

Artificial Intelligence Empowering the Reform Practice of Secondary Vocational English Teaching

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Abstract: In the digital era, the rapid development of artificial intelligence (AI) has injected new vitality into the reform of secondary vocational English teaching and has become an important support for solving pain points and improving teaching quality. Secondary vocational English teaching should focus on cultivating students' English application abilities required for professional posts, and use AI to empower teaching reform. Based on this, this paper studies the practice of AI empowering secondary vocational English teaching reform, systematically analyzes the existing dilemmas, expounds its important roles, and puts forward targeted practical countermeasures, so as to provide practical references for promoting the digital and intelligent reform of secondary vocational English teaching.

Keywords: Artificial intelligence; Secondary vocational English; Teaching reform; Practical countermeasures; Professional literacy

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1. Introduction

As a core base for cultivating skilled talents, secondary vocational education undertakes the important mission of improving students' language application ability, cultivating cross-cultural professional literacy, and supporting students' career development. Different from ordinary high school English, secondary vocational English pays more attention to practicality and professionalism, focusing on English communication skills required for future posts, such as business reception, equipment operation instructions, service communication and other scenarios. The emergence of AI technologies (e.g., speech recognition, virtual simulation, big data analysis) can accurately target the pain points of secondary vocational English teaching, optimize teaching processes, enrich teaching resources, innovate teaching models through intelligent means, and provide a new path for secondary vocational English teaching reform^[1]. Therefore, it is of great significance to research AI empowering secondary vocational English teaching reform.

2. Existing dilemmas of AI empowering secondary vocational English teaching reform

2.1. Insufficient intelligent teaching ability of teachers

After the deep integration of AI and secondary vocational English teaching, higher requirements are put forward for teachers' intelligent teaching ability. However, at present, many secondary vocational English teachers' intelligent teaching ability cannot meet the needs of reform. On the one hand, some teachers still stick to traditional teaching methods, lack understanding of the value of AI teaching technology, and regard AI as only an auxiliary teaching tool, ignoring its important role in learning situation analysis, personalized teaching, scenario construction and other teaching processes. As a result, AI cannot be truly integrated into teaching, but only stays in superficial applications such as online check-in and automatic homework correction, failing to reflect its intelligent characteristics. Secondary vocational English teachers lack sufficient digital skills; most teachers have not received systematic training on AI teaching tools, are unskilled in operating intelligent tools such as iFlytek Oral Evaluation and Doubao, cannot skillfully use big data to analyze students' learning data or design intelligent teaching activities, and even misuse technology for technology's sake, violating the original intention of teaching reform.

2.2. Inadequate implementation of personalized teaching

It is a common problem that secondary vocational students have uneven English foundations: some students have poor foundations with limited vocabulary, insufficient grammar knowledge and low learning interest, while others have good foundations and hope to increase professional English content to improve post-application ability. The traditional "one-size-fits-all" teaching model cannot adapt to these differences. Although AI should be an important tool to realize personalized teaching, its current application still has many deficiencies, making personalized teaching difficult to implement. On the one hand, some intelligent teaching platforms have simple learning situation analysis functions, which can only conduct simple statistics on basic data such as students' answer accuracy and learning duration, cannot deeply explore students' learning pain points, habits and hobbies, and cannot form students' learning portraits, resulting in untargeted learning resource push that cannot meet the learning needs of students at different levels. Some platforms assign weak students to difficult English dialogues with heavy vocabulary, damaging their confidence, while good students only do simple vocabulary exercises, failing to stimulate their interest. On the other hand, teachers do not make full use of the learning situation data generated by AI, do not adjust teaching strategies or improve teaching content based on data feedback, and still adopt unified teaching progress and methods, making the personalized advantages of AI unable to be exerted, and personalized teaching becomes a formality.

