An Empirical Study on the Information Technology Teaching Model for Improving Athletes' English Speaking Ability: Taking Hainan Provincial Sports Academy as an Example

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Abstract: This paper attempts to study the application of information technology in oral English teaching in Hainan Provincial Sports Academy, that is, to form an information-based teaching model, expand teaching resources, enrich teaching content, and make oral English teaching more interesting by applying information technology and platforms such as applied learning guide, interactive superstar platform, micro-class video, audio, PPT, and dubbing software before, during and after class. Also, this paper wants to explore the improvement of athletes students' interest, initiative and confidence in oral English learning by applying the information technology and the improvement of their English learning autonomy. This paper is based on constructivism learning theory, input hypothesis theory and output hypothesis theory. On the basis of the theory, this paper focus on the following aspects: the application of information technology affects the athlete students in English learning, especially their learning autonomy, learning interest and learning confidence; the application of information technology affects the oral English level of these students in Hainan Provincial Sports Academy. This empirical study takes athlete students in author's school as the experimental objects. Among them, information technology is used in oral English teaching at the beginning of the term. This study lasted for 16 weeks, and the data were obtained through pre-test, post-test and questionnaire and the statistical software Excel 2007 and SPSS Statistics 23 were used to analyse the data and draw a conclusion. At the same time, all athlete students were interviewed after the experiment. It was found that the application of information technology in oral English teaching effectively improves students' learning autonomy and their interest in English learning, after the application of information technology, the English oral level of these athletes was significantly improved. The experimental subjects of this study were 148 people, which may be insufficient in sample size and the experiment lasted for 16 weeks, the experiment time was not enough. Therefore, these may have an impact on the universality, representativeness and accuracy of the results of this study.

1. Analysis of the Current Research Status and Significance of This Project

1.1 Analysis of Research Status

The development of educational informatization in China has gone through four stages: initial stage, application stage, integration stage, and deep integration stage (Zhu Lanhui, 2019). The research focus in the initial stage is on the construction of the external environment for educational informatization teaching [1-2]. The focus of the integration stage is on the research of information-based teaching models. At this stage, a large number of studies have emerged, including "mobile learning", "MOOCs", "flipped classrooms", and "micro classes". At present, we are experiencing a stage of deep integration of information technology and teaching. Scholars have gathered in the design of information based teaching models, comparative research on the effectiveness of information based teaching models and traditional teaching models, and evaluation of information based teaching[3]. A profound reflection was conducted on the application of information technology in the teaching process [4].

The research results on the informationization teaching mode and construction of English courses are concentrated in the third and fourth stages of informationization development. At present, existing research has shown that scholars have explored the mode and path of deep integration of information technology and foreign language teaching, and conducted empirical research on the practice of information-based teaching, including teaching effectiveness, influencing factors, reflection, and other aspects. The research perspectives and methods have gradually diversified [5].

Searching for keywords such as "information based teaching, English teaching, English teaching models, high-level athletes, outstanding athletes, and athlete English" on journal websites such as CNKI, Wanfang, and Weipu, it has been found that there are very few explorations on the information based teaching models and practical effects of the special group of athletes and students [6-7]. Previous research has mostly focused on optimizing curriculum design, enriching teaching resources, and strengthening the construction of teaching staff [8]. There are not many explorations in integrating English teaching models using advanced information technology methods [9].

At present, China has 14 undergraduate sports colleges and universities, and each province and city also has vocational sports colleges, sports schools, or physical education departments in ordinary universities, responsible for cultivating various levels of sports talents and future composite talents engaged in sports related work for China [10-11]. English learning is crucial for athletes students, whether they are completing their studies to obtain a diploma or participating in international competitions, to receive guidance from foreign coaches, communicate with foreign athletes, and learn advanced training concepts from abroad [12]. As a special group of students, they not only need to complete the school curriculum, but also complete training and competition tasks, achieving excellent competitive results. The optimization of English courses and the improvement of learning efficiency for athlete students are the focus of scholars' research [13].

1.2 Research Significance

Athletes and students are a special group. In the classroom, they are tireless students, on the field, they are athletes who strive for glory for the country, and ambassadors for the dissemination of Chinese culture [14-15]. Good English listening and speaking skills will also assist their career development. This study focuses on innovative information-based teaching models, fully utilizing network resources and modern information technology, changing traditional classroom education models, deeply integrating information technology into and innovating English courses, and fundamentally transforming teachers' teaching and students' learning [16].

