



Quantitative Analysis of Intelligent Speech System Applied to English Speech Assessment

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Abstract. The intelligent speech system has been widely used in English classrooms due to its advantages of pronunciation standard, abundant resources and convenient operation. This paper uses the video analysis method to deeply analyze the English classroom teaching based on intelligent speech technology. In order to fully understand the application of intelligent speech system to English classroom teaching, this study combines the existing classroom teaching coding system and the functional characteristics of intelligent speech system, draws on TIMSS and LPS analysis methods, and constructs a coding table of classroom teaching activities, and analyzes the selected video recordings. Make observations and records, objectively analyze the teaching effectiveness of the intelligent voice system, and summarize and summarize the characteristics and laws of the application of the intelligent voice system in the classroom teaching process, so as to better improve the application effect and role of classroom teaching.

Keywords: intelligent speech system · English pronunciation · assessment · TIMSS and LPS

1 Introduction

Intelligent voice teaching is a brand-new English teaching tool born with the rapid development of information technology in the 21st century. It integrates information, operation and monitoring, and can realize multi-modal interaction and personalized teaching. The standard English pronunciation function allows learners to experience standard English pronunciation and enables students to learn in a real and standard English learning environment; at the same time, teachers can also use system software and identification codes to make audio courseware using computers, let the lifeless objects “sound”, diversify the teaching content, thus enriching the content of the English classroom; the real-time reading function of the system makes it easy for teachers to grasp the progress of the classroom at any time, avoiding the tedious rewinding and pausing of the recording equipment. In addition, a voice evaluation system is provided, which can give feedback on the learning effect of voice, so that students can correct their pronunciation in time according to their pronunciation accuracy [2].

2 Prepare a Coding Table

2.1 Research Objects

The purpose of this paper is to apply the intelligent voice system to the classroom to ensure the credibility and effectiveness of the video. The selected sample courses should not only be representative to a certain extent, but also meet the high-level photography standards. Six different levels of videos were selected in the coding table composed of the final courseware of the intelligent speech teaching evaluation competition, including three primary school classes and three junior high school classes. Because they are entries, the duration of the six classes is 15 to 17 min. Between. The validity was measured using the validity calculation formula: $r_{xy}^2 = \frac{S_y^2}{S_x^2}$

2.2 Compiling Coding Categories

The compilation of category codes is based on six steps: careful observation of sample courses, situation creation, collaborative learning, and teacher teaching; classroom questions, imagination stimulation, and joint practice. Finally, through the classification evaluation and data statistics, the classroom teaching activity code of the intelligent voice system is obtained. Subdivide the selected six lessons, use the computer to analyze the weight of each teaching activity, and analyze it to understand its application in English teaching in primary and secondary schools; the interaction status and the application of the intelligent voice system, which comprehensively and three-dimensionally explains the application of English classroom teaching under the support of intelligent speech system from the above perspectives. As can be seen from the data on the chart, the problems in the English classroom accounted for the largest proportion, as high as 25%, most of which were completed through the intelligent voice system. For example, when teaching “We Love Animals” in the third grade, the teacher presses the “invisible identification code” to let the small animal in the painting talk to the students, and then presses the identification code to send out “Who am I?” Students answer the word according to the picture. The teacher clicks with the mouse and asks the students to say “I am a cat.”, and then the students will use “dialogue” to “talk” to the animal. In addition, some students will appear nervous when answering the teacher’s questions, fearing that they will make mistakes and not dare to answer [3] (Table 1).

Creation of scenarios accounts for 16%. English teaching should create a real English environment, and the intelligent voice system can help teachers design and produce audio courseware; and combine it with multimedia teaching, so that students can learn in a vivid English environment, so as to effectively stimulate students’ interest in learning. In addition, in cooperative learning, 16% of the cooperative learning is considered to be the intelligent voice system helping students to carry out cooperative learning. In the classroom, 14% of the students have carried out consolidation exercises. Through the intelligent voice system, they have more opportunities to participate, and through effective practice, it can help them better grasp the knowledge they have learned. In addition, 11% stimulates imagination, helps to expand students’ thinking, promote and develop innovation. Intelligent speech systems have different supporting effects in English teaching, especially in interactive and creative situations, and the use of cooperation and

Table 1. Classroom teaching activities supported by intelligent voice system [self drawn]

category	Manifestations	Specific instructions
Create a situation	vivid language description	In order to stimulate students' understanding of textbooks, guide and create vivid and specific scenarios with rich emotions, images as the main content, so as to stimulate their understanding and development of textbooks.
	In-class games	
teacher teaching	Teacher guidance	Teachers provide study guidance and use a variety of methods to simplify the teaching content presented
	teacher presentation	Demonstrate relevant pictures, videos, etc. in the teaching content
collaborative learning	class discussion	Students perform imitation examples, using teacher-provided examples or content from textbooks, and engaging in class discussions
stimulate the imagination	picture inspired	Teachers use pictures, music, language, etc. Stimulate students' imagination, let students put forward original ideas as much as possible, help to cultivate students' imagination and creativity
	music inspired	

consolidation also occupies a considerable proportion. Teachers began to change from subjectivity to subjectivity, and students began to actively participate in the classroom [4] (Fig. 1).