2.3. Disconnection between teaching content and professional scenarios

Professionalism is the main feature of secondary vocational English teaching, whose goal is to cultivate English application abilities meeting post needs. However, AI-empowered secondary vocational English teaching still has the problems of disconnection between teaching content and professional scenarios and insufficient intelligent scenario construction^[2]. On the one hand, some intelligent teaching resources lack professional pertinence, mostly general English content, with little professional English related to various secondary vocational majors (business English, tourism service, mechanical and electrical equipment, etc.), which cannot match students' future post needs, resulting in students "learning what is not used". On the other hand, intelligent scenario construction is inadequate. Although some schools have introduced virtual

simulation, VR and other technologies, most of them stay in simple scenario simulation without forming an immersive and interactive experience, failing to enable students to improve their English application ability in real post situations.

3. Important roles of AI in empowering secondary vocational English teaching reform

3.1. Conducive to optimizing the teaching process

AI technology can improve the whole process of secondary vocational English teaching, reduce teachers' repetitive workload, improve teaching efficiency, and allow teachers to devote most time and energy to teaching planning and student guidance. In the pre-class preparation stage, AI can quickly sort out teaching materials, generate teaching plans, find corresponding teaching materials after analyzing key and difficult points of textbooks, and formulate different teaching plans based on statistical analysis of students' learning status, thus greatly improving lesson preparation efficiency^[3]. In classroom teaching, AI can achieve intelligent interaction, correct students' pronunciation errors in time, and provide feedback to students' practice in time with the help of an intelligent answering system, enabling teachers to quickly understand students' practice and make timely adjustments. In the after-class consolidation stage, AI tools can correct homework, issue learning reports, analyze students' error types and learning difficulties, and push targeted review questions to achieve precise weakness remediation^[4].

3.2. Conducive to realizing personalized teaching

The biggest advantages of AI are big data analysis and personalized push, which can accurately identify each student's English foundation and implement targeted and stratified teaching. After collecting and sorting out students' learning data (answer records, learning duration, error types, hobbies, etc.), AI analyzes students' weaknesses and needs in detail, creates exclusive learning portraits for each student, and then pushes materials and tasks suitable for their characteristics^[5]. Weak students are given guidance on basic vocabulary, grammar explanation and simple dialogues to consolidate foundations and build confidence; good students are provided with professional English expansion, complex scenario dialogues and cross-cultural communication to enhance their learning potential and post-application ability^[6].

3.3. Conducive to connecting professional posts

The main goal of secondary vocational English teaching is to cultivate students' professional English application ability. AI can effectively connect teaching and professional posts, and enable students to improve post English application ability in simulated environments through intelligent scenario simulation. On the one hand, virtual scenarios suitable for different secondary vocational majors (business reception, tourism service, equipment operation, customer complaint handling, etc.) can be created. By letting learners enter the virtual environment to play corresponding roles and communicate with the system, the real post workflow can be simulated, thus improving students' language application ability and quick adaptability^[7]. In business English classes, AI can simulate different business scenarios to timely check whether students' service expressions are standardized; intelligent voice workshops can produce English listening materials with local accents to improve students' workplace communication adaptability^[8]. On the other hand, AI tools can integrate English resources related to professional posts, i.e., post terms, English work processes, industry standards, etc.,

enabling students to understand post requirements and familiarize work procedures while learning English, so as to apply what they have learned.

4. Practical countermeasures for AI empowering secondary vocational English teaching reform

4.1. Strengthen teacher training and improve intelligent teaching ability

Improving teachers' AI teaching ability is an important means to promote AI-empowered secondary vocational English teaching reform. We should start from three aspects: concept renewal, skill training and teaching research guidance, to form a secondary vocational English teacher team with digital literacy. Firstly, renew teachers' teaching concepts. Through special lectures, experience exchange meetings, teaching observation and other forms, make teachers realize the significance of AI for secondary vocational English teaching, establish the concept of technology promoting education development, abandon traditional teaching thoughts, and actively explore methods of integrating AI and English teaching^[9].

Secondly, carry out targeted skill training. According to the characteristics of secondary vocational English teaching, train teachers on various intelligent teaching tools, especially speech recognition tools, learning situation analysis platforms, virtual simulation systems, AI teaching research assistants, etc., focusing on cultivating teachers' ability to analyze learning situations with big data, design personalized teaching plans, and create intelligent teaching environments. Meanwhile, establish a long-term training mechanism, regularly arrange teachers to participate in various online and offline training, and actively carry out teaching skills competitions and cross-school exchanges with other schools to continuously improve teachers' digital application level and teaching innovation potential^[10].