2. The Main Content of this Project Research

In order to make up for the shortcomings of the research on improving the English speaking abilities of athlete students in the information-based teaching model, this study, based on the actual situation of English teaching in our college, relies on the superstar teaching platform and rich online learning resources, and uses constructivist theory as the foundation, conducts empirical research on the training of athletes and attempts to construct an information-based teaching model suitable for improving English speaking skills of athlete students in our college, this study conducts experimental teaching model and evaluate the teaching effectiveness. This study explores ways to improve the effectiveness of English teaching for athletes students [17].

2.1 Problems to be Solved

Although athlete students have strong motivation to learn English, their English proficiency is generally low. This is because they lack an English learning environment, incorrect learning methods, and lack of English learning guidance, and poor autonomy in learning, which restrict their English learning process [18-19]. The traditional teaching mode does not match the English learning needs of athlete students [20]. Researchers need to use information technology to provide learners with simulated English learning contexts; This study integrates the resources of the learning platform to make the learning process closer to the learning habits of athletes and students; Provide learning guidance and corresponding constraints for athlete students at any time through convenient information technology means to offset factors such as poor learning autonomy of athlete students [21-22]. The above implementation path is the problem to be solved in this study.

2.2 Specific Implementation Plan

Before class, students can use various mobile equipment at different times and places to access online teaching platforms and receive pre class learning task sheets. They log in to the software to preview the theme vocabulary, follow the pronunciation of the words, complete the word matching game and word testing; Watch micro lessons and complete micro lesson tasks. The software automatically counts the words that students have made mistakes, and the teacher adjusts the word game in class based on this. The completion of micro classes is analyzed in a chart, and the teacher adjusts the teaching focus in class based on this [23-24].

During class, introduction of scenarios in class. The teacher presents pictures or cases, raises questions, and inspires students to think. The teacher plays videos related to the topic to stimulate students' learning interest and release the task: simulate real situations, complete listening training and topic dialogues.

After class, students log in to the platform to complete the quiz and enrich their vocabulary. Teachers adjust teaching strategies and content based on the platform's statistical results, and provide individual guidance to students with poor foundation. After the course ends, the final exam post test will be used to evaluate the listening and speaking abilities of athletes and students. The statistical software excel will be used to compare and analyze the performance data of students in the pre test and post test. Teachers summarize the experimental results and identify areas for improvement [25-26].

3. Research Methods and Information Teaching Experiment Tools

3.1 Research Methods

(1) Literature Method

This study refers to Literatures on education, educational psychology, foreign language teaching, and other related fields, and searches online for research results on English teaching for athletes. On the basis of literature research and practical teaching exploration, this study analyzes the current situation of English learning in our college athletes students and proposes problems.

(2) Questionnaire Survey Method

This study intends to conduct a questionnaire survey on the learning background, learning atmosphere, learning requirements, learning attitude, learning habits, and learning motivation of these athletes.

(3) Interview Survey Method

This study develops an interview outline on learning methods, autonomy and learning interest, and conduct the interview with athletes of author's school to understand their views on the application of information technology in English learning.

(4) Mathematical Analysis Method

This study conducts mathematical statistics and analysis on the data obtained from questionnaire surveys and interviews.

3.2 Information Teaching Experiment Tools

Before classroom teaching, teachers assign learning tasks related to the next lesson on the Superstar platform. Students use Youdao Dictionary to search for words related to the topic, collect relevant background information through the Internet, and upload the information to the Superstar platform as a resource for communication and learning between teachers and students and students in the classroom teaching process.

In the classroom teaching, (1) English video clips are played, teachers ask questions and introduce classroom themes; (2)Use PPT to show the pictures, vocabulary and pronunciation collected by students before class. Students can learn vocabulary intuitively and easily by matching them;(3)Teachers play videos related to athletes' daily training, competition and life, so that they are familiar with the scene and guide them to learn sentence patterns; (4) Students use mobile phones to watch the video and audio materials and PPT uploaded by the teacher to the superstar platform, and practice the pronunciation of the words and sentence patterns repeatedly; (5)Students are divided into groups to conduct situational simulation dialogues, and part of them uploads wechat groups, teacher comments, and student evaluations.

