

Research on Application Strategy of Artificial Intelligence in Middle School English Teaching

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Abstract

This study discusses the application strategies of artificial intelligence in middle school English teaching. First of all, this research analyzes the main problems in English teaching, including the difficulty of satisfying students' individual needs, the single teaching resources and the heavy burden of teachers. Then, it digs out the importance of artificial intelligence in English teaching, such as improving teaching efficiency, meeting individual needs and enriching teaching resources. On this basis, the specific application strategies are put forward, including the development of intelligent teaching platform, the use of virtual reality and augmented reality technology, the construction of intelligent learning community and the strengthening of teacher training. This study aims to provide reference for the integration of artificial intelligence technology and English teaching.

Keywords

Artificial Intelligence; Middle School English Teaching; Personalized Learning; Teaching Strategy.

1. Introduction

With the rapid development of science and technology, the influence of Artificial Intelligence(AI) on people's life is gradually increasing. In recent years, Generative Artificial Intelligence (GAI) such as Deepseek, ChatGPT, Sora and others have developed rapidly. These Artificial Intelligences are now used in many industries and play an important role. National English Curriculum Standards for Senior High School (2020) points out that modern intelligence needs to play an important role in transforming students' learning styles. So that they can have fun and passion in practical and exploratory English activities[1]. The combination of Artificial Intelligence and English teaching is not only the requirement of NECS but also the trend of the society.

Many researchers have explored the combination of Artificial Intelligence and English teaching. Ju li and Bo Peng (2025) discuss the application of Artificial Intelligence (AI) in college English audio-visual speaking teaching. This study proposes suggestions such as strengthening data security and updating teaching evaluation[2]. Zhang Yuanyuan (2025) carries out an empirical study on the introduction of Artificial Intelligence (AI) into college oral English teaching. The study points out that AI has a significant positive effect on improving the accuracy and fluency of students' oral English practice[3]. Therefore, it is very important to explore the combination of information technology and English teaching to promote the development of English education, the development of teachers and the cultivation of students' English key competence. This study is devoted to exploring how to integrate Artificial Intelligence(AI) into traditional English classrooms of middle school, effectively integrate them with traditional English classrooms, and assist English teachers to improve the quality of English teaching.

2. Problems in Current English Teaching

2.1. Lack of Individuality

In the traditional middle school English teaching, teachers usually prepare teaching materials based on the whole class. It is difficult to take into account the individual needs of each student. In fact, students' English level, learning ability and interest are different. While teachers can only explain according to the fixed teaching progress and content. For students with weak language capacity, they are difficult to struggle to keep up with the course. While students with better foundations may find the content too simple and lose interest. In addition, there are differences in the learning styles of students, some students are more suitable for visual learning, while others are better at mastering knowledge through hearing or practice. However, it is difficult for traditional teaching models to flexibly adjust teaching methods to meet these differences. Teachers have limited time and energy to tailor learning plans to each student. Therefore, how to meet the individual needs of students has become a major problem in current English teaching.

2.2. Lack of Sufficient Teaching Material

At present, English teaching in middle schools mainly relies on textbooks and teachers' explanation, and the teaching resources and methods are far from sufficient. Although the textbook content is systematic, but often lack of interest and practicality. It is difficult to stimulate students' interest in English learning. In addition, students passively accept knowledge, lacking opportunities for active participation and interaction. Such teaching mode make students feel boring. At the same time, the limitation of teaching resources also hinder students' learning progress. For example, students are rarely exposed to the real English context, such as the culture, living habits and language expressions of English-speaking countries. In addition, some teaching content is outdated. For example, network buzzwords and emerging words are rarely included in the teaching content, resulting in a disconnect between what students learn and practical application. Therefore, the imbalance of teaching resources and methods has become an important factor restricting the improvement of English teaching quality.

2.3. Lack of Timely Feedback

In current English teaching, teachers undertake heavy teaching tasks, including preparing lessons, giving lectures, correcting homework and evaluating students' test performance. These tasks occupy a lot of teachers' time and energy, making it difficult for them to focus on improving the quality of teaching. Especially in the case of large classes, teachers need to face dozens of students, it is difficult to provide detailed guidance and feedback for each student. For example, in composition correction, teachers often can only give simple grades and comments, but cannot point out students' specific problems in detail and provide suggestions for improvement. Due to the limited time and energy, it is difficult for teachers to timely understand the learning status and needs of students, and can not adjust the teaching strategy according to the performance of students. Therefore, how to reduce teachers' burden and improve the timeliness of feedback has also become a major challenge in current English teaching.

3. Significance of Application of Artificial Intelligence in Middle School English Teaching

3.1. Improve Teaching Efficiency and Reduce Teachers' Burden

AI technology can deal with many repetitive tasks such as homework grading, test scoring, and grade analysis, significantly reducing teachers' burden. Through the intelligent system,

teachers can quickly obtain students' learning data, realize their language level. Then teachers can adjust teaching strategies according to students' learning results. For example, AI can automatically analyze students' compositions, point out grammar errors, vocabulary problems, as well as offer suggestions for improvement. This immediate feedback not only improves teaching efficiency, but also enables teachers to devote more time to instructional design and personalized instruction. In this way, teachers can focus more on the improvement of teaching quality, thus improving the overall teaching effect[4].

