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Research on AI-assisted Teaching Mode for English Teaching from the Perspective of Total Physical Response (TPR)

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ABSTRACT

Total physical response (TPR) was produced in the United States in the early 1960s. This teaching method is a method of teaching foreign languages through body movements, which is mainly used for English education of American immigrant children. With the help of artificial intelligence technology, educators can try to integrate grammar into language activities in relevant contexts in an implicit way without systematically teaching grammar or phonetic symbols, and gradually increase "input" to students by comprehensive teaching methods.This article focuses on the current circumstance of modern English education and the specific application strategies of using AI-assisted teaching mode for English teaching from the perspective of Total Physical Response (TPR), which has a certain practical reference significance for the improvement of English teaching theory under the background of the constant development in the field of artificial intelligence.

Keywords: *AI-assisted, Teaching Mode, English Teaching, TPR*

1. INTRODUCTION

Total Physical Response (TPR) is a teaching method that combines language learning and body movements. First, students perceive the language through listening to the sound, making supporting actions to understand knowledge, and then output the language after proficiency, so as to achieve the effect of self-confidence expression [1]. Asher cites the example of parents teaching young children to learn the first language to explain the principle of Total Physical Response (TPR). He believes that students learn English best in a relatively relaxed environment. However, tension and impatience are bad for learning English. He emphasizes the coordination of language learning behaviors to teach a second language through body movements. Total Physical Response (TPR) attaches great importance to listening and speaking, and improves the comprehension ability through the body's reaction to the language. Therefore, teachers should try their best to create all conditions for students to have more access to English. At the same time, teachers should help students clarify the purpose of learning English. Starting from their own actual situation, students can find out their real inducement and practical motivation to learn English, inspiring students' learning consciousness. The practical application of artificial intelligence technology in English classroom can not only help teachers prepare more scientific and advanced teaching plans and effectively improve the quality of English teaching, but also enable students to better master English knowledge and improve students' English learning enthusiasm by using artificial intelligence technology, which has an important impact on the development of English teaching. As a new Internet-based teaching mode, AI assisted teaching mode combined with TPR provides a good opportunity and strong support for changing the traditional English teaching, which can alleviate the imbalance between teachers and students, forming a student-centered teaching model, and optimizing the teaching environment [2].

2. CONCEPT OF THE APPLICATION OF AI-ASSISTED TEACHING MODE FOR ENGLISH TEACHING FROM THE PERSPECTIVE OF TOTAL PHYSICAL RESPONSE (TPR)

The teaching method combined with new technology realizes the transformation of knowledge engineering from theory to application, which emphasizes the dynamic attribute of knowledge, considers that the key decision-making knowledge is the object of knowledge acquisition, and regards knowledge as a functional model with good structure, which can be clearly analyzed according to the type, mode and structure of knowledge [3]. When applying AI assisted teaching mode, educators should not only take it as a simple auxiliary means of classroom teaching, but put network teaching activities into the overall teaching plan and organically combine it with real classroom teaching.

Only in this way can teachers be really liberated from the existing classroom "preaching" mode, giving full play to teachers' knowledge as much as possible. With the support of AI assisted teaching mode, a system for evaluating learners' level can be developed as a subsystem of the network foreign language teaching system. Its purpose is two: ① transfer the routine evaluation work completed by teachers (such as students' reading comprehension ability) to the system, and teachers pay attention to the evaluation that cannot be completed by the system at present (such as students' speaking ability); ② Make the students' learning process flexible, and adjust the learning progress according to their own situation. The timing of retraining can be designed more flexibly. At a fixed time, such as early morning, the system first counts the number of samples expanded by each biometric since the last training. When the number of samples in the template library exceeds a certain number, it will be retrained. The rules for template selection are: there are 3 templates in the initial template library, and no template selection is required [4]. After the template library is expanded, the three samples with the highest average matching score with the homologous samples are selected as the templates for recognition. Figure 1 shows the main algorithm of this process:

Require :

- D_l be a set of labeled images of users.
- T be the templates created by the set D_l.
- D_u be a set of unlabelled set.

Repeat :

Assign pseudo–labels data to the subset D in D_u

Increase the set of labeled data with pseudo–labeled data of high confidence $D_l \leftarrow D$

Template updating

FIG. 1 The main algorithm of the process

3. ENGLISH LEARNING IN THE CONTEXT OF AI-ASSISTED TEACHING MODE FOR ENGLISH TEACHING FROM THE PERSPECTIVE OF TOTAL PHYSICAL RESPONSE (TPR)

3.1 Preparation for the input in the Target Language

The input of the target language is the initial stage of TPR, which determines whether teachers can use the method for effective teaching to a certain extent [5]. Therefore, the TPR method has strict requirements for language input. With the help of artificial intelligence technology, the input target language can be displayed in the form of physical object or animation in the classroom. In addition, the ultimate goal of language teaching is that students can use the target language. Therefore, the input target language selected by the intelligent teaching system is practical in life. The requirement of whole body response method for input language brings many restrictions to teachers' input preparation. Therefore, teachers should have the courage to try and break through. In English teaching, abstract nouns are mainly represented as nouns without objects such as state, quality and emotion. In addition, teachers should properly use the concretization of abstract nouns in teaching. The concretization of abstract nouns not only makes up for the neglect of English grammar teaching by using TPR to a certain extent, but also expands the scope of application of the teaching method [6].

