# An Analysis of the Application Strategy of Artificial Intelligence Technology in Elementary School English Teaching

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**Abstract.** In the context of the rise of artificial intelligence, how to realize the deep integration of artificial intelligence technology and subject teaching is a topic of concern for many teaching workers and front-line teachers at present. The application of artificial intelligence technology to elementary school English classroom teaching, so that the advanced artificial intelligence technology in the field of education to obtain a broader application area to achieve greater application value, can make a qualitative leap in the current stage of English classroom teaching. Based on this, this paper mainly analyzes the following points on the effective integration strategy of AI technology and elementary school English teaching.

**Keywords:** artificial intelligence · elementary school English · application value · application strategy

## 1 Introduction

In the era of big data, the development of information technology is increasing, the development of artificial intelligence technology has made it widely used in many aspects, and the English classroom has also produced great changes under the impact of artificial intelligence technology. Many students use the Internet and smartphones to learn English, and the future English class should also keep up with the times and make corresponding reforms and changes. The article dissects the value of artificial intelligence technology in elementary school English classroom, the ways of application and the current challenges that may be encountered in the application, in the hope that it can serve as a reference for English teaching [1].

## 2 Overview of Artificial Intelligence Technologies

### 2.1 Introduction to Artificial Intelligence

The term "artificial intelligence," which first appeared at the Dartmouth Conference in 1956, is a cutting-edge discipline involving computers, information technology, education, psychology, linguistics, neurology, philosophy, and many other fields, also known

as "human intelligence "It is also known as the "in vitro extension" of human intelligence. Because of the complexity of artificial intelligence technology research and development, involving multiple disciplines and multiple industries, the field of content, including philosophy, mathematics, computers, economics, linguistics and so on. Many fields, at the same time, because the academic research progress of each discipline is different, therefore, want to unify these disciplines to the research and development of artificial intelligence, the time sequence to overcome the larger knowledge and technical barriers. Also the AI industry technology is constantly evolving and its content is changing, and this change is difficult to describe in precise terms, which leads to the complexity of defining the concept of AI [2].

## 2.2  The Relationship Between Artificial Intelligence and English Language Teaching

**1) Artificial Intelligence Provides Dynamic Teaching Strategies for English Language Teaching**

English teaching activities are a complex and diverse process, which contains a variety of uncertain human factors, and artificial intelligence has the simulation of human thinking patterns and the reproduction of the thinking solution reasoning process as its most prominent features, so the complexity shown in the process of teaching English must be targeted by artificial intelligence for targeted solutions so that each learner can receive The complexity of the English language teaching process must be addressed by artificial intelligence so that each learner can receive personalized support and guidance. [3] Since "listening" and "speaking" are important components of elementary English teaching, adding AI as a cutting-edge technology to elementary English classroom teaching can greatly improve the quality of elementary English teaching. For example, teachers can use artificial intelligence systems in elementary school listening English listening exercises. The AI system plays standard pronunciation and accurate semantics for students. The original spoken English audio with complete and fluent grammatical structure. Students can feel the pure English pronunciation. At the same time, the AI system can also be used for students. The vocabulary, sentence patterns, grammar, etc. that are imitated after hearing the audio. Intelligent assessment and evaluation in all aspects. Accurate detection of whether the students comprehended in the learning process. Perform accurate and intelligent targeted detection.

**2) Artificial intelligence enables changes to the English classroom teaching model**

Most schools are still trapped in a prison of poor English teaching standards and poor quality teaching, so there is an urgent need to use science and technology represented by artificial intelligence to transform the power out of the dilemma. Artificial intelligence technology can develop its own merits in the field of phonics teaching and make up for the shortcomings of the English classroom process while maintaining the merits of the English classroom, which can not only adapt to the English teaching standards but

also be beneficial for the reform of the English classroom teaching methods and the improvement of students' learning methods [4].

**3) Artificial intelligence provides the basis for practical applications of English language teaching**

In China, the problem of insufficient practical and linguistic communication skills of students in English teaching has always existed. The establishment of an artificially intelligent English teaching system will play an important role in transforming the traditional English teaching system through modern information technology, improving the quality of English, and motivating students to learn English. It is an indispensable element for improving computer-assisted teaching using intelligent methods [5].

## 3    The Value of Artificial Intelligence Technology in Teaching English in Primary Schools

### 3.1    Smart Lesson Planning Simplifies Teacher Preparation Process

In the process of teaching English in elementary school, some primary school students are weak in English due to their own uneven knowledge reserves, but at the same time, there are many knowledge points that need to be mastered by students in this subject, and as they grow older, the difficulty of their English learning will increase. In turn, this adds a certain degree of difficulty to teachers' English lesson planning, taking into account each student's learning and ensuring that they are not left behind. This requires teachers to design and prepare lessons with due diligence so that every student can actively participate in English learning, thus improving the overall learning ability of students. The application of artificial intelligence technology by teachers will provide students with precise content and find the right areas to teach [6].

