Practical Teaching Methods of Oral English Under the Background of Big Data and Artificial Intelligence

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Abstract: As an integral part of education, the goal of oral English is to enable students to master the basic knowledge and skills of the language, and to lay a good foundation for the sustainable development of students. The purpose of oral English teaching is to stimulate and cultivate students' interest in learning and to improve their oral English level. With the rapid application of data science and AI algorithms in various industries, all industries are developing in the direction of intelligence, and major changes are also taking place in the education industry. In the context of big data and artificial intelligence, teaching methods are no longer limited to traditional task-based teaching or other oral language teaching modes, but to intelligently recommend teaching based on the actual situation of students.

1   INTRODUCTION

1.1 Big Data

The arrival of the era of big data has revolutionized the industrial structure of society. More than in the past, society values and relies on the holistic use of information. The essence of big data is the aggregation of complex data. Its basic mode of operation is the collection and processing of information. The standard definition of big data by scholars in recent years is to search and make decisions based on massive data sets, and the data that can be used for analysis is the internal data of big data. The key to big data is not the massive data set, but the method to analyze the data. In addition, big data needs to be combined with technologies such as docker, non-relational databases, and cloud computing to achieve its decision-making role [1-2]. Institutions are relatively optimistic about the future development trend of big data technology, as shown in Figure 1.
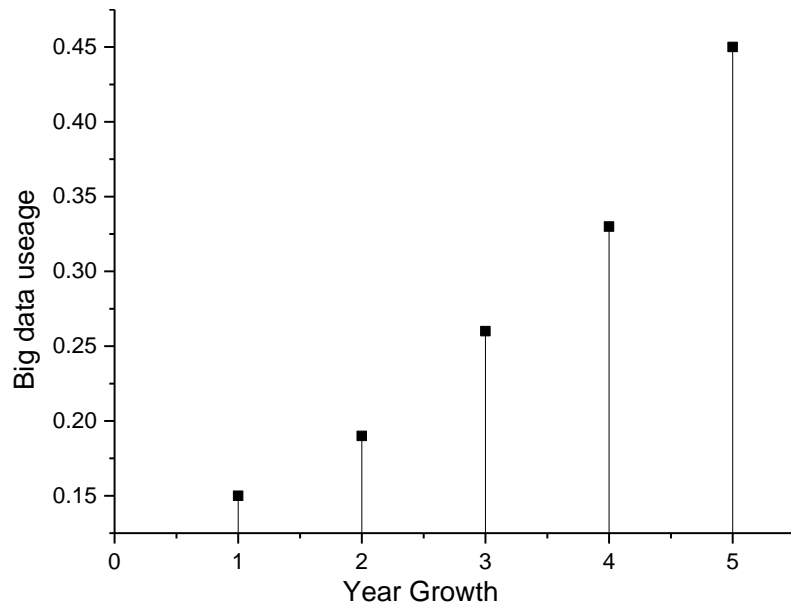
Figure 1: The development trend of big data technology.

1.2 AI

Artificial intelligence (AI) is widely known due to the development of machine learning technology, and with the popularization of artificial intelligence technology, we will welcome the arrival of the era of artificial intelligence [3-4]. In 1956, scientists such as Marvin Minsky, Newell, and McCarthy initiated the "Dartmouth Conference" in the United States. Through the conference of scholars to discuss and explore proposals for building thinking machines, the concept of "artificial intelligence" was proposed concept. Since then, artificial intelligence science has received extensive attention from the academic community.

1.3 Spoken English

English as a second language has become an important part of primary education, and in the lower grades, oral teaching is mainly based on listening and speaking, so teachers should adopt reasonable teaching methods to stimulate students' interest in English learning in oral teaching. Phonology is a regular system of symbols in the process of interpersonal communication, including the activities and achievements of listening, speaking, reading, and writing. Spoken language is part of English about "reading" and "speaking" [5-7]. Referring to the compulsory education curriculum standard of English language requirement for students to express ability in oral English, on the basis of understanding the concept of speech, this paper understands oral language as the expression of spoken English, involving English vocabulary, grammar, pronunciation, etc.

