Integrated Forestry English Education Network Platform Based on Artificial Intelligence

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Abstract:

The study of ESP can meet the growing needs of economic exchange and cultural development. As a branch of ESP, forestry English has few relevant studies in China. The application of language service products of artificial intelligence has brought great challenges and opportunities to forestry language teaching in Colleges and universities. Artificial intelligence promotes the innovation of teaching mode, changes students' learning style and changes teachers' basic functions. This paper studies the integrated English education network platform based on artificial intelligence. This study shows that the College English teaching mode under the background of AI should be constructed from the following aspects: corpus based AI College English listening teaching; Robot Based Artificial Intelligence College Oral English teaching; AI College English Writing Teaching Based on marking net and AI College English translation teaching based on cloud service. The experimental results show that the proposed method can improve the efficiency and effect of English learning.

Keywords: *Forestry engineering, artificial intelligence, language service, English education, network platform.*

I. INTRODUCTION

The emergence of machine translation marks that language learning is about to enter the era of artificial intelligence. With the continuous development of computer technology, machine translation is also maturing, and gradually derived from mobile applications, corpus, language learning systems. In recent years, the language products of artificial intelligence have come out one after another, and are moving forward to the commercial market[1-2]. The integration of

artificial intelligence products and language learning is becoming more and more close, which brings great impact and challenge to the language education industry. As language educators, we have to think deeply about the current form of Education [3]: whether the current language education mode and language talent training mode can meet the needs of the future society for foreign language talents.

Machine translation, natural language understanding and speech recognition technology in the field of artificial intelligence are closely related to language learning. At present, China's leading artificial intelligence speech recognition technology in the world, its accuracy rate has been more than 97%. [4-5] The response speed is very fast. The machine can not only understand the human language, but also make feedback quickly. The application of speech recognition technology in English teaching can effectively support learners to listen and speak. However, after the evolution and upgrading from generation to generation, machine translation also goes from the simple literal matching level to the semantic understanding level [6]. It realizes the intelligent translation mode of "understanding language and generating translation", which is almost comparable to human thinking. Its biggest advantage is that the translation is fluent, more in line with grammatical norms, very close to natural language, very easy to understand. In some contexts, machine translation is almost the same as manual translation.

With the foundation of speech recognition technology and machine translation technology, all kinds of speech translation software are gradually coming into people's vision, and provide great convenience for people's life with its unique functions. For example, Microsoft's latest voice translation software can not only help users quickly translate what they say into slogans, but also preserve their voice, timbre and intonation more importantly, since 2016, the simultaneous interpreting of machines has been frequently seen in international conferences in various fields, and even become the trend of international conferences [7-8]. The Tencent biography participated in the bilingual translation of the 2018 Boao forum for Asia Forum "future production". At the 2018 annual AI summit, Sogou came to the scene to provide simultaneous interpreting simultaneous interpreting for thousands of participants [9-10]. Thus, the era of artificial intelligence for language learning is coming. Artificial intelligence is changing our life, and affecting our way of education.

II. OPPORTUNITIES BROUGHT BY ARTIFICIAL INTELLIGENCE TO ENGLISH TEACHING

Although language learning artificial intelligence products have made a leap again and again, it does not mean that it can replace students' language learning. Because language is not only used to express semantics, but also carries emotion, culture and even an artistic conception.

In the face of such a complex language environment, as far as the current technical ability is concerned, we really can not use artificial intelligence to deal with it. In the era of rapid changes and high-speed computer computing, College English teachers need to keep up with the pace of the times, seize the advantages of artificial intelligence, use new technologies, and constantly adjust their own positioning to meet the needs of teaching development.

(1) Promoting the innovation of teaching mode

Artificial intelligence has changed the traditional college English teaching system in which the teacher is the main knowledge giver and information transmitter. Under the background of artificial intelligence, students' learning objects and interactive objects can be transferred from real people to intelligent machines. Various teaching modes based on artificial intelligence can be effectively used in College English teaching, increasing students' language input and output channels, and integrating language learning into students' daily life. Therefore, the emergence of artificial intelligence has contributed to the reform and innovation of College English teaching mode.