On the one hand, in the artificial intelligence environment, teachers can rely on the artificial intelligence platform to build accurate teaching classroom sessions based on the content of the textbook. With the data reports analyzed by AI, teachers can obtain the differences and commonalities of each student's learning situation in the classroom, and enhance teachers' understanding of their students to make a comprehensive assessment of their learning.

On the other hand, teachers can also use the teaching data analyzed by AI in their daily teaching to analyze each student's learning situation and prepare lessons in a targeted manner. For example, if the data presented by AI reveals that students have problems with mimeographing words, teachers can inform students to do a good job of pre-reading before class, recite and mimeograph more words, and increase the content of word teaching sessions in the classroom, so that students' vocabulary can be effectively accumulated. In the process of analyzing students' learning through data reports, teachers should not only focus on students' learning as a whole, but also analyze each student specifically to generate a report with differences. This will enable teachers to prepare their lessons smoothly and to arrange targeted learning plans for students with different learning situations, which is very useful for the overall consolidation of students' English knowledge. For example, if the overall word level in a class is not good,

but the data analysis reveals that one student has a very high rate of correct words, then the corresponding learning adjustments can be made to him/her, such as more learning in speaking, to promote the all-round development of elementary school students' English ability [7].

### 3.2 Smart Teaching Enriches English Learning Resources

Artificial intelligence technology has a very great advantage in integrating teaching resources. On the one hand, with the support of artificial intelligence technology conditions, big data collection becomes very convenient. Through artificial intelligence, a huge amount of English learning content resources can be integrated; each student can also develop his or her own personalized learning content resource library through individualized screening [8]. Such smart classroom management systems have been established in some schools in China, which have the role of detecting students' learning behaviors, in addition to a massive library of learning content expected to be a database of students' learning, all of which help to improve the information content of elementary school English teaching.

On the other hand, in traditional English teaching, the different levels of economic development among regions have led to an imbalance in teaching resources among these regions, and for some regions that lack teaching, it becomes difficult to improve students' learning level through precise teaching. However, nowadays, with the promotion of information technology, the introduction of artificial intelligence into English teaching is conducive to the integration of excellent English teaching resources in China and even abroad, which can eliminate the problem of unbalanced teaching resources among regions to a certain extent [9].

With AI technology, the collection of big data becomes very convenient, and it becomes easy to integrate high-quality teaching resources in China, which covers English video courses, a large vocabulary database, high-quality teaching preparation lesson plans, etc., alleviating the differences in English teaching between regions. For good schools, the AI system can specify scientific teaching programs and creatively explore advanced learning methods; for other schools, the synergistic nature of the AI system allows for more sharing of teaching resources with prestigious schools, and also allows for learning exchanges with students from other schools to harvest some better learning methods. In the AI environment, school-to-school communication becomes closer. Through these exchanges, high level teaching forms can be better promoted and the exploration of universals and particularities of elementary school teaching in different regions can be enhanced, thus promoting the sustainability of the quality of English teaching in elementary school in China.

### 3.3 Intelligent Assessment to Accurately Grasp Student Progress

Listening, reading, writing and speaking are four very important parts of the English learning process. The first one that is mentioned is listening and speaking. If teachers want students to improve their English speaking skills, they should pay attention to their students' "listening" and "speaking" in English. However, in traditional English teaching, it is difficult for teachers to control the development of each student's listening

and speaking skills, and due to the limited time available in the classroom, it is impossible for teachers to give each student the opportunity to listen and speak, and to correct each student's pronunciation individually. The advent of artificial intelligence has helped students to solve this problem to a great extent. With the help of artificial intelligence, students' learning abilities can be accurately determined based on their current learning materials and knowledge, and the listening materials and content they need can be analyzed and delivered accurately.

For example, using artificial intelligence speech recognition products, students' English pronunciation can be evaluated and when students' pronunciation is not standard, the system will give a demonstration of the correct pronunciation to help students solve their pronunciation problems. After repeated practice, the correct pronunciation can be made. Through artificial intelligence, it is possible to promote the teaching of pronunciation which is difficult for teachers to grasp accurately in the past. The self-learning and algorithmic evaluation of AI can make the boring pronunciation learning fun and increase students' enjoyment of learning. Students actively learn pronunciation in the AI and take dictation tests to improve their English learning efficiency.

## 4 Ways to Apply Artificial Intelligence Technology in Primary School English Teaching

### 4.1 Application of Artificial Intelligence in Teaching English Listening and Speaking in Primary Schools

In elementary school English teaching, "listening" and "speaking" have always been the focus of teachers' attention, and they are also fundamental to students' learning English. The ultimate goal of learning English in elementary school is to enable students to communicate fluently in real-life situations. Most of the traditional teaching methods of elementary school English are boring and difficult, and the teaching methods are old-fashioned, so students' learning effect in the classroom is not satisfactory.