In the revised English curriculum standards for compulsory education in 2017, the Ministry of Education further clarified the importance of oral communication skills, and clearly pointed out that primary school is a very important stage in the development of students' oral English [8-9]. Spoken language is one of the four basic skills of English learning, and it is also an important goal of English learning. However, due to the influence of long-term examination-oriented education, the situation of oral English teaching in primary schools is not optimistic, the lack of real language environment, the single evaluation mode of oral English and the lack of basic teaching facilities are all factors that affect students' performance in oral English teaching. Therefore, many parents hope to improve their children's oral English ability through institutional training. For the majority of English training teachers, how to break through "dumb English" and effectively improve the quality of spoken English teaching has become the focus of education and training [10-11].

2 QUESTIONNAIRE SURVEY AND ANALYSIS

2.1 Survey on Teachers' Oral English Teaching

The goal of this chapter is to find out and discuss the existing problems through a questionnaire survey on the current situation of oral English teaching in an institution. The author believes that the reason why students have more oral language problems is related to teachers' teaching resources, teaching methods and teaching evaluation. Therefore, the author investigates this issue from the perspective of teachers. Considering the authenticity of the data survey and the feasibility of the survey process implementation, twenty-eight English teachers from English institutions were selected as the research subjects. The questionnaire is designed around the research content, including two parts: the use of teaching resources and the implementation of teaching methods by English teachers and the reliability and validity test of the questionnaire [12-13]. 10 questionnaires were selected for retesting, and the results of the two questionnaires before and after were compared consistently to ensure the authenticity of the questionnaires. Teaching resources are materials that help carry out teaching activities and provide support for teaching. With the continuous progress of education and the development of teaching reform and education modernization, teaching application resources are becoming more and more extensive. In the process of English teaching, the rational use of various teaching resources by institutions is conducive to improving the efficiency of students' oral English learning. Through the questionnaire survey, we can understand the use of English teachers' teaching resources in an English college of an institution, and the analysis results are shown in Table 1.

teaching resource	Number of teachers	percentage
multimedia	courseware 28	100%
Oral English textbook	27	96.4%
Film and television resources	12	42.9%
English picture book	9	32%
English wall chart	6	21.4%
audio book	5	17.9%
other	2	7.1%

Table 1: Utilization of spoken English teaching resources.

Effective teaching methods can do more with less. In the process of oral English teaching, common teaching methods include reading, dialogue, discussion and so on. According to the constructivist learning theory, oral English learning should be constructed in a learning environment of "situation", "cooperation", "dialogue" and "meaning", so as to complete the construction of knowledge. The survey and teaching methods commonly used by institutional English teachers are shown in Table 2.

teaching method	Number of teachers	percentage
Follow reading method	28	100%
method of lecture	28	100%
Practice method	25	89.3%

Interactive dialogue method	25	89.3%
Group discussion method	14	50%
Task-driven method	9	32.1%
Association teaching method	5	17.9%
Game interaction method	5	17.9%
Reading guidance method	4	14.3%

Table 2: Teaching methods of spoken English in primary schools.

Teaching evaluation is an important part of oral English teaching. The purpose of teaching evaluation is to adjust the teaching process, feedback teaching information, encourage students to learn, point out deficiencies and improve, and guide students to form the correct emotions for oral language attitudes, values and learning methods [14-15]. For example, in the teaching process, if the students' oral pronunciation is wrong, the teacher's timely evaluation and guidance can play a certain role in correcting the oral error. This survey has learned about teachers' evaluation in the process of oral English teaching, and the specific analysis is shown in Table 3.

Evaluation content (multiple choices)	Number of teachers	percentage
Phonetic pronunciation accuracy	27	96.4%
Fluent oral English	23	82.1%
Natural intonation and rhythm	17	60.7%
have good lungs	15	53.6%
Full of emotion	9	32.1%
Vocabulary accumulation	5	17.9%
Oral expression of self-confidence	5	17.9%

Table 3: Implementation of the evaluation of oral English teaching.

