

Research on the Application of an AI Agent (Doubao) in Senior High School English Course Teaching

Zhichao Jia*

Huashan Middle School of the 2nd Division of Xinjiang Production and Construction Corps, Tiemenguan 841007, Xinjiang, China

**Author to whom correspondence should be addressed.*

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Abstract: With the continuous development of information technology, AI Agent (Doubao) has gradually entered senior high school English classrooms as a new type of teaching auxiliary tool. This paper aims to explore the application prospects and challenges of AI Agent (Doubao) in senior high school English teaching. The research finds that AI Agent (Doubao) can effectively enhance students' learning interest and independent learning ability, but it also faces challenges related to technical adaptability, teachers' and students' acceptance, and insufficient teaching resources and environment during the application process. To improve the application of this approach in classrooms, this paper proposes strategies from multiple perspectives, including enhancing teachers' professional abilities, stimulating students' interest in learning, and improving technical support. The research results provide useful reference for the wide application of AI Agent (Doubao) in senior high school English teaching in the future.

Keywords: AI agent (Doubao); Senior high school English teaching; Teaching application; Technical challenges; Teaching optimization strategies

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1. Introduction

With the deepening of the digital transformation of education, more and more emerging technologies have been introduced into classrooms. The emergence of AI Agent (Doubao) has opened up new channels for traditional senior high school English classrooms. As an innovative teaching auxiliary tool, AI Agent (Doubao) has been used in English classrooms by more and more English teachers, showing great potential in improving students' English learning efficiency and participation. It brings not only the expansion of resources and diversification of methods but also the reshaping of teaching relationships. Teachers are no longer the only disseminators of knowledge, and students are no longer mere passive recipients.

However, despite the broad theoretical application prospects of AI Agent (Doubao), there are still many

challenges in practical teaching. Structural changes are taking place in classrooms, and this transformation is not smooth. Teachers' understanding and mastery of new tools are limited, and students' learning motivation and usage habits do not always match the technology, which prevents the full release of AI Agent (Doubao)'s potential. Against this background, in-depth thinking about challenges and countermeasures to maximize its application effect is not just to catch up with technology, but to find a real response in the dimension of the essence of education, which has become an important issue that urgently needs to be solved.

2. Overview of the application of artificial intelligence in senior high school English teaching

The growing popularity of artificial intelligence technology is changing the teaching and learning of senior high school English. Personalized teaching, intelligent evaluation, and shared resource provision have brought disruptive changes to the traditional English teaching model. However, there are differences in the adaptability of students and teachers to artificial intelligence, and the integration of artificial intelligence technology and teaching content is not fully rationalized^[1]. Nevertheless, artificial intelligence technology has brought new opportunities to English teaching and learning, and has also triggered more reflections among front-line English teachers on improving teaching effects and student experience.

3. In-depth understanding of the application prospects of AI agent (Doubao) in senior high school English teaching

Among many AI-driven applications, the author has studied the adaptability of various AI applications in assisting senior high school English teaching. Each AI tool has its own areas of expertise. Through repeated practice, the author personally believes that when it comes to assisting English teaching, the most powerful and comprehensive AI agent is Doubao.

This study has used 4 AI tools to assist English teaching, namely Chat GPT, DS, Doubao, and Gemini. Only the results generated by Doubao in response to teachers' input instructions are the most comprehensive and can accurately understand teachers' intentions. For example, when the author wanted to design a teaching scenario that conforms to real life and input the instruction to it, the results generated by ChatGPT seemed rich in content but were highly misleading. In contrast, although the results generated by Doubao in response to the same instruction were not completely error-free after careful review, they could fully respond to teachers' instructions and demands. This is very rare, and it is a precious discovery made by the author after repeated exploration of multiple AI tools.

As a new educational method, AI Agent (Doubao) can assist students in English learning and provide teachers with opportunities for interactive and individualized teaching. It is not only a technical means but also a profound reflection and challenge to teaching concepts^[2]. In the current information-based educational background, students' needs for learning are gradually diversified. AI Agent (Doubao) meets these needs and opens up new possibilities for senior high school English teaching through intelligent and personalized methods. Education is no longer a one-way indoctrination but an interconnected and interactive process.