For example, the human-computer auditory interaction system in AI educational products provides students with a variety of topics and various forms of learning content that are able to virtualize real-life scenarios. Students are able to retrieve the learning contents of the curriculum based on their learning levels and stages and select different levels of difficulty to meet their learning needs, thus completing their listening and speaking learning easily and happily in a highly virtual and fresh learning environment. By using human-computer interaction to teach English listening, students can reduce their tension and embarrassment in the process of speaking English, and improve their listening skills and communication fluency by correcting their linguistic mistakes in time through virtual real-life conversations. This will increase students' motivation and autonomy. For example, artificial intelligence technology based on corpus and robot teaching can effectively improve students' listening skills in both hearing and listening. Artificial intelligence technologies based on knowledge mapping and virtual reality can accurately acquire knowledge related to the English cultural environment in English teaching, and thus improve students' cultural awareness; based on this, artificial intelligence technologies such as intelligent recommendation engines and natural language processing,

combined with various algorithms in the recommendation system, can recommend the optimal learning paths and resources to students according to their characteristics, thus achieving individualization and thus improving the quality of English thinking. Facial recognition using an emotion computing engine can increase students' autonomy and improve their self-management, which in turn can improve elementary school students' English proficiency.

In summary, applying artificial intelligence technology to elementary school English education can improve students' learning motivation, improve their listening skills and expression abilities, and thus improve the learning efficiency of elementary school students' English.

### 4.2 The Application of Artificial Intelligence in Teaching English Writing in Primary Schools

Writing, as an important part of English in elementary school, occupies an important position in both promotion exams and semester tests for elementary school students, and is an important part of their English proficiency. The application of English is even more important in real work and life [10]. Composition training in elementary English classes is primarily designed to test students' English proficiency, which is undoubtedly a daunting task for many students. It is difficult to achieve the desired educational results by simply using traditional educational methods. The introduction of an intelligent composition review system in the English classroom has led to a greater improvement in the quality of students' compositions [11, 12].

For example, an artificial intelligence teaching platform based on composition criticism and cloud platform can improve students' English writing ability. When teachers have finished teaching the writing part, they can assign students a task in the article system on this artificial intelligence platform and let them finish writing English articles in the article system. At the beginning of the essay, the essay review platform system will help students sort out their essay ideas and essay frameworks, and give them some vocabulary they can use for reference during the essay. After students finish their assignments, they will upload their works to this platform, and the AI platform can grade students' essays in batch and quickly in the shortest time and give feedback to students on their scores. Artificial intelligence essay scoring mainly focuses on the initial evaluation of the structure, vocabulary, syntax and grammar of the essay, and suggests corresponding corrections based on the scoring results. On this basis, it develops the ability to understand and apply the content learned through the analysis of the learned content. Teachers can make secondary corrections on the basis of the AI marking. This approach not only reduces teachers' teaching intensity, but also allows them to evaluate the teaching results more objectively, thus producing help for teachers to improve teaching contents and teaching strategies in a targeted manner [12].

### 4.3 The Application of Artificial Intelligence in Teaching English Translation in Primary Schools

The wide application of artificial intelligence technology has greatly improved the immediacy and accuracy of translation and facilitated teachers to understand the specific

characteristics of students in a timely manner, to realize the establishment of individualized English translation learning guidance for primary school students who are initially exposed to English and English translation, and to quantitatively analyze the effectiveness of English translation for elementary school students. Games, writing games, and so on [13]. It makes the boring translation learning become vivid and interesting, and also helps to stimulate students' learning interest. At present, the artificial intelligence machine translation system has the ability to complete the translation content independently, accurately and in real time, which is a powerful aid to the translation ability of primary school students. While we marvel at the advanced AI technology, we also hope to make better use of its advantages of cloud computing and machine-assisted translation to make full use of it in English teaching. The following are effective ways to effectively realize the teaching of English translation in elementary school with artificial intelligence.

On the one hand, artificial intelligence technology advances with the times, on the basis of which this paper proposes a method of teaching English translation based on artificial intelligence, namely: firstly, to create a corresponding translation environment for students, secondly, to guide students to understand some basic rules and steps of translation, and to give reference and assistance in translation, and to answer difficult questions in the process of English learning for elementary school students, especially those in the lower grades [14].

On the other hand, it is in the evaluation and feedback of translation results. With the assistance of AI, teachers can monitor the whole translation learning process of students, get a comprehensive understanding of each student's translation results and characteristics, and quantify students' translation learning results and the learning level they are at, so as to achieve the purpose of individualized guidance for students. Therefore, the application in translation teaching is also one of the important ways to apply artificial intelligence in elementary school English teaching nowadays.