Oral English teaching includes "teaching" and "learning". Students are the main class of learning, and teachers are the organizers of spoken English teaching. Therefore, oral English teaching should not only focus on teachers' teaching implementation, but also observe students' learning in the classroom. Students' classroom performance in oral English teaching can not only reflect teachers' teaching organization ability, but also reflect students' enthusiasm for oral English learning [16-18]. According to Huo's three oral English classes (120 minutes), the students' performance is understandable. As can be seen from Table 4, classroom observation of oral English teaching shows that the duration of teachers' discourse accounts for 63% of the total class hours, 20% is the time for questioning and interaction, and 17% is the time for students to speak collectively. In class, the teacher asked 16 questions and praised and commented 8 times. Students took the initiative to ask questions 9 times and raised their hands 12 times. According to these analyses, students' oral

expression time is limited in the process of oral English teaching, and most of them are collective oral expression time. According to the observation of students' oral English learning, the problems are summarized as follows: 1. Students have poor sense of language, inaccurate pronunciation, and intermittent; 2. Lack of English vocabulary affects expression; 3. Students lack self-confidence and weak will.

Objects of observation	Specific performance	Records and results
Teacher	Teachers' talking time	Total duration 63%
	Number of questions	16 times
	Praise and comment	8 times
	Question interaction tine	Total duration 20%
students	Group speaking time	Total duration17%
	Number of active answers	9 times
	Number of hands raised by students	12 times

Table 4: Classroom observations.

In order to analyze the data collected by the questionnaire, this paper adopts the big data related algorithm for data processing, and the involved formulas are shown in 1a-1b.

$$d_i = Pr_{j_i}^{x_i} + Pr_{j_i}^{y_i} = Pr_{j_i}^{x_i} + f\left(NM_{i2}\right) \qquad (2.1)$$

$$s_i = x_i \cdot O_{i-}H_c\left(Q_A \| W\right)d_i\prod_{i \neq j}\frac{NM_{i2}}{NM_{i2} - NM_{j2}}\bmod s \qquad (2.2)$$

3   Practical teaching strategies of spoken English based on big data and artificial intelligence technology

3.1 Use Big Data Technology to Acquire Network Resources to Practice Speaking

The audio and video material in the network integrates words, sounds, actions, expressions, images and original language materials, which can provide students with an excellent and close-to-real language environment in teaching, and play a good supplementary role. The material can also stimulate students' interest in learning, deepen and broaden the content of classroom teaching. However, the questionnaire data shows that there is still a lack of collection and utilization of network resources in actual teaching. Big data technology can be combined with crawler technology to collect all the required oral practice resources into a specific database for storage, and its data collection and storage characteristics just meet the collection and storage requirements of spoken English practice resources. In the process of using big data to collect oral language resources, attention should be paid to the collation and classification of oral language materials. Resources such as English novels, online listening, English songs, English dramas and American dramas should be processed separately as unstructured data to facilitate the follow-up. Data extraction is carried out according to the characteristics of students of different ages. The follow-up big data platform can also appropriately select English songs, online listening and other resources to cultivate students' speaking ability. The ultimate goal of this strategy is to use the resources obtained from big data to