(2) Changing the way students learn

The emergence of artificial intelligence products for English learning, on the one hand, has changed the single way for students to acquire knowledge from teachers and textbooks, on the other hand, it has also provided more personalized learning channels and learning methods for students, making autonomous learning possible. Students can practice listening, speaking, reading and writing in English with various learning platforms and mobile application software according to their own actual situation and interests, and obtain their own learning feedback in time through the evaluation system on the platform or software, so as to help students complete the whole process of autonomous learning, self analysis and self correction independently. At the same time, teachers can use the Internet technology of artificial intelligence products to realize the real-time tracking of students' learning progress, effect and effort, which is conducive to teachers' more in-depth understanding of students' learning characteristics and making learning plans for students. When students need help, they can also answer their doubts on the Internet for the first time, so as to improve their English learning efficiency. The application of artificial intelligence language learning products not only greatly reduces the workload of teachers' correction and correction, but also constructs a real environment for students' language communication and interaction to a great extent, benefiting both teachers and students.

(3) Changing the basic functions of Teachers

The current artificial intelligence products have been able to help teachers realize the basic function of "imparting knowledge and solving doubts". Teachers can release from the tedious criticism work, pay more attention to the future development of students, guide students in thought and support students in action. In addition, teachers will also devote more energy to teaching research, because a variety of electronic devices can record the data of students' language learning process, plus the data of students' reactions collected by video, as well as the data of teachers and students, forming a first-hand teaching process data set for teachers to do teaching analysis. Through statistical analysis of the data model, teachers can analyze the teaching situation and individual learning of each student, draw corresponding conclusions, and then form specific research results to promote the completion of teachers' scientific research tasks.

III. CLOUD COMPUTING BASED WEB MINING TECHNOLOGY

The continuous emergence of new technologies has accelerated the pace of global informatization. The strong development of the Internet and the increasing integration of teaching globalization have broken the traditional teaching mode, making online teaching increasingly popular. Netease open class enables us to enjoy the elegant demeanor of famous teachers from world-famous schools without leaving home. The continuous promotion of national excellent course project promotes the reform of front-line teaching. There is no doubt that the development of online technology is the catalyst to promote resource sharing, but the problems caused by it are also increasingly apparent. The current online teaching resource library mainly provides browsing, downloading, uploading and other mechanical functions on the basis of courseware, materials, network courses, teaching plans and other teaching resources. In the online classroom, especially in the national excellent course design, educators pay more and more attention to the individual differences of learners in theory, and the hierarchical teaching is also considered in the curriculum design, but the overall "data" is still the center, and the "learner" is not reflected in the micro and specific operation. Online teaching lacks the vivid face-to-face communication between teachers and students in essence. It is a one-way teaching platform and a step-by-step curriculum. What every learner sees in the learning process is basically the same content. The teaching platform does not have the characteristics of personalization, customization and intellectualization, and lacks the following stable and continuous learning support. In reality, learners' learning background, learning habits and efforts are not the same, there are individual differences, which leads to the contradiction between rich teaching resources and personalized needs of users. To solve this contradiction, it is necessary to introduce the content of personalized service into the resource database. The application of Web mining technology to track learners' information is conducive to the

construction of personalized online teaching platform, which can solve the problem of insufficient utilization of rich information resources and better optimize the resources.

In China, web mining is still a frontier research field, which is in the primary stage. In the field of foreign language teaching and research, there are a few literatures on the application of data mining technology. Neither of them involves the platform construction of online courses and the early warning function of data mining. It can be said that from the micro and practical point of view, it is very rare in China to analyze the data from data mining and Web Mining to reveal the learning status of learners and then customize teaching resources for them. So far, in the field of foreign language teaching, there is no literature on the application of Web data mining technology. Therefore, the application of Web Mining Technology in foreign language teaching and the construction of online platform for foreign language courses have great development space.