3.2 Preparation for Designing Language Situations

The design of language situation is to test the students' use of the target language. First of all, the designed language situation should be close to students' real life, so that students can truly feel the practicability of learning the target language. Secondly, the designed language situation should be related to students' interests. Interest is the biggest driving force of students' learning, which can mobilize students' enthusiasm to participate in classroom activities. Finally, the designed language situation can organically integrate grammar and vocabulary. In addition, the design of language situation

can not only test students' mastery of the target language, but also increase students' opportunities for practice. In order to better design language situations, on the one hand, teachers should spend more time understanding students and discovering their interests; on the other hand, teachers should flexibly use multimedia teaching. The application of multimedia can provide more convenience for teachers to design scenes, which can not only save time, but also show the application of target language to students more vividly [7].

3.3 Preparation for Class Time and Spare Time

The TPR advocates that understanding precedes expression. Teachers cannot force students to speak without being prepared. Therefore, before students speak, teachers cannot ensure that every student can understand the target language and effectively transition to the stage of using the target language [8]. The reasons why teachers cannot effectively transition to the language use stage are, on the one hand, because they cannot judge whether the students' comprehension level has reached the application stage, and on the other hand, because the classroom teaching time is limited, it is hard for them to provide students with language situations. In order to transition to the language use stage more effectively, teachers can group students according to their action response speed. At the same time, teachers should grasp the classroom teaching time, focus on building language situations for students with low understandings, and help students make better use of the target language. For students with good understandings, teachers can use their spare time to communicate with students to test their understanding, which can not only shorten the relationship between teachers and students, but also test the teaching effect [9].

3.4 Preparation for the Implementation of Teaching Management

In the process of teaching practice, most teachers cannot effectively grasp the students' understanding of the target language when using the TPR method. Teachers often take the speed of students' response as the standard to judge whether students understand the target language [10]. This judgment method is inaccurate. Students' response speed may be a simple mechanical imitation of teachers' actions, which is influenced by students' short-term memory ability and other factors. Traditional English teaching mostly adopts the large class teaching mode. The distribution pattern of classroom tables and chairs not only hinders the implementation of classroom activities, but also limits students' participation in classroom activities. However, this teaching method is taught through games, competitions, stories, paintings and other forms. Based on the diversity of teaching forms, teachers need to make rational use of classroom space and arrange the distribution of classroom tables and chairs according to the form and content of classroom activities [11].

4. PROBLEMS OF ENGLISH LEARNING IN MY COUNTRY

First of all, the traditional English teaching model does not provide students with a variety of activities and create a relaxed and pleasant learning environment. Students feel all kinds of pressure when they study.

Secondly, fail to get rid of classroom teaching rules. Students are not given a free learning environment. Teachers cannot test all students' understanding of the target language within the limited teaching time.

Thirdly, fail to reasonably arrange classroom teaching time. Teachers cannot judge the degree of students' understanding of the target language from the practice [12].

5. THE STRATEGIES FOR THE APPLICATION OF AI-ASSISTED TEACHING MODE FOR ENGLISH TEACHING FROM THE PERSPECTIVE OF TOTAL PHYSICAL RESPONSE (TPR)

5.1 Be Familiar with Multimodal Integration Teaching Platform Tools and Cultivate Cross-Cultural Communication Skills

Teachers can used various learning software in the classroom to achieve multi-modal interaction, and the bullet screen function can allow teachers to quickly understand the situation of students. Teachers can also read the topics that students have done before, and there is an exclusive space for the courseware, which is much more convenient for review. If more advanced intelligent classroom and 3D software model are used to illustrate the associated motion demonstration, it is clear at a glance and easy for students to understand. Even students with poor English foundation will understand the principle at once, that is, advanced teaching aids. In addition, multimedia learning CDs, multimedia teaching courseware and network resources provide a more vivid and convenient English language learning environment, facilitating teachers' lesson preparation and teaching. Teachers should grasp the students' learning ability, give priority to English assessment, and test the students' English learning ability through the combination of mutual assessment with students, home visit, daily observation and tracking records. In order to make the assessment process more professional and authentic, the test questions and forms can be jointly designed by psychological teachers and English teachers [13].