design teaching content, conduct online and offline mixed teaching, and truly meet students' personalities. To meet the learning requirements, lay a solid foundation and improve the language ability of spoken English to improve the learning effect. Through the secondary questionnaire survey of relevant institutions, it was found that after using big data technology to obtain network resources to practice oral English, the learning effect of students' oral English practice has been greatly improved. The specific situation is shown in Figure 2.
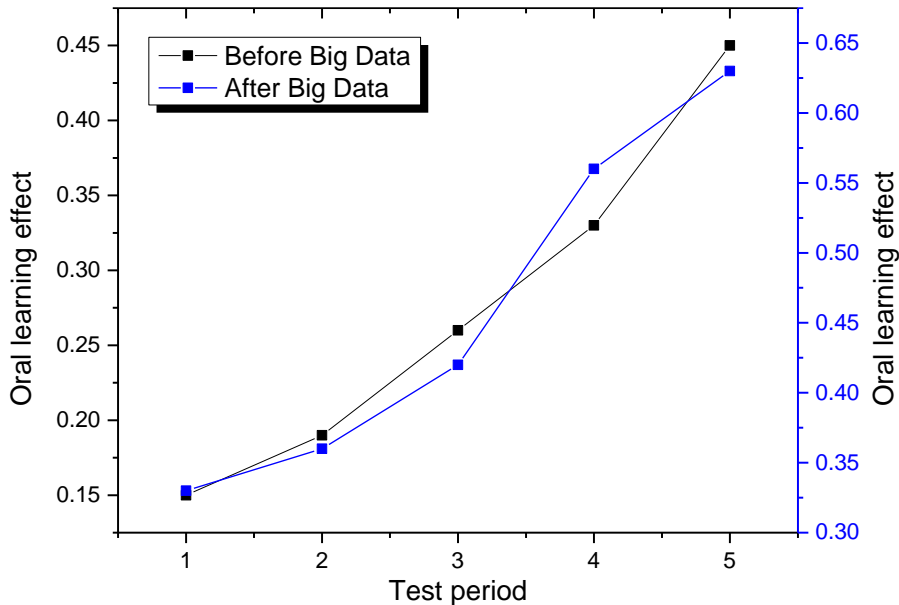

Figure 2: Changes in learning effect after using big data technology to obtain network resources to practice oral English.

3.2 Using Big Data Technology to Analyze Student Needs and Teaching Evaluation

According to the questionnaire, some students are always silent listeners instead of active speakers in the process of oral English teaching. Oral language uses pictures, models, gestures, media, facial expressions and multimedia voice to help and guide students to express, but the psychological pressure and expressions originating from oral language, fear of making mistakes in front of classmates, and poor vocabulary have become the reasons for students to be silent. Therefore, teachers need to pay attention to the optimization of teaching methods, and try to increase students' participation in an interactive way based on the needs of students. Obtaining the real needs of students has become the most critical link in this process, and big data technology can comprehensively analyze students' personal information and historical learning conditions, extract students' individual needs, and teachers can teach according to their individual needs. The result of big data analysis adopts interactive dialogue method, group discussion method, task-driven method, associative teaching method, game interaction method, reading instruction method, etc. for final oral teaching. Strengthening the interaction can strengthen the oral practice and improve the English level. Big data technology enhances the interaction between students and teachers, making English learning a more relaxing and enjoyable process. Through the secondary questionnaire survey of relevant institutions, it was found that after the use of big data technology to optimize the teaching method, the enthusiasm of students in oral language learning has been greatly improved. The specific situation is shown in Figure 3.
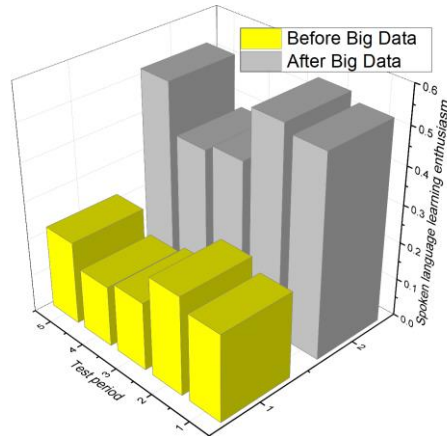
Figure 3: Changes in students' enthusiasm for oral language learning.