Web mining is a technology that applies data mining technology to the use of Web site resources and automatically discovers and extracts information and knowledge from Web documents and services. It uses data mining algorithms such as qualitative induction, classification learning, association rule mining, clustering analysis, etc., to extract interesting and useful patterns and other hidden information from related resources and users' browsing behaviors. According to different mining objects, Web data mining can be divided into three types: Web content mining, Web structure mining and Web usage mining [10] (Fig. 1).
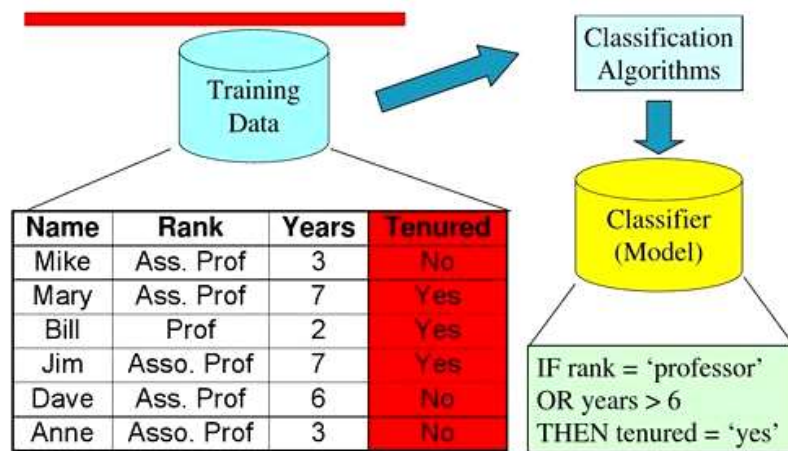

Fig 1: Web mining classification

In short, Web mining technology is easy to use, does not need users to provide subjective evaluation information, it can deal with large-scale data and dynamically obtain user access

patterns. Through the analysis of the user's visit content, stay time and frequency, we can get the knowledge about the learners' access interest and access pattern characteristics. According to the characteristics of these users, the Web site can dynamically recommend teaching resources for learners and provide them with links to the content they care about. This technology is used in the field of courseware construction, which can collect, track and analyze the learning information of online learners, and truly realize personalized and customized learning.

The difference between traditional teaching environment and individualized teaching environment lies in the intermediate link, which can be clearly seen through the comparison between Figure 2 and Figure 3 . In the personalized environment, the learning platform of the middle layer has been expanded. The individualized scheme can establish a personalized learning mode according to the characteristics of learners. The learning platform records the user's access, reorganizes the Web access transaction model, and obtains the Web access transaction library. The personalized network resource library provides each learner with learning resources that adapt to their needs and characteristics, and automatically adjusts the content of the resources, making learners feel that the whole teaching system is specially customized for them.
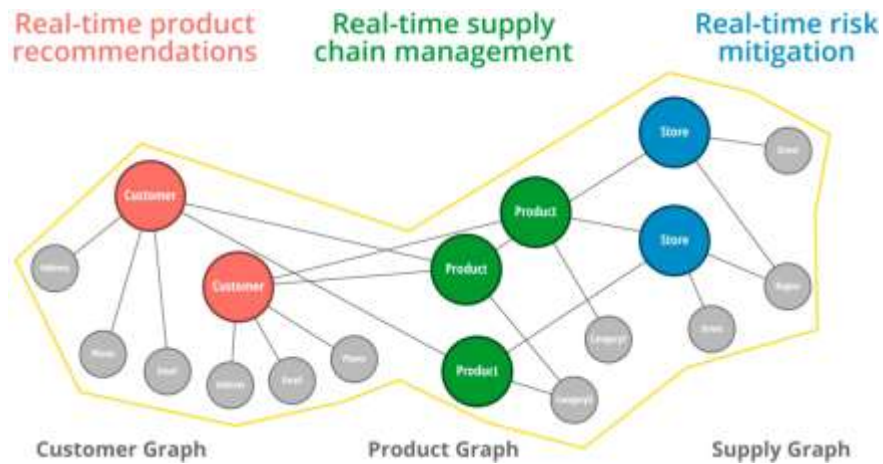

Fig 2: Traditional online teaching environment

Fig 3: Personalized online teaching environment

Furthermore, the personalized service platform provides learners with teaching resources that meet their personal interests. With the changes or shifts of learners' interests, the system can automatically track these changes and adjust the contents of teaching resources. In this way, learners' learning interests will be mobilized, and the system will automatically provide them with targeted teaching resources that dynamically match the learning interests of scholars. Resources will really "live".

