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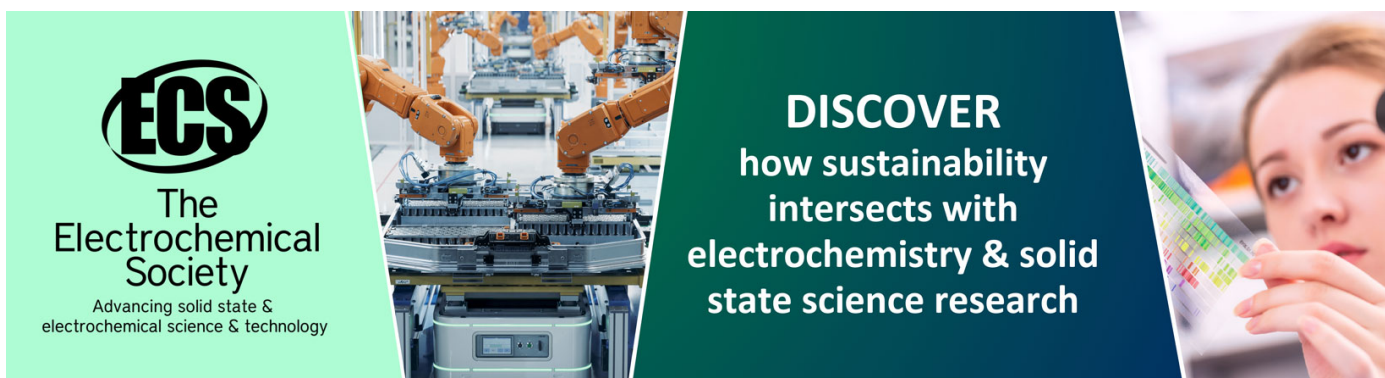
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Research into College English Teaching under Artificial Intelligence in China

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Abstract. This paper presents the integration of college English teaching and artificial intelligence through the mechanism of the latter: natural language processing and big data mining with corresponding examples. In the hope of providing some teaching ideas and improving the current college English teaching in China.

1. Artificial Intelligence

Artificial intelligence (AI), also known as intelligent machine or machine intelligence, refers to the intelligence expressed by machines made by humans. Generally, artificial intelligence refers to the technology of presenting human intelligence through ordinary computer programs. The term also indicates whether and how such an intelligent system can be implemented.

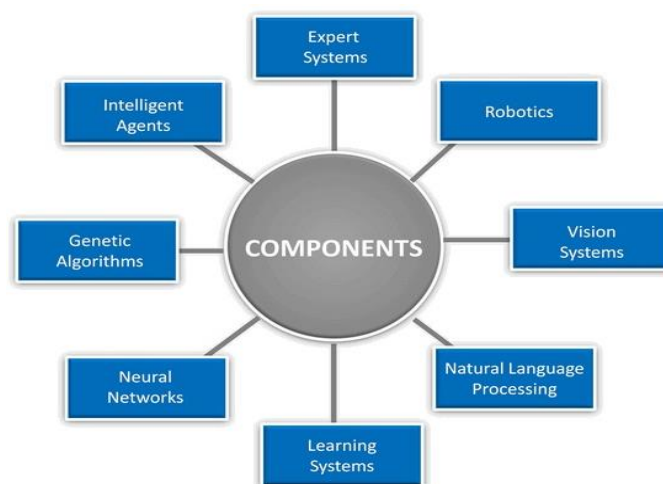


Fig. 1 Components of AI

The definition of artificial intelligence in general textbooks is “research and design of intelligent agents”. Intelligent agents refer to a system that can observe the surrounding environment and take actions to achieve goals. The core of AI include the ability to construct reasoning, knowledge,



planning, learning, communication, perception, moving objects, using tools, and controlling machinery that are similar to or even superior to humans. There are currently a large number of tools using artificial intelligence, including search and mathematical optimization, and logical deduction. Algorithms based on bionics, cognitive psychology, and probability and economics are also being gradually explored. Thinking originates from the brain, and thinking controls behavior, which requires will to realize, and thinking is the collation of all data collection, which is equivalent to a database, so artificial intelligence is predicted to eventually evolve into machines to replace humans.

2. Current College English Teaching in China

For a long time, the concept of College English teaching stayed in the traditional mode of college teaching. The traditional classroom teaching of College English is teacher centered, which emphasizes what the teachers say and ignores what the students learn. The interaction between the teacher and students is seriously inadequate. Traditional college English teaching mainly uses textbooks as a learning carrier. Its content is single, narrow, and backward, and the teacher is required to finish certain units according to the teaching plan which only includes the content of textbooks. Due to this inflexibility given to teachers, the teaching content can't be diverse.