After class teaching, teachers upload micro-course videos on wechat group to supplement grammar knowledge. Students complete dubbing assignments in dubbing software such as Qudubbing and upload them to wechat group for teachers and students to communicate, learn and evaluate online. At the same time, using the voting function of the superstar platform, the students selected the dubbing talent, and their works as excellent examples for students to browse and learn. Through such exercises, students not only consolidate their knowledge, but also improve their English application ability.

4. Experiment and Results Analysis

In this paper, 148 athlete students of Hainan Provincial Sports Academy are studied. In order to ensure the scientificity and accuracy of the experiment, a scientific preliminary investigation was

carried out before the experiment. A questionnaire survey was conducted among these students. The efficiency and recovery rate were 100%. Experimental method is the experimental design and experimental process. The experimental design includes three aspects: research problem, experimental object and experimental tool. The experimental process includes data collection and data analysis. The experimental subjects are 148 athlete students of our school. They focus on the cultivation of English practical application ability in English learning. They are close to each other in terms of interest, initiative, confidence and performance in oral English learning, which can be verified by the questionnaire and test before the experiment.

Qualitative and quantitative analysis methods are used in this experiment. Experimental tools include: questionnaire survey, Oral test and interview. Before the experiment, the author used a questionnaire survey (see Appendix I) to understand the students' interest in oral English learning, learning initiative and learning confidence, so as to prepare for the experiment. The second post-experiment questionnaire survey (see Appendix II) is mainly used to understand the changes of students' interest, attitude and confidence in oral English learning after using information technology in oral English teaching. The higher the score, the better this aspect is. The questionnaire data were analyzed and processed by Excel2007.

The early oral English level of the research subjects in author's school is shown in Figure 1. The previous English language speaking ability score was 2.7 for junior college students and 3.1 for junior and senior school athletes. The English listening and speaking level of college students in is low and needs to be improved.
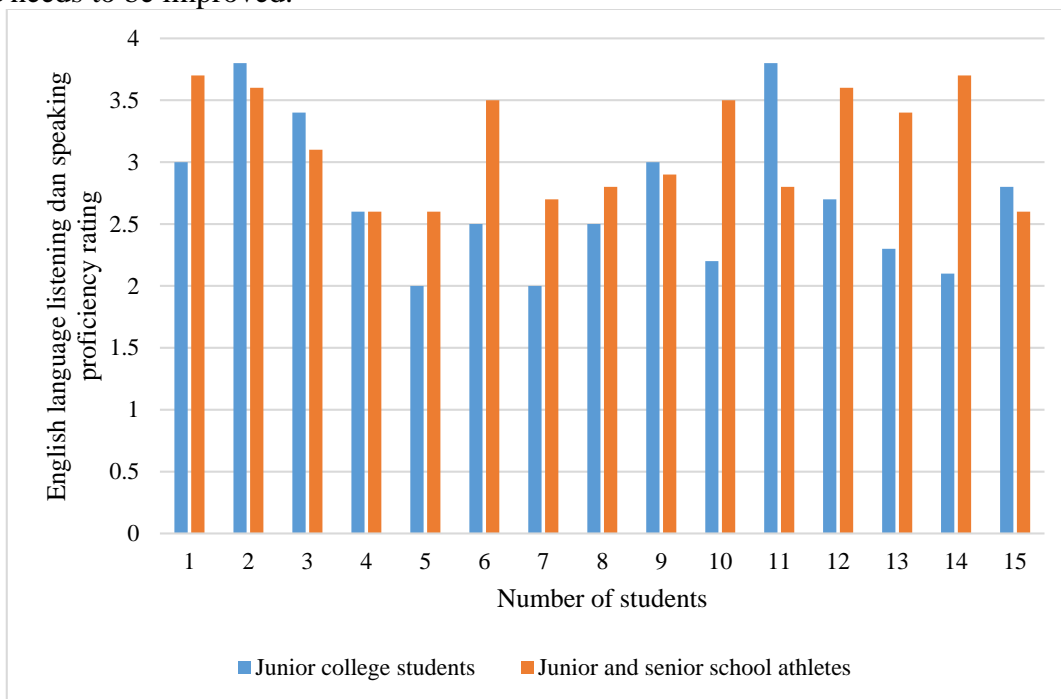

Figure 1: Early English speaking level of the subjects in Hainan Provincial Sports Academy

Through the experiment of English speaking courses, the athlete students are investigated and their English speaking level is preliminarily analyzed. Then, in Our College, teaching adjustments are made in a timely manner through the overall evaluation and feedback of students. First of all, in the middle of the study, 148 students' data were recovered, and the recovery rate and efficiency were 100%.