Figure 4 shows the key technologies in personalized recommendation of online learning. The personalized online teaching platform of English grammar course is the key technology based on Web mining. Through information collection and analysis of learners' learning habits and usage patterns, it predicts their future use patterns, provides corresponding personalized resources, and realizes the dynamic customization of teaching resources.
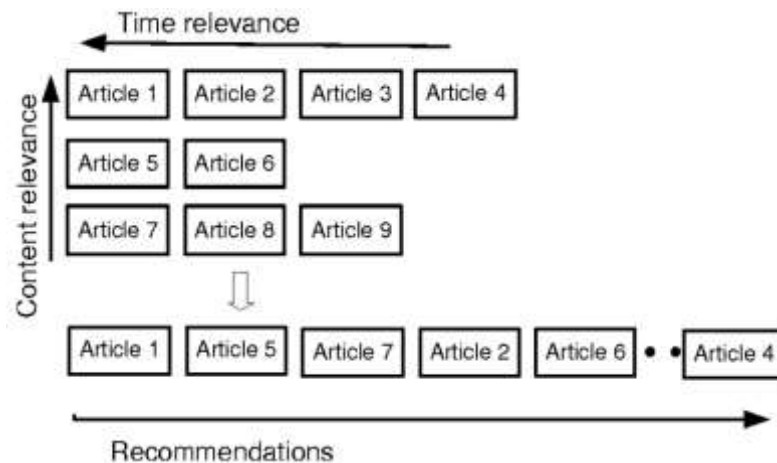
Fig 4: Personalized recommendation process

IV. COLLEGE ENGLISH TEACHING MODE UNDER THE BACKGROUND OF ARTIFICIAL INTELLIGENCE

The development of science and technology ultimately serves mankind. No matter how advanced artificial intelligence products are, they still can't simulate the emotional expression and thinking collision in the language communication between people. However, it is undeniable that artificial intelligence is easier to play its advantages in the field of language learning and make up for the shortcomings of students in the process of English learning. Based on this, we will discuss college English Teaching under the background of artificial intelligence from the aspects of listening, speaking, writing, translation and other language teaching.

4.1 corpus based AI College English Listening Teaching

Listening training is the beginning of students' language learning and a basic course in College English teaching. However, due to the boring content of listening materials or the difficulty of listening, listening class once became an obstacle in college students' English learning. As we all know, corpus based English listening teaching can provide students with a large number of listening content to choose. Students can choose the corpus that they are interested in or related to their future career for in-depth learning.

(1) Automatic matching of learning resources

In the face of the huge corpus of English learning, students are often unable to start or unwilling to waste too much time in their choice, which does not matter. According to the students' major, age, English level and learning style, AI will match the listening learning resources suitable for each student from the corpus. In this way, each student can hear their own professional and interesting topics, and eliminate the boredom in general listening class. Not only that, artificial intelligence can better understand students. In the process of listening learning, the system will automatically push some high-frequency words in this kind of English learning to help students learn vocabulary, so as to reduce the burden of students' English listening and even English learning.

(2) Creating situational learning mode

Artificial intelligence based on corpus can realize the interaction between situation and

learning. For example, students scan an object around them through mobile phones, and artificial intelligence will automatically recognize it, and display and read the English content of the recognized object. Students can independently control the rhythm of reading, whether to display the translation, whether to repeat listening and reading, etc. In this way, "listening" in English learning is closely connected with students' real life, which is conducive to students' perception of the outside world and input of English language. Another example is that artificial intelligence guides students to the scenic spots or areas they are interested in. Students can choose different life scenes and degrees of difficulty. Everyone can find the listening audio suitable for their English level to make the listening materials more vivid. In the whole process of corpus based AI College English listening teaching, teachers only need to analyze and guide students' listening skills; The students' listening behavior should be properly intervened, and their listening effect should be tracked and fed back.

4.2 robot based AI oral English Teaching

The purpose of language learning is to communicate and to skillfully use this kind of communication tool. The level of students' oral English reflects their practical ability in English. In the traditional English teaching process, except in the classroom, there are few English communication environment, occasionally students who want to practice oral English are difficult to find a suitable practice partner, which has become the main reason why most students dare not speak English.

(1) Companion practice

The emergence of educational robots has given full support to the construction of authentic English learning atmosphere. Educational robots can be like good friends with learners, and interact with learners with real life and authentic English, creating a natural, real and lasting English communication environment. Educational robot can provide students with rich and colorful dialogue scenes, and carry out active and effective dialogue with students. In the process of dialogue, the robot can timely give certain vocabulary prompt and pronunciation correction according to the students' thinking time and language fluency, and guide the students to complete the dialogue smoothly. At the end of the dialogue, the robot can play the role of "teacher" on the spot and give appropriate verbal encouragement and suggestions for the overall performance of the students. Through the dialogue form of human-computer interaction, it provides learners with the opportunity of oral practice, helps students to ease the tension and embarrassment of dialogue with real people, and also solves the blindness of students' oral practice. It brings great convenience for teachers' oral English teaching and increases the fun of students' oral English learning.