3 The Application of Intelligent Voice in English Teaching in Primary and Secondary Schools

Through the analysis of the selected class examples, it can be seen that in the English classroom teaching, the intelligent speech system has been widely used in teaching. Voice information cannot be fully recognized, and can only rely on a specific language environment to ensure accurate hearing. The intelligent voice system enables learners to learn in a more realistic language environment, especially to make audio courseware. The teacher can save the pre-downloaded or recorded audio files into the computer; One-to-one correspondence, and paste the identification code into the corresponding teaching resources to make the teaching content more vivid, vivid and vivid. Turn abstract and boring learning content into vivid and interesting; in the context of the new curriculum reform, students can hear dynamic content, which is a new development trend.

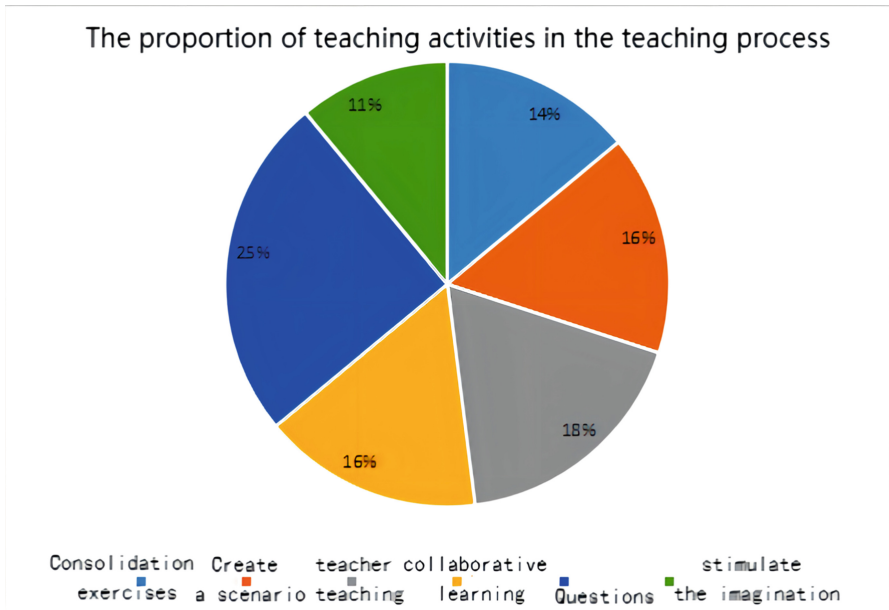


Fig. 1. The proportion of teaching activities in the teaching process [self draw]

4 Application Analysis of Intelligent Voice System in Teaching

Through the analysis of the multimedia courseware, it can be seen that the intelligent speech system is widely used in the classroom, mainly due to the standard reading function, which makes up for the teacher's irregular pronunciation, which leads to the students' pronunciation errors. The "click-to-read" intelligent voice system can reduce the waste of teachers in the classroom, and the audio courseware can effectively mobilize students' enthusiasm for English learning and create a pure English learning atmosphere. In the author's observation record, only at the end of a class, the teacher used the phonetic scoring function to test the vocabulary learned by the students to quantitatively evaluate the students' pronunciation, find out the existing problems, and correct them. However, there are few applications of speech synthesis and pronunciation evaluation, which is a problem worth exploring. Compared with traditional English teaching, this course can stimulate students' enthusiasm for learning and enable them to study in a pure and relaxed atmosphere.

5 Conclusion

In the teaching process, researchers have been exploring the role of intelligent voice systems in other language teaching, such as Chinese teaching and Japanese teaching, so as to better combine intelligent voice teaching with other language teaching. This paper mainly discusses the role of intelligent speech system in English speech assessment, students' participation and attitude, and the improvement of students' ability. The coding

system of the intelligent speech system has some deficiencies in the classification, such as overlapping, overlapping and missing. Therefore, there are certain errors in the data statistics based on this coding, which needs further application and research.

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