



# Application of AR Technology in Chinese Vocabulary Teaching

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**Abstract.** In the fifth-generation(5G) era, AR technology swept like a hurricane, opening a new door to Internet education. It not only changes people's way of thinking, but also has a huge impact on the way of all walks of life. At the same time, AR technology is also applicable in vocabulary teaching of Chinese as a foreign language. This paper will talk about the feasibility of AR technology in Chinese vocabulary teaching from three aspects: the general trend of environment, language teaching environment, AR and teaching Chinese as a foreign language; This paper discusses the measures of AR technology in Chinese vocabulary teaching from three aspects: word pronunciation, word meaning and word use; Finally, the future of AR technology in Chinese vocabulary teaching is projected.

**Keywords:** AR technology; Teaching Chinese as a Foreign Language Vocabulary

## 1 Introduction

With the improvement of China's international status, more and more people have joined the large team of Chinese learning, and there have also emerged a group of Chinese teachers, among which vocabulary teaching has become a difficult point in Chinese teaching. At the same time, the innovation of technology and the efforts of scientific personnel, let augmented reality (AR) technology open a new era for the education industry. AR reintegrates and develops educational resources, enriches new ways of education, effectively reforms traditional teaching models, reduces the difficulty of teaching Chinese vocabulary, arouses students' interest in learning, and stimulates students' initiative and enthusiasm.

## **2 The Feasibility of AR Technology in Chinese Vocabulary Teaching**

### **2.1 General trend of environment**

AR, also known as augmented reality, converts data and analysis operations into images or animations through computers and superimposes them on the real world, which is a technology that skillfully integrates virtual information with the real world. First of all, the maturity of AR technology has already been applied to various teaching scenarios, such as early childhood education, special education, preschool education, online education, vocational education, etc<sup>[1]</sup>. Through AR technology, students can be provided with more rich learning content and better classroom experience. And some scholars take children's memorization of English words as an example to find that compared with traditional teaching methods, students who use AR technology for vocabulary memorization have more advantages in the average number of words they can remember, and their forgetting of vocabulary is also lower, especially in younger student groups. Secondly, in the post epidemic era, a large number of teaching activities need to be conducted online. AR technology can shorten the distance between space and time. Students can enter the real teaching scene through AR to simulate the real classroom and teacher-student interaction, which can reduce students' bad habits such as drowsiness, absence, lateness and desertion in online classes, and achieve higher teaching quality. Finally, the teaching of Chinese vocabulary as a foreign language is characterized by its rich quantity, complex form and changeable meaning, and will be constantly updated and changed with the development of the times. It is a difficult point in Chinese teaching. With the trend of the general environment, it is inevitable to rely on AR technology to carry out Chinese vocabulary teaching.

### **2.2 Language teaching environment**

Language learning cannot be separated from the environment. At present, the main way for learners to learn Chinese is to learn in the classroom. In the target language learning environment, both the input of vocabulary, the use of vocabulary, the ability of vocabulary, and the complexity of students' generative vocabulary are far higher than those in the non-target language environment. The biggest defect of classroom teaching is that it can not provide a real communicative environment to complete the teaching task. AR technology can greatly improve this defect in this respect, and has achieved good results<sup>[2]</sup>. AR can use situational scenes to realistically simulate many specific language teaching environments, and its rich information will give people a sensory experience beyond reality. For example, the AR+animal World card series of Gore Maker, students are learning animal vocabulary, combining it with AR application to make the three-dimensional image of animals stand out on paper, open zero distance interaction with students, provide high-quality "visual and audible" experience for students, and stimulate their imagination and creativity. At the same time, teachers can integrate language practice into teaching plans, complete high-quality teaching tasks. And also students

can learn vocabulary through a variety of real scenes, gradually cultivating their ability to acquire language naturally.