(2) Group learning

In the past, the biggest headache for teachers is that every new semester, students' oral English level will appear a certain degree of regression, because in the winter and summer vacation, there is a lack of oral practice environment and communication object. Educational robot can not only improve the above problems, but also extend oral English teaching to extracurricular. With the help of educational robot, the dialogue between teachers and students can be realized outside the classroom or even during holidays. Teachers and students can practice in groups with other online members in the form of video conference. At this time, the educational robot will switch to the role of "assistant" to provide the interlocutors with some basic sentence patterns and fixed collocations under a certain topic, so as to facilitate the use of students in oral expression and promote the in-depth communication between teachers and students in daily English conversation.

4.3 AI based College English Writing Teaching

Marking network is an online marking system based on corpus and cloud computing technology. It can give timely and effective feedback and objective evaluation to students' English compositions. The automatic correcting system of correcting net can first contact the context, scan the whole text, then make a judgment, find out the spelling mistakes and grammatical errors in the text, and give specific modification suggestions. Teachers can combine the technical advantages of the marking network and use the automatic identification function of the system to cultivate students' habit of revising English writing repeatedly. First of all, teachers release writing tasks in the learning space through the writing system of the marking network. After receiving the writing tasks, students can seek the guidance of writing methods and the idea of writing framework in the system, so that students can understand the thinking of writing. In the process of what to write, the system will provide students with a certain vocabulary reference according to the writing process, exercise their language organization ability, give segmented suggestions, and assist students to complete the writing task. Then students will write the article to the system for correction, the score and evaluation given by the system can help students understand their writing level and the shortcomings in writing at the first time. Finally, according to the specific comments given by the system, students can modify sentence by sentence, so that students can experience the fun of writing and enhance their confidence in English writing. In addition, through the analysis of students' mistakes in the process of English writing, we can find out the weak links of students' written expression, and then do some targeted training, such as correcting mistakes, sentence training and silent writing, which can consolidate students' English foundation and fundamentally

improve their writing level.

4.4 College English translation teaching of artificial intelligence based on cloud service

As mentioned above, artificial intelligence not only changes the translation process, but also improves the translation efficiency and optimizes the translation process. For the college students who are going to work, the ability to skillfully operate the "hardware" of translation should become one of the main abilities to deal with all kinds of language conversion in the future. As far as college English translation teaching is concerned, it is unimaginable to leave translation "hardware" teaching. Because translation software, translation database, cloud translation, corpus and other artificial intelligence services deeply affect the quality of translation teaching, translation teaching materials and translation personnel training.

(1) Translation process

Language translation ability involves the improvement of monolingual expression ability, logical thinking ability, bilingual conversion skills and the application of skills. It is a relatively complex and intelligent cognitive activity with strong personal characteristics. Teachers use artificial intelligence platform to create specific situations and translation tasks for students, and provide help and guidance. In the process of translation, students use the technical means and resources of cloud services to solve the difficulties and doubts they encounter in text understanding, analysis, language processing, output and other links. This reduces the difficulty of translation to a certain extent, and can stimulate students to explore the fun of learning. In addition, teachers can also use the system to simulate the standardized management process of large-scale translation projects, carry out the practice teaching of collaborative translation tasks, mobilize students' enthusiasm for translation, give full play to students' individual advantages, and at the same time, all members are responsible for the quality of translation.

(2) Translation evaluation

Cloud based AI College English translation teaching changes translation evaluation from static evaluation to dynamic evaluation of the whole translation process. The AI system can record each student's translation process completely, and the teacher can supervise the whole process, provide immediate and accurate feedback, and seek solutions with students. This kind of over evaluation from the result of translation to the process of translation can greatly increase students' participation in the process of translation. On this basis, according to the translation tasks and learning tracking records, the paper establishes students' translation learning files, quantifies their translation learning behaviors, and provides guidance for students' personalized

learning.

V. CONCLUSION

The application of artificial intelligence in College English teaching is conducive to the optimization of students' English learning experience, the improvement of students' learning effectiveness in English listening, speaking, reading, writing and translation, and the improvement of College English teaching effect. With the progress of science and technology and the development of the times, teachers should be free from the simple and high repetition rate of College English teaching, so as to spend more time and energy on the improvement of teaching quality and the reform and innovation of teaching mode, and make full use of the technical advantages of artificial intelligence to carry out efficient College English teaching.

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