4. Challenges faced by an AI agent (Doubao) in senior high school English teaching

4.1. Problems of technical adaptability and teachers' and students' acceptance

New technologies enter classrooms at an extremely fast pace. The integration of artificial intelligence has negated the traditional teaching style of teacher-centered instruction, but its adaptability cannot be ignored. There are significant differences in technical application capabilities among different teachers. Some teachers are affected by factors such as a lack of understanding of AI or unfamiliarity with its functions and usage methods, leading to a disconnect between the application of AI Agent and teaching goals^[3]. On the one hand, this has a great impact on teaching effects; on the other hand, it makes students confused about the operation of AI tools, and some students even become dependent on AI, deviating from the essential attribute of learning.

Although AI Agent (Doubao) has strong technical strength, the adaptability of teachers and students is not optimistic. Many teachers are accustomed to the traditional classroom teaching model, unable or even reluctant to use new technologies and resist the changes brought by them; some students are also the same. Many students are accustomed to traditional learning methods and feel confused or anxious when facing complex and intelligent technologies^[4]. The smooth transition of teachers' and students' roles to a technology-driven learning model requires patience and a positive attitude.

4.2. Insufficient teaching resources and environment

Teachers need sufficient time and space to adapt to technology, but many schools struggle to provide teachers with the necessary training and supporting resources^[5]. In many senior high schools, teaching facilities and resources are still limited, especially in southern Xinjiang, where the author is located, which is a remote area with a low degree of technological popularization.

The application of AI Agent (Doubao) has provided new supplementary educational resources for English education, but the current status of resource integration is still restricted by many practical factors. Firstly, many primary and secondary schools lack sufficient funds and technology, making it impossible to widely apply numerous AI tools and platforms in teaching^[6]. In short, although AI Agent (Doubao) can provide flexible learning support, without stable hardware support and a high-quality network environment, everything is just empty talk; secondly, the combination of textbooks, curriculum content and AI technology is low, and the traditional textbook structure and teaching model are difficult to meet the development of intelligent technology. Inadequate resource integration results in many AI applications being only used as auxiliary means in classrooms, failing to give full play to their due role as the main position of teaching. Thirdly, many teachers' application level of AI Agent (Doubao) needs to be improved due to factors such as age, language expression ability, and personality.

5. Strategies to improve the application effect of AI agent (Doubao) in senior high school English course teaching

5.1. Enhance teachers' professional abilities and adjust teaching methods

In the process of using AI Agent (Doubao), teachers not only need to improve their technical operation level but also change their teaching concepts. The old model can no longer adapt to new students. Teachers should learn to use technical means to track students' learning progress in real time and change their original teaching methods. For different student problems, teachers can use AI Agent (Doubao) to carry out differentiated teaching according to students' different requirements, allowing students to actively participate in the learning process of knowledge

^[7]. Therefore, to better reflect the technical advantages, teachers must improve their own teaching concepts and methods, integrate teaching with technology, and change the traditional teaching model.

5.2. Optimize teachers' role positioning

AI technology endows teachers with the role of “no longer knowledge transmitters but learning organizers”. For example, in the 2019 edition of the People's Education Press textbook, the vocabulary teaching content mostly consists of words such as “accomplish” and “consistent”. Teachers can use AI Agent (Doubao) to design and conduct hierarchical vocabulary training and feedback according to different students' learning situations, enabling students to master words proficiently through efficient learning and flexibly use them in contexts. In short, teachers can use AI to analyze and mine students' learning big data, adjust teaching and learning strategies promptly, and provide students with effective guidance for problems existing in vocabulary memory and use^[8]. For another example, in the vocabulary class of Unit 4 “History and Traditions” in Compulsory Volume 2 of the People's Education Press, the author used AI Agent (Doubao) to create a large scenario that includes both “local context integration” and “logical progressive construction” and integrated it into a vocabulary teaching class—“let students play the role of a tour guide to introduce the Yotkan Ruins in Hetian”. In vocabulary teaching, the author logically used new vocabulary to guide students to generate sentences that conform to the large scenario through various vocabulary teaching methods such as compounding, derivation, conversion, and polysemy, building effective scaffolding for students' final output of “tour guide introduction”. In this way, teachers emphasize not only the transmission of knowledge but also the improvement of students' learning ability and emotional care, enhancing students' self-confidence in personalized learning and getting out of the predicament of the traditional teaching model.