The intermediate English speaking level of the subjects in author's school is shown in Figure 2. The intermediate English Language speaking ability score was 5.3 for junior college students and

5.4 for junior and senior school athletes. The English speaking level of college students has been improved and needs to be further improved. In the process of research, teachers have made appropriate adjustments to the course content, so that the course content meets the needs and interests of students, and in the process of research, the teaching effect of teachers is also obvious.
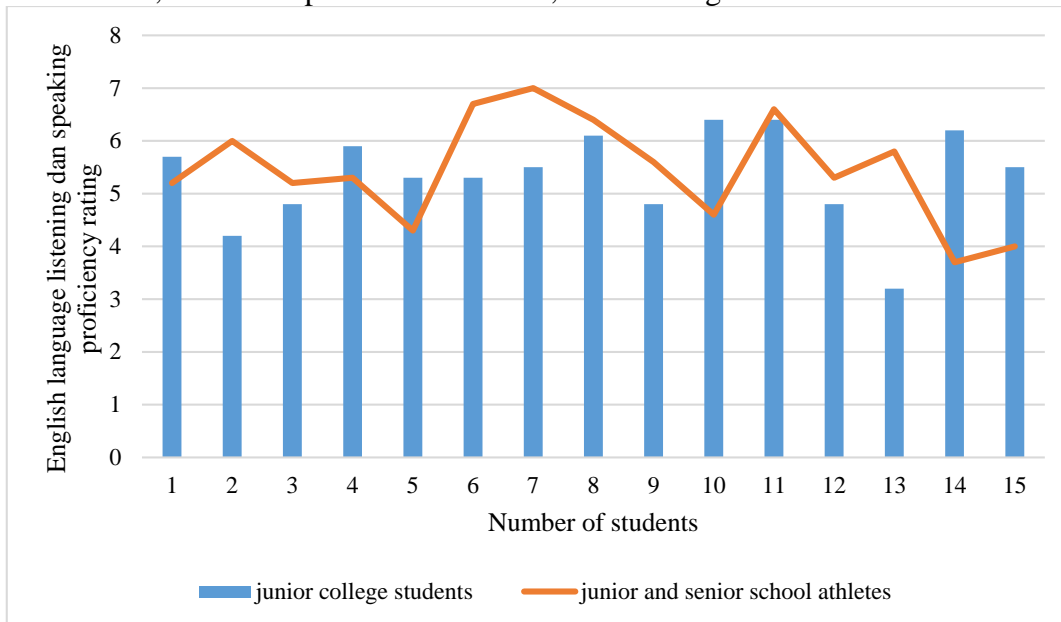

Figure 2: Mid-term English speaking level of Hainan Provincial Sports Academy Athlete Students

In the final stage of the investigation, the test was carried out with descriptive statistics and matching research methods on the students. In these samples, the overall recovery and effective rate were 100%.