### **2.3 AR technology and foreign teaching method complement each other**

AR has three major technical features: virtual reality combination, real-time interaction, and three dimensions(3D) registration. There is a great breakthrough in the traditional teaching mode. AR uses computer technology to break the inherent teaching method, classroom environment, and students can cultivate learning interest and improve learning ability through AR. At the same time, the application of AR to vocabulary also conforms to our teaching method of Chinese as a foreign language. In many aspects, it complements the teaching method. AR technology integrates with it to complete high-quality teaching activities<sup>[3]</sup>. For example, audiovisual method: for the training of dull pronunciation and words, audiovisual method emphasizes the teaching method of giving students the overall cognitive structure from the aspects of "visualization and audibility" on the basis of the situation. For example, the conscious practice method: after mastering certain language knowledge, learners can use the target language through a large number of language practice activities, which also emphasizes the combination of function, practice, situation and language materials. Another example is suggestive method: suggestive method can give full play to the role of unconsciousness, eliminate learners' anxiety, provide an elegant environment, teach in fun, let the whole brain participate in learning activities, stimulate students' learning potential, and achieve efficient learning.

## **3 Measures of AR Technology in Chinese Vocabulary Teaching**

### **3.1 AR+word phonetic teaching**

To learn a word first, we must learn its pronunciation. Whether the pronunciation is standard or not, is often judged as whether the second language is authentic or not. The non-standard pronunciation will also have a certain impact on communication. Traditional vocabulary phonetics teaching is mainly conducted by teachers or audio tape reading, generally only in the classroom<sup>[4]</sup>. In addition, most of the Chinese teaching in non target language environment is conducted by non target teachers, whose pronunciation is inevitably non-standard and has an accent, and the traditional audio is slightly dull and boring, which can meet the requirements of modern teaching. AR technology has intelligent voice interaction and can create virtual characters. In class, AR can cooperate with the teacher, and the correct pronunciation can be read by AR, which can stimulate the students' brains from the visual and auditory senses. After class, students can interact with the virtual characters created by AR through real time interaction after leaving the pronunciation teaching in the classroom, which can weaken the restrictions of environment, time and space on students' learning, and students can review and consolidate anytime and anywhere to achieve mobile learning.

### 3.2 AR+word meaning teaching

Finally, the main purpose of learning a word is to apply it to communication. In modern Chinese, the meaning of some words is generally reflected in a certain dialogue, that is, in the context. It is difficult for teachers to explain and students to understand in class. AR technology enables intelligent education with science and technology to create a new education that combines virtual and real, real-time interaction, and three-dimensional for students. Intelligently optimize the learning environment, provide targeted resources, and provide multiple communication scenarios (cultural tourism scenarios, business scenarios, tourism scenarios, and other scenarios). Students can play different roles in different scenes and participate in a variety of games. AR simplifies the abstract meaning of words and helps students understand them better. In addition, the lexical function of a word also includes its cultural function. Relying on science and technology, inheriting and developing China's excellent traditional culture, the combination of AR and culture has been mature. For example, the word "Chinese New Year" directly brings students to experience the Chinese New Year in three-dimensional 3D form through AR and experience the unique way of Chinese New Year. Students learn words and stimulate their interest in Chinese traditional culture, which is conducive to Chinese teachers to spread Chinese excellent culture and tell Chinese stories.

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## 4 Conclusions

At present, most of the AR used in education belongs to offline learning, which plays a certain role in supplementing knowledge after class. The popularity of using AR in classroom teaching is still low. The main problems are the high cost of purchasing AR

equipment and the difficulty in subsequent management of equipment, especially the difficulty in using AR equipment in remote areas. Therefore, whether education is fair will be involved. Secondly, how to integrate teachers, students, textbooks and AR settings to form a closed loop remains to be studied. But in general, fifth-generation(5G) technology is developing rapidly, and the national economic strength is developing rapidly. The application of AR technology to education is both an innovation and a challenge. With the continuous development and deepening of technology, corresponding solutions will always be found.

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