Thirdly, strengthen teaching research guidance, set up AI teaching research groups, encourage teachers to carry out teaching research, explore integration models suitable for secondary vocational English teaching, summarize excellent teaching cases, achieve experience exchange, and promote teachers to transform from "knowledge imparters" to "intelligent teaching designers"^[11].

4.2. Rely on intelligent platforms and implement personalized teaching

Build an intelligent teaching platform with the help of AI technology, improve learning situation analysis and personalized push functions, and truly implement personalized teaching to meet the learning needs of students at different levels. Firstly, select an intelligent teaching platform matching secondary vocational English teaching, optimize platform functions according to the characteristics and teaching objectives of secondary vocational students, enrich the content of learning situation analysis modules, collect and deeply analyze students' learning data in an all-round way, accurately draw students' learning portraits, and identify their weak links, learning habits and hobbies^[12].

Secondly, push personalized learning resources and tasks according to learning portraits, implement stratified teaching, set different learning objectives and plans for students with different foundations, so that each student can get suitable learning content. Students with poor foundations practice basic vocabulary and grammar, and learn simple daily dialogues and common post terms; students with good foundations are assigned project-based learning content related to professional English, such as complex scenario dialogues and cross-cultural communication activities. Meanwhile, encourage students to use intelligent platforms for independent learning, support them in arranging learning progress and selecting content according to their

own conditions, and develop independent learning awareness. In addition, teachers should make full use of the learning situation data provided by the platform, timely adjust teaching strategies, optimize teaching content, and give individual guidance for students' weaknesses, so that personalized teaching can truly play a role ^[13].

4.3. Integrate professional scenarios and build an intelligent teaching model

Based on the professional characteristics of secondary vocational English and combined with post requirements of various majors, use AI technology to build an immersive and interactive scenario-based professional teaching model, so as to connect teaching content with professional posts.

Firstly, integrate professional post resources, cooperate with front-line enterprise employees and industry experts to sort out English knowledge and skills required for different professional posts, such as business negotiation and customer reception for business English majors, tour commentary and hotel service for tourism service majors, equipment operation and fault description for mechanical and electrical majors, and integrate them into intelligent teaching resources to ensure the professional pertinence of teaching content ^[14].

Secondly, use virtual simulation, VR, AR and other AI technologies to create virtual environments consistent with actual work posts, and let students carry out English practical training in virtual environments. For example, create virtual scenarios such as hotel front desk reception, business negotiation and tour commentary; students simulate English communication scenarios in posts through role-playing to improve language application ability; use intelligent voice interaction technology to simulate real post dialogues, correct students' pronunciation and expression errors in time, and improve communication accuracy.

Finally, create an AI-scenario-practice "three-in-one" teaching mode, integrate classroom teaching and post practice, and form a closed-loop learning process of "pre-class preview – classroom practice – after-class consolidation" with AI technology, enabling students to master English application ability in practical operation and achieve the effect of "integrating learning and application, applying what they have learned". Meanwhile, attach importance to the integration of AI and traditional teaching: adopt traditional lecturing methods when explaining basic knowledge, and use the advantages of AI in practical training to achieve the dual goals of knowledge imparting and ability cultivation ^[15].

5. Conclusion

In summary, AI technology provides new opportunities for secondary vocational English teaching reform, which can effectively solve the existing dilemmas, optimize the teaching process, realize personalized teaching, connect professional posts, and promote the digital and intelligent transformation of secondary vocational English teaching. AI empowering secondary vocational English teaching reform is a long-term process, which must be promoted by schools, teachers, enterprises and other forces. In the follow-up work, schools should continue to deepen the integration of AI and secondary vocational English teaching, constantly improve practical countermeasures, solve teaching problems, give play to the technical advantages of AI, make secondary vocational English teaching more targeted, effective and professional, and promote the high-quality development of vocational education.

Disclosure statement

The author declares no conflict of interest.

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