5.3. Stimulate students' interest in English learning activities and deepen their participation

AI Agent (Doubao) can carry out teaching activities in ways that suit students' learning interests and progress, activating the classroom atmosphere. Using the advantages of technology, teachers can facilitate students to further study classroom knowledge after class and develop independent learning abilities while learning. For example, when teaching the reading and writing class of Unit 4 “History and Traditions” in Compulsory Volume 2 of the People's Education Press, the writing theme was “Describe a Place That You Like”. In the teaching design of this class, the author first wanted to attract students' attention and guide them into the classroom by creating a localized context. The general method is as follows—the author used AI Agent (Doubao) to generate a video with the following content: “I am Guli, a good friend of your teacher and a cultural ambassador of Korla. Recently, I have received a task to introduce my hometown to foreigners. Can you help me?” The teaching design of this link can not only effectively stimulate students' interest in English learning activities and deepen their active participation but also effectively build a cultural link between students and the local area.

5.4. Improve students' independent learning abilities

Improving students' independent learning abilities is the key to AI Agent (Doubao) assisting English teaching. Essentially, using AI Agent (Doubao) to assist English teaching means that it can provide students with personalized learning paths. Teachers should guide students to use the multi-functional learning tools provided by AI Agent (Doubao) for independent learning and cooperative learning, and fully tap students' innovative characteristics and independent learning abilities^[9]. Specifically, in the learning process, teachers should guide

students to learn to interact with these tools, that is, to accurately ask Doubao through their own language expression, and gradually develop the ability to “reasonably use the answers provided by Doubao”. For example, Doubao’s inquiry function can recommend some vocabulary and reading learning platforms for teachers and students, and its own “video call” and “voice call” functions can also be used as intelligent oral training software for students. English teachers can fully utilize the corresponding conveniences provided by it to assign corresponding oral homework to students when they can use mobile phones. In this process, teachers can also provide customized feedback appropriately according to students’ homework progress and completion effects to help them identify and improve weak links. Educators should guide students to understand that AI is not only a carrier of knowledge but also a tool to help them discover and solve problems^[10].

Teachers can also encourage students to formulate learning goals and plans with the help of AI Agent (Doubao), and design activities in classrooms that can stimulate students’ thinking, improve their critical thinking and independent learning abilities, actively increase students’ learning motivation and problem-solving abilities, and truly endow students with the dominant position in learning.

5.5. Build a diversified teaching environment

Under the background of AI teaching, the construction of a “trinity” teaching environment is required, which is not simply the construction of hardware and software, but the change of teaching concepts and the reform of interaction methods. AI Agent (Doubao) can provide exclusive content for each student (for example, using AI Agent (Doubao) to sort out wrong questions in an exercise and print them out for students to make targeted improvements). With the help of AI Agent (Doubao), teachers can design tasks of different levels to mobilize students’ participation and improve the enthusiasm for independent learning. The learning method is no longer limited to “teacher-centered lecture”, and teachers no longer “cram knowledge into students”. Instead, students are organized to discuss and explore problems in groups, changing the traditional classroom teaching model^[11]. AI not only provides intelligent tools for the learning environment but also endows learning with openness and freedom, allowing students to take the initiative to find interests, cultivate teamwork and social communication abilities, and create an imaginative, inquiry-based classroom.

5.6. Improvement of technical support and teaching equipment

The effective use of the AI Agent (Doubao) requires good technical support and equipment guarantees. Each classroom should be equipped with the corresponding hardware facilities and supported by a stable network to ensure the efficient operation of AI technology. Unstable equipment and network will harm AI Agent (Doubao), and may even become an obstacle to its use^[12]. Schools should upgrade equipment on time, ensure the sustainable update of teaching platforms, and actively communicate with technical personnel to solve potential technical problems in a timely manner, so as to make AI Agent (Doubao) an effective weapon to improve the quality of English teaching.

6. Conclusion

In summary, the application of artificial intelligence in senior high school English teaching should move beyond the level of technical demonstration and strive to make it a lasting teaching driving force. AI Agent (Doubao) has advantages in senior high school English teaching, but also faces problems in terms of technical support, teaching resources, and teacher adaptability. To use it to improve teachers’ teaching quality, teachers should find new

value in the transformation of their own roles, students should maintain motivation through their own learning autonomy, and the classroom environment should continuously adapt and optimize according to needs, thereby improving the application level of an AI Agent (Doubao). When teaching goals are consistent with technology, English teaching can have a clearer and more stable prospect.

Disclosure statement

The author declares no conflict of interest.

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