## 5    The Challenges of Artificial Intelligence Technology in Teaching English in Primary Schools

### 5.1    Challenges to English Teachers' Teaching

Due to the characteristics of artificial intelligence technology itself, it brings many challenges to elementary school English teachers' classroom teaching. In English education, the use of artificial intelligence technology allows for intelligent analysis of the knowledge learned, thus achieving an all-round improvement of the content learned [15]. However, this development is targeted, and it focuses more on the ability and content of learning, focusing on developing students' intelligence at the expense of developing their emotions and values. Although a few AI teaching aids will relate to students' emotions and analyze their wishes, their ultimate service is to provide an accurate understanding and grasp of students' learning and to filter various resources to improve students' learning efficiency. In terms of the current educational environment, one of the challenges that AI presents to elementary English teaching is that it does not make correspondingly more artificial and intelligent changes to itself as students develop; it only balances and

adjusts the difficulty of resources based on the parts that students have already mastered [12]. In addition, the process of macro-guiding primary English teachers by evaluating students' real-time learning performance is based on assessing students' learning following the application of AI in the moment. Therefore, it is highly likely that reference to students' past performance and progress will be neglected, leading to certain bias in the direction of teaching when teachers and students use AI technology.

### 5.2 Challenges to the Teacher-Student Relationship in the English Classroom

Due to the nature of artificial intelligence itself, it has a great potential to lead the teacher-student relationship to extremes, and two situations will arise: the first situation is that teachers will monitor and manage students' learning too comprehensively, and students will gradually lose the ability to learn on their own [16]. Using artificial intelligence technology, teachers can intelligently collect and analyze information about students' voices and expressions to quickly get to know them. By analyzing students' every word and action, teachers can easily grasp the progress and level of English learning of primary school students and control them precisely. The use of artificial intelligence technology was initially intended to answer students' difficult English questions and make judgments based on their actual situation, but under the teacher's control, artificial intelligence has gradually produced essential changes, which is something that needs to be constantly thought about in current elementary school English teaching.

Another change is that the teacher's role and position in the classroom will be greatly diminished due to the comprehensive nature of AI technology, while students can use the ability of AI to collect and learn English-related resources and learning methods. The results of the AI analysis and evaluation will be modified and supplemented as the students operate, and a systematic summary and feedback of the students' learning outcomes will be provided. To a certain extent, the application of artificial intelligence can replace the role played by English teachers in elementary school English teaching and realize the independent learning of primary school students. However, in the long run, the interaction between students and teachers is weakened, and English-learning elementary school students lose focus on the emotional role of teachers and lower their expectations of receiving careful, humane guidance from the language behaviors of English teachers. In terms of the teacher-student relationship, the challenge for the teacher-student relationship will also be an urgent issue to be solved in the application of AI technology to elementary school English teaching.

### 5.3 Challenges to Students' English Learning

The introduction of AI can help teachers enrich the contextualization of the teaching process, if not bring a fully realistic virtual experience to students' English learning, compared to the traditional teaching style of teaching English in elementary school [17]. However, the virtual situations created by AI are immersive in nature, especially for elementary school students whose physical and mental development characteristics are not yet mature due to their age, and they are very likely to be cognitively confused and unable to distinguish between the situations in the virtual world and those in real life situations [18]. Therefore, one of the most important challenges that elementary

school teachers and researchers need to face is how to properly address the challenges of learning English in virtual contexts, and how to create an age-appropriate interactive learning approach between reality and virtual reality [19].

## 6    Conclusions and Recommendations

In conclusion, in the context of artificial intelligence, English classroom learning will produce a broader range of applications than traditional teaching methods, and will also face many challenges. Applications in listening, writing, and translation teaching can achieve a qualitative leap in elementary school English teaching. But AI is not likely to replace English teachers completely. The development of artificial intelligence technology is not very mature, and there are still many unsolved problems that need to be solved and improved in the future research process.

The use of artificial intelligence technology in teaching English in elementary school. It also brings certain challenges to the development of English in elementary school, including the challenges to English teachers' teaching, as well as the challenges to teacher-student relationships and students' English learning. How to better integrate AI into elementary school English teaching in response to the above challenges is a pressing issue that needs to be addressed. This paper also explores the value of AI technology in elementary English teaching and the ways to apply it. But all in all, the most important thing is that in the face of the current trend of rapid development of artificial intelligence, elementary school English teachers should also continue to keep pace with the times, develop their own educational and teaching abilities, realize the progress of elementary school English teaching philosophy and teaching methods, promote the application effect of artificial intelligence technology in elementary school English teaching, and finally realize the overall improvement of elementary school students' English proficiency.

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