sequence analysis technologies, intelligent adaptive learning platforms can dynamically diagnose students' proficiency in vocabulary, grammar, and listening, generate personal digital portraits, and push corresponding learning tasks and resources in real time to realize targeted supply and individualized cultivation. After logging in, the system assigns micro-lessons, challenge exercises, and AI conversations matching students' test scores, and adjusts question difficulty according to answer accuracy^[6]. In this context, teachers shift from uniform lecturers to learning planners and intervenors. Relying on background diagnostic reports, teachers identify common weak points and adjust classroom teaching priorities. The combination of online adaptive learning and targeted offline tutoring effectively addresses the lack of personalized guidance in large-class teaching.

Take the workplace general English course "Intelligent Tutoring and Targeted Remedial Teaching" designed for freshmen in vocational colleges as an example. In the first week of the semester, students take adaptive graded tests in listening comprehension, vocabulary & grammar, and short reading. The system generates individual ability graphs. For example, if a student performs poorly in listening recognition and

business vocabulary, the platform pushes pronunciation imitation and industry root word games, and sets situ dictation every two days ^[7]. Two weeks later, the system conducts a second test to further collect students' learning outcomes and progress.

3.2. Adopt multimodal AI technology to build immersive vocational language scenarios

With speech synthesis, natural language processing, and virtual reality technologies, vocational colleges can create workplace communication scenarios close to real posts, providing more authentic simulated environments for higher vocational English teaching. Supported by VR simulation, dialogue robots, and virtual avatars, students can interact with AI customers, coworkers, or patients in digital workshops, foreign-related hotels, and live-streaming foreign trade studios. For example, students majoring in electrical automation can communicate with coworkers and robots in a “digital workshop” to practice communication skills ^[8]; tourism and hotel management students can interact with guests in “foreign-related hotels” to improve their language proficiency. Such technical support converts abstract workplace language tasks into perceptible and interactive training projects, making up for the shortage of physical equipment and real-life scenarios ^[9]. Students practice repeatedly in immersive, low-anxiety virtual environments, greatly improving the fluency and appropriateness of language output, and aligning language learning with post requirements.

Take the practical training course “Intelligent Front Desk English Reception” for hotel management freshmen as an example. Supported by virtual simulation platforms that create hotel scenarios, teachers assign three tasks: check-in handling, phone food ordering, and guest complaint resolution. Students wear headsets and converse with AI guests displaying emotional expressions on screen. During check-in tasks, AI guests randomly raise questions such as “Does the rate include breakfast?” and “Can I upgrade to a sea view room?”, requiring students to respond orally instantly. The system generates scores and improvement suggestions based on pronunciation accuracy, completeness of service expressions, and fluency, e.g., “Using ‘I’m afraid’ for gentle refusal sounds more appropriate.” After class, students can replay conversations for self-reflection. Teachers select typical recordings in subsequent classes to identify frequent pragmatic errors ^[10].

3.3. Build a data-driven intelligent evaluation system to realize targeted teaching decision-making

Based on AI essay marking, speech assessment engines, and learning behavior mining, teachers can embed evaluation into pre-class previews, in-class interactions, and after-class assignments to collect multi-dimensional data and form digital learning portraits. Intelligent systems instantly mark essays in terms of logical coherence, grammatical accuracy, and vocabulary richness, and track indicators such as pronunciation accuracy, classroom activity, and task completion time, generating class error distribution graphs and individual growth trajectories ^[11]. Teachers make targeted lesson preparation and intervention based on such data. Meanwhile, multi-subject evaluation, including human-machine joint assessment and peer review, can be introduced to turn evaluation into an in-depth learning session and encourage students to attach importance to practical language ability ^[12].

Take targeted teaching driven by intelligent marking for business English in cross-border e-commerce majors as an example. Teachers assign writing tasks such as English product introductions for wireless earphones. After students submit drafts, teachers use AI marking software to annotate grammar, spelling, and structural problems with sentence-by-sentence comments. For instance, suggestions like “up to 5 hours of

playtime” are provided to replace inappropriate expressions of battery life ^[13]. After marking, teachers analyze overall class errors based on system statistics. If nearly half of students confuse “charge” and “charging,” and 35% lack persuasive closing statements, teachers issue revision checklists requiring independent editing, group polishing, or reference to AI revisions.

3.4. Promote human-machine collaborative teaching research to improve teachers’ intelligent education literacy

Teachers are the key to AI-enabled teaching reform. Human-machine collaboration does not replace teachers, but enhances their professional capabilities. Intelligent live recording systems conduct multimodal analysis of classroom teaching, quantifying data such as teacher-student speaking ratio, question types, and interaction depth to generate reflection reports for precise lesson polishing. Meanwhile, generative AI can assist courseware production, corpus retrieval, and differentiated reading material generation, freeing teachers from repetitive trivial work and allowing them to focus on instructional design and emotional communication ^[14]. “AI + English teacher communities” and practical workshops integrated with real teaching scenarios can be established.

Take the thematic teaching research workshop “Generative AI Empowers Classroom Lead-In” as an example. The college’s English teaching and research office holds special training sessions covering theoretical explanations, software operation, resource creation, intelligent instructional design, and hands-on practice. In the session on creating lead-in video clips, teachers use digital human broadcasting platforms to produce English news short videos about booming domestic new energy vehicles overseas for classroom introduction ^[15]. After class, the teaching research team analyzes the actual effects and optimization suggestions of scenario creation based on intelligent recording systems to continuously improve teachers’ digital teaching ability and enthusiasm.

4. Conclusion

AI-enabled reform of higher vocational English teaching is not a simple superposition of technical tools, but an all-round transformation of teaching structure, procedures, and teacher-student relations. For practical problems including diverse student backgrounds and insufficient vocational scenarios, intelligent adaptive learning enables large-scale personalized instruction; multimodal vocational scenarios resolve the disconnection between language practice and posts; data-driven evaluation systems provide precise guidance for individualized teaching; human-machine collaborative research injects new momentum into teachers’ sustainable development. Technology integration must always adhere to the fundamental goal of education, and cold data cannot replace the warmth of language communication; attention should also be paid to algorithm ethics and privacy protection. As large language models mature, higher vocational English teaching will develop toward more adaptive and immersive effective forms. Teachers’ active acceptance of intelligent literacy and transformation into smart guides becomes a core factor for deepening teaching reform.

Disclosure statement

The author declares no conflict of interest.

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