The late English speaking proficiency of the subjects in Hainan Provincial Sports Academy is shown in Figure 3. The score of speaking ability in the later stage was junior college students and junior and senior school athletes. The English speaking level has been improved significantly.
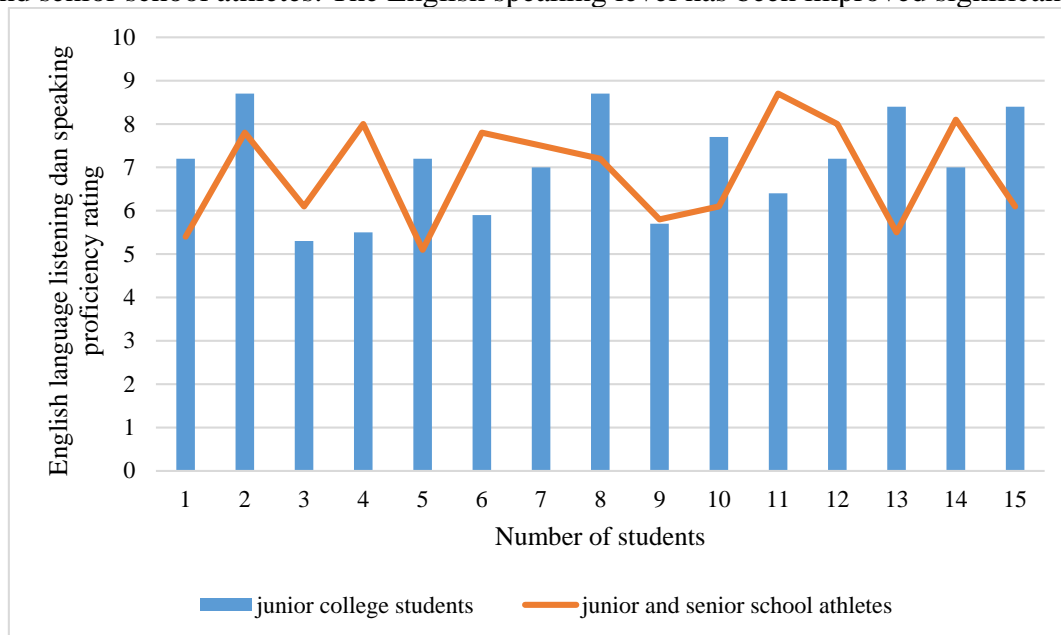

Figure 3: Late English speaking level of the subjects in Hainan Provincial Sports Academy

Through the analysis and processing of questionnaire data, the survey on oral English confidence is shown in Table 1. The pre-confidence level is 5.01 and the medium-term confidence level is 7.99.

For students, they gain real confidence from success. Therefore, in oral English teaching, teachers should try their best to create opportunities for students to get successful experience. In English teaching, teachers can give the students some simple tasks, so as to make them feel successful. Only in the oral English teaching experience a sense of achievement, students' learning motivation would continue to enhance, self-confidence would continue to enhance with this sense of achievement. Therefore, under the guidance of the theory of "input hypothesis", teachers apply information technology to oral English classes, make use of information resources and platforms, and set different learning tasks and teaching activities in the three stages before, during and after class. This guides students to answer questions in the order of "easy first, difficult later". In this way, students can experience the sense of achievement after overcoming difficulties, thereby increasing their self-confidence and stimulating their enthusiasm for learning. At the same time, through this information-based online learning interactive platform, students can Listen to and speak English anytime and anywhere. This can avoid the embarrassment and shyness caused by speaking wrong or not speaking in face to face communication, so that students can better speak, feel the joy of speaking English, and enhance their confidence.

Table 1: Survey of oral English confidence

Different periods	Confidence value
Prophase	5.01
Mid-term	7.99
Later stage	9.22

5. Conclusions

Under the concept of information technology and curriculum integration, the optimized teaching process can effectively improve students' English speaking level. Based on the above analysis, this paper tries to carry out some tentative optimization and reform of English courses in Hainan Provincial Sports Academy, and has received good results in practice, thus promoting the further improvement of English speaking ability. This paper would provide a reference for the setting and teaching of English listening courses in author's school. The good teaching effect achieved in this paper is that these athlete students' English ability has been greatly improved. Based on the scientific teaching theory, this paper has carried on a deep thinking about the teaching method adopted in this paper, and has carried on a beneficial exploration of the teaching practice adopted in this paper. Due to the differences in the English knowledge structure and learning style of Hainan Provincial Sports Academy students, it is difficult to ensure that every student's English speaking level can be significantly improved. Therefore, this paper needs to conduct an in-depth discussion on the optimal design of education and teaching from the perspective of the integration of information technology and curriculum, so as to meet and solve the practical problems existing in education and student learning in Hainan Provincial Sports Academy.

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Appendix I

Oral English learning interest, learning initiative, learning confidence questionnaire I

Dear students: Hello. This questionnaire is designed to improve teaching and learning. Your answers will not have any impact on your learning and life, and you can easily answer. At the same time, your answer is very important to us, and we hope you can give us an answer based on the real

situation. Therefore, please check the appropriate options according to your actual situation and the degree of compatibility with the topic.