In addition, effective and comprehensive teaching evaluation can help students understand their deficiencies in oral English learning in time, and also play a role in teaching feedback. Some English teachers not only need to evaluate students' English pronunciation standards, but also pay attention to students' verbal expressions of emotion, fluency, intonation and rhythm. Through the questionnaire data, it can be found that students' oral English evaluation learning should be based on "language skills", "language knowledge", "language knowledge", "language skills", and "language skills". Emotional attitude" and "cultural awareness" should be evaluated from multiple perspectives, and the cognitive style, cognitive level, and psychological characteristics of primary school students should also be fully considered, and the evaluation should be organically infiltrated into daily teaching activities. In this process, big data technology can give reasonable evaluations on the basis of collecting the data of students' learning process, and improve the reference opinions for teachers' final comprehensive evaluation. Provide suggestions for follow-up oral practice teaching. Through the secondary questionnaire survey of relevant institutions, it was found that after the use of big data technology for oral English teaching evaluation, the accuracy of students' oral English learning effect evaluation has been greatly improved. The specific situation is shown in Figure 4.
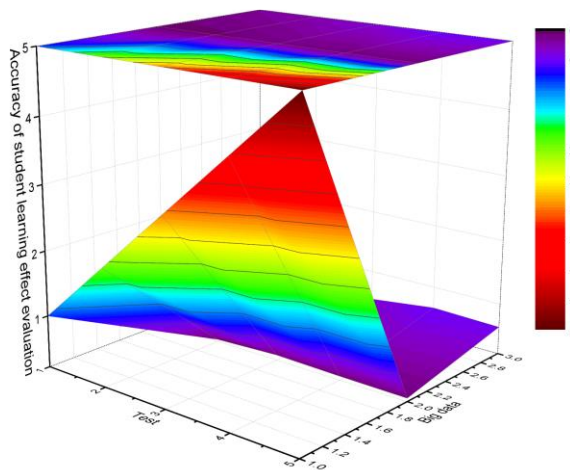

Figure 4: Changes in the accuracy of student learning effect evaluation.

3.3   Use AI Algorithm to Create a Situation to Create a Spoken English Environment

To design the program corresponding to the AI algorithm. Let the AI algorithm program obtain the resources stored in the large database according to the actual needs of students' oral language, so as to construct the oral language teaching environment, create the teaching situation, let the students play different roles, and reasonably assign the roles of the characters in the situation, and at the same time have an in-depth understanding of each The emotions of the characters, reproduce the plot of the article, thereby enhancing the students' experience of the characters in the article and strengthening their oral expression skills. For example, teachers in institutions can use AI algorithm programs to build a "zoo" teaching situation in English classrooms, and use VR or holographic projection technology to give students an immersive experience. Students play different roles in the process and communicate in English. During this process, students can master English vocabulary and learn the language they need to use. When they go to the zoo again in real life, they have mastered basic expression skills and formed good oral expression skills. In addition, primary school spoken English should not be limited to the classroom, but also to create different extracurricular situations and extend the classroom to life. These can be completed by the AI algorithm program after defining the rules. Through the secondary questionnaire survey of relevant institutions, it was found that after the use of AI algorithms to create a situation to create a spoken English environment, students' interest in learning spoken English has been greatly improved. The specific situation is shown in Figure 5.
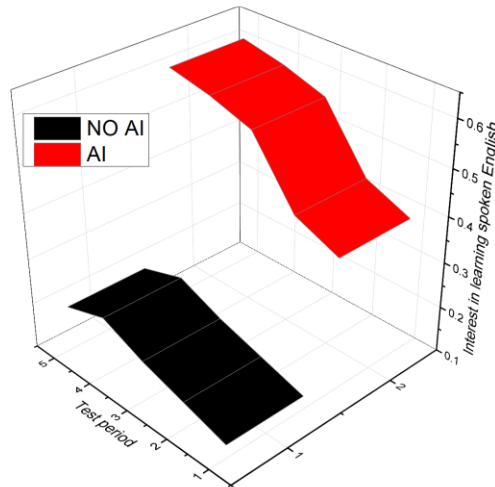

Figure 5: Changes in students' interest in learning spoken English.

4   CONCLUSIONS

As an international communication tool, English is playing an increasingly important role in international communication. But for a long time, oral English teaching has always been a weak link, so teachers and students need to explore new oral-level teaching methods. This paper analyzes the common problems in students' oral English teaching and learning through the investigation of institutions. Oral English teaching is not a one-way knowledge input, but a two-way knowledge input. The interactive communication focuses on the input and output of language knowledge, forming a process of knowledge construction. In this process, teachers need to make full use of big data technology to obtain network resources to exercise oral English, use big data technology to analyze students' needs and teaching evaluation, and use AI algorithm to create a situation to create an oral English environment, so as to improve students' oral English expression ability.

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