5.2 With the Help of Modern Information Technology, Develop Multimodal Contextual Teaching Methods to Achieve

Context is the environment for the survival and development of language. Due to the limitations of traditional teaching conditions, traditional English teaching cannot achieve immersive language environment teaching, which makes it difficult for students to judge whether the language form is appropriate or not. With the help of network technology, computer technology and virtual simulation technology, educators can share educational resources in the process of English teaching, interacting with foreign teachers and students, eliminating external interference in a certain period of time, and comprehensively and systematically cultivating students' listening, speaking, reading and writing, which can help to build an innovative teaching model with the characteristics of both interactive teaching model and situational teaching model, stimulating students' interest, and improving students' participation in learning. With the help of the intelligent teaching platform, the scene of teachers' class can be directly and immediately converted into three-dimensional network courses and transmitted to the cloud platform [14]. At the same time, the scene and content of the teacher's class can also be separated and summarized into micro courses through the collection and processing of the background, so that students can understand the knowledge points they need to learn without having to watch a whole class.

5.3 Effectively Use Language and Non-Language to Optimize the Learning Experience at the Level of Multimodal Media

In the new round of scientific and technological revolution and industrial transformation with the core characteristics of digitization, networking and intelligence, artificial intelligence and machine learning technology are developing rapidly, which is changing people's way of life, study and work, education and teaching. In English classroom, the traditional 'pure language' and 'body non language' can no longer meet the teaching requirements, and 'companion language' and 'non body language' are needed to extend and expand the teaching content and form. AI, artificial intelligence, Internet of things and other technologies have been deeply applied. In order to keep pace with the times, English education must reform talent training standards. Educators should optimize artificial intelligence language teaching methods and realize the real transformation of 'student-centered'. The traditional educational thought takes teachers as the subject and students as the object. The emergence of modern electronic computer is the simulation of the thinking function of human brain and the information process of human brain thinking. In many cases, artificial intelligence is applied to English translation activities and situational simulation teaching to make it have interpersonal skills such as attitude and emotion, which will inevitably change teachers' thinking and teaching methods and realize the teaching transformation of 'student-centered and teacher led'. Figure 2 shows the basic framework and philosophy [15].
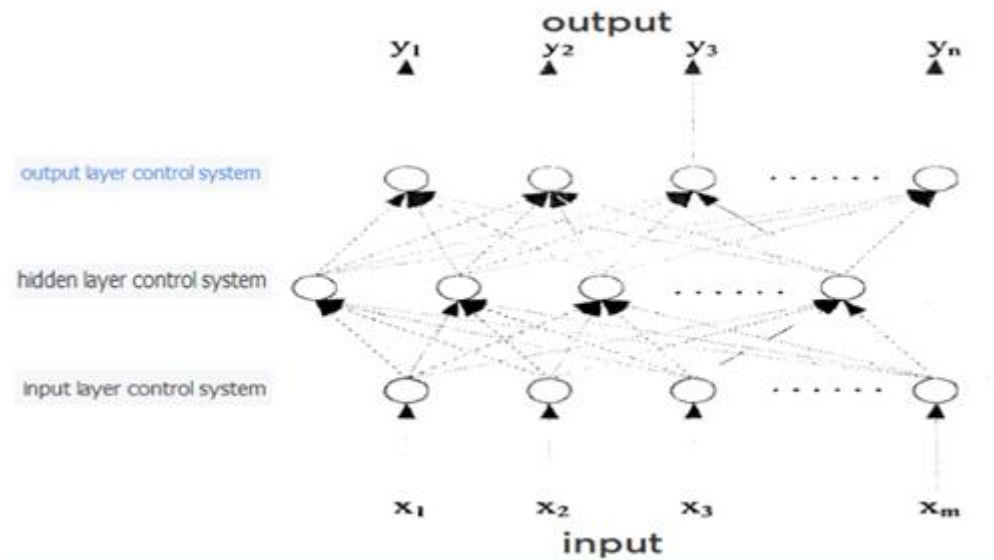

FIG.2 The basic framework and philosophy

6. CONCLUSION

The TPR method is an effective way to teach English, which is based on the teaching idea that 'to learn a foreign language well, learners first need understandable input, and then have a response to the teacher's command'. The TPR method can attract students' attention and provide them with a real

language learning environment [16]. Teachers need to set different teaching contents and objectives according to the level of students. Besides, artificial intelligence technology can not only help teachers' teaching, but also provide effective exercises for English learners, which has objective feedback on English teaching and learning. Artificial intelligence technology still has great room for improvement in English teaching and learning. It's believed that in the near future, artificial intelligence technology, as an important extension of expert English teachers, can more effectively meet the various needs of many English learners and will play a great role in teaching and learning.

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