Oral English learning interest, learning initiative, learning confidence level scale I

	completely inconsistent	basically consistent	very consistent
1.I like to answer questions actively in oral English class			
2.After class, I will conduct communication training with my classmates on the English situations set by the teacher			
3.I will take part in the oral English contest organized by the school			
4.I will actively participate in the practice activities in oral English class			
5.For me, it is very enjoyable to express myself in English			
6.Oral English is very important for athlete students			
7.As for the dialogue assigned by the teacher after class, I will actively complete it with my partner			
8.I usually take the initiative to learn English			
9.I will actively grasp every chance to practice my oral English after class			
10.I like to take an active part in oral English class			
11.I am very confident when it comes to communicating in English			
12.I thought my spoken English was pretty good			
13. I am quite sure of doing well in the speaking test			
14.I can speak English as I wish			
15.Learning spoken English well is a simple thing			

This scale measures students' oral English learning interest, learning initiative and learning confidence in a total of 15 items, each item is a positive statement form, and describes the characteristics of learning interest, learning initiative and learning confidence respectively.

The answers were also divided into three levels according to the degree of conformity with the situation described in the question: "completely inconsistent", "basically consistent", "very consistent", and each level was assigned a score of 1, 2, and 3 points.

The sum of the scores of 1-5 items above is the score of students' interest level in English learning. The higher the score, the stronger the interest in English learning; on the contrary, the lower the interest in English learning; the sum of the scores of 6-10 items reflects students' learning initiative; the higher the score, the more active the English learning; on the contrary, the more passive. The sum of the scores of 11-15 items is the score of the student's English learning confidence level. The higher the score, the higher the confidence in oral English learning; otherwise, the lower the confidence in English learning.

Appendix II

Oral English learning interest, learning initiative, learning confidence questionnaire II

Dear students: Hello. This questionnaire is designed to improve teaching and learning. Your answers will not have any impact on your learning and life, and you can easily answer. At the same time, your answer is very important to us, and we hope you can give us an answer based on the real situation. Therefore, please check the appropriate options according to your actual situation and the degree of compatibility with the topic.

Oral English learning interest, learning initiative, learning confidence level scale II

	completely inconsistent	completely inconsistent	very consistent
1.I like to answer questions actively in oral English class			
2.For me, it is very enjoyable to express myself in English			
3.I will take part in the oral English contest organized by the school			
4.After class, I will conduct communication training with my classmates on the English situations set by the teacher			
5.I will actively participate in the practice activities in oral English class			
6.As for the dialogue assigned by the teacher after class, I will actively complete it with my partner			
7.Oral English is very important for athlete students			
8..I will actively grasp every chance to practice my oral English after class			
9.I usually take the initiative to learn English			
10.I like to take an active part in oral English class			
11.I like to take an active part in oral English class			
12.I thought my spoken English was pretty good			
13. I am quite sure of doing well in the speaking test			
14.Learning spoken English well is a simple thing			
15.I can speak English as I wish			

This scale measures students' oral English learning interest, learning initiative and learning confidence in a total of 15 items, each item is a positive statement form, and describes the characteristics of learning interest, learning initiative and learning confidence respectively.

The answers were also divided into three levels according to the degree of conformity with the situation described in the question: "completely inconsistent", "basically consistent", "very consistent", and each level was assigned a score of 1, 2, and 3 points.

The sum of the scores of 1-5 items above is the score of students' interest level in English learning. The higher the score, the stronger the interest in English learning; on the contrary, the lower the interest in English learning; the sum of the scores of 6-10 items reflects students' learning initiative; the higher the score, the more active the English learning; on the contrary, the more passive. The sum of the scores of 11-15 items is the score of the student's English learning confidence level. The higher the score, the higher the confidence in oral English learning; otherwise, the lower the confidence in English learning.

Appendix III

Application of Information Technology in Oral English Teaching of Hainan Provincial Sports Academy Subjective evaluation interview

The purpose of this interview is to better understand the effect of using information technology in oral English teaching and students' attitude. Please feel free to express your own views according to your actual learning situation and true thoughts. No need to worry, all the information you provide will have a positive impact on our teaching work.

Question 1: Do you think there have been positive changes in your interest, initiative and confidence in oral English learning after the experiment?

Q2: Has your spoken English improved through the use of information technology?

Question 3: In the future oral English learning, are you willing to let teachers continue to use information technology for oral English teaching?