3.2. Meet the Individual Learning Needs of Students

AI is able to provide personalized learning content and recommendations based on students' learning data. For example, the intelligent learning system can recommend learning materials and exercises suitable for students according to their English level and learning progress. For students with weak language proficiency, the system can provide more grammar and vocabulary exercises; For students with better foundation, more difficult reading materials and writing tasks can be recommended[5]. In addition, AI can adjust teaching methods by analyzing students' learning styles. For example, for visual learners, the system can provide more picture and video resources; For auditory learners, more listening materials and phonetic exercises can be provided. This personalized way of learning can not only increase students' interest in learning, but also significantly improve their learning results.

3.3. Enrich Teaching Resources and Interactive Forms

AI technologies can integrate and generate diverse teaching resources, such as virtual reality (VR) and augmented reality (AR) technologies, to provide students with an immersive learning experience. For example, students can "visit" well-known places in English-speaking countries and experience local culture and life through VR technology. It can activate students' learning motivation and interest. In addition, AI can also provide language practice opportunities with real-context through intelligent systems. Students can have English conversations with intelligent assistants to practice oral expression and listening comprehension. This interactive form can not only improve students' language application ability, but also enhance their learning motivation. At the same time, artificial intelligence can also recommend the latest learning resources and hot topics through big data analysis, so that the teaching content is more close to practical application.

4. Strategies of Application of Artificial Intelligence in Middle School English Teaching

4.1. Develop Intelligent Teaching Platform to Realize Personalized Learning

Intelligent teaching platform is one of the important applications of artificial intelligence technology in education. Through big data analysis, it can automatically generate personalized learning plans based on students' learning data, such as test scores, study time and so on. For example, for students with insufficient vocabulary, the platform can provide high-frequency vocabulary learning tasks. For students with weak grammar, targeted grammar exercises can be provided. In addition, the platform can also help students practice speaking and listening. For example, students can get real-time pronunciation correction and grammar feedback by talking to an intelligent native speaker.

4.2. Introduce Intelligent Evaluation System, Optimize Teaching Feedback

Ai can be used to develop intelligent assessment systems to optimize the timeliness and accuracy of instructional feedback. For example, in composition correction, the intelligent system can automatically identify students' grammatical errors, improper use of vocabulary and problems with logical structure, and provide detailed suggestions for revision. This

immediate feedback helps students quickly identify and correct mistakes, thereby improving their writing. In addition, the intelligent assessment system can also be used for speaking and listening tests. Through speech recognition technology, the system can assess students' pronunciation accuracy and fluency, and generate detailed grading reports. According to these data, teachers can understand the overall performance of students and adjust teaching strategies accordingly.

4.3. Use Virtual Reality Technology to Create Real Communication Scenes

Virtual reality (VR) and augmented reality (AR) technologies can provide immersive learning experiences for middle school English teaching. For example, through VR technology, students can "enter" virtual scenes in English-speaking countries, such as museums, restaurants or streets, for contextualized learning. This immersive experience not only increases students' interest in learning, but also helps them better understand the cultural context of the language. AR technology can overlay virtual content into the real world, such as scanning a textbook picture via a phone or tablet to display relevant English explanations, pronunciation demonstrations or interactive exercises. In addition, VR and AR technology can also be used to simulate real language communication scenes, such as business negotiations, travel directions, etc., to help students practice practical application skills in a virtual environment.

4.4. Strengthen Teacher Training, Improve Application Ability of Artificial Intelligence

In order to ensure the effective application of artificial intelligence technology in English teaching, relevant training for teachers is needed. For example, schools can organize teachers to attend training courses on AI education tools to help them master the use of intelligent teaching platforms. At the same time, teachers also need to learn how to use AI-generated data analysis reports to optimize teaching strategies. For example, by analyzing students' learning data, teachers can find weak links in teaching and adjust teaching content accordingly. In addition, teachers need to learn how to integrate AI technology with traditional teaching methods to bring out the advantages of both. For example, in the classroom, teachers can use intelligent tools for interactive teaching, while combining face-to-face explanation and guidance.

5. Conclusion

Artificial intelligence technology has brought about remarkable changes in English teaching in middle schools. Through the application of intelligent teaching platform, intelligent assessment system, virtual and augmented reality technology and intelligent learning community, artificial intelligence not only meets the personalized learning needs of students, but also improves the efficiency and quality of teaching. These technologies make teaching more lively and interactive, while providing teachers with more tools and data to support them. In a word, artificial intelligence has broad prospects in middle school English teaching. By optimizing technology and strategies, we can create a more efficient and fun learning environment for students and take English education to new heights.

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