The development of information technology has promoted the change of teaching environment and teaching methods. The emergence of online learning, mobile learning, MOOC learning and hybrid learning has impacted the traditional teaching, forcing educators to think about and improve the existing teaching methods. In this context, the concept of "learner centered" hybrid teaching has attracted the attention and research of the education community at home and abroad. Hybrid teaching is a combination of face-to-face teaching and online teaching activities and tasks. Compared with the traditional classroom teaching and Online + offline hybrid teaching method, it can not only meet the emotional communication between teachers and students in face-to-face teaching hours, but also introduce the learning data generated by online teaching to make real-time feedback, so that teachers and students can adjust and improve their own teaching activities and learning tasks in time.

However, in practical application, there are still many problems to be solved. For example, online learning tasks are disconnected from offline classroom teaching. Sometimes, the produced teaching resources are only used for formal exchange, and the quality is worrying. If students fail to get timely response from teachers when they interact online, or the quality of curriculum resources they visit is not good, their interest will gradually disappear, and the disconnection between classroom teaching and online learning will become more and more serious. Fortunately, the continuous development and application of artificial intelligence technology in recent years have solved the above problems. It also provides a powerful guarantee for the reform of modern college English education.

3. The Combination of AI and College English Teaching

3.1. Natural Language Processing (NLP)

Natural language processing mainly studies how to understand and produce human natural language including phonetic and text forms, and text includes five levels of word form, grammar, semantics, pragmatics and discourse, which is equivalent to improving the language intelligence of computers. The specific method requires the research results of linguistics, psychology, sociology and other disciplines, such as Chomsky's grammar system; also the research results of knowledge representation and machine learning, such as rule-based production representation is a traditional natural language processing technique.

At present, with the continuous enrichment and accumulation of this technology in terms of theory and resources, its research area is also expanding, and it has already had some specific applications, such as the domestic Xunfei dictionaries, intelligent composition review system, and machine translation. Voice geographic navigation, intelligent chat robot, etc. For foreign language teaching, natural language processing has been able to achieve voice interaction with learners, and voice based response has also been used in low-risk testing and some practice systems. In addition, in recent years,

the rise and operation of MOOC (mass open online course) cannot be separated from some technical means. Among them, natural language processing technology plays a huge role. It can grade students' homework on a large scale and greatly improve the efficiency of online teaching.

Now, some experts at home and abroad have devoted themselves to the development of artificial intelligence teaching system and achieved good results in practical application. For example, Jia Jiyou, an expert in this field at home, introduced a software he developed on *AI Magazine*. CSIEC is not only a man-machine conversation system based on natural language processing technology, but also a set of evaluation system for learners and teachers. In order to adapt to the different preferences of learners, the system can provide several user interfaces and conversation modes. At first, learners will choose to communicate with the system by speaking or writing. In any case, they can hear the synthesized voice of the system and see the avatar of the partner on the screen through Microsoft's agent technology. Learners can also talk to the system through a microphone with speech recognition software installed. Then, the system can check the spelling or grammar previously entered according to the learner's requirements. Learners and systems can talk on a given topic or without restrictions. Unrestricted topics will be more conducive to learners who are fluent in spoken English or have a good written background. For learners with poor English foundation or introverted personality, due to the lack of virtual dialogue between them and the system, learners can choose t agents to guide them through the conversation.

3.2. Educational Data Mining

From a teaching perspective, educational data mining is the use of big data algorithms to analyze the massive data generated during the learning process of learners. With the help of modeling methods, it mines valuable information in these data and discovers the internal logic of students' various learning behaviors, thus making the most correct teaching decision, and predict students' future learning behaviors and patterns.

The deep integration of artificial intelligence and College English teaching and the construction of ecological teaching mode are expected to help students update their English learning ideas, methods and contents, stimulate their interest and initiative in English learning, and improve their English learning effectiveness. Because AI can form the basic modeling of English learners according to the basic information of learners, such as age, gender, learning experience and cognitive level, and then refine the types of learners according to their English learning files, social files and other files, so as to provide technical support for their personalized English teaching mode.

With the global popularity and increasing influence of social media, data mining technology can make full use of social platforms, such as QQ, WeChat, Weibo and other social networks to evaluate learners' learning ability, learning style, learning purpose, etc. This kind of analysis based on artificial intelligence big data can help language teachers better understand the learning needs of English learners.

An example is TLCTS, it can help learners quickly acquire the communication skills and cultural knowledge of the foreign language they learn in the game. This system is mainly used to improve learners' oral communication skills. Learners only need to learn to communicate in foreign languages to participate in the game and complete it. At the same time, the TLCS system pays attention to the illiterate cultural knowledge required by learners to complete specific types of tasks and provide a rich and authentic field to achieve the goal of holding the task.

It is worth noting that the game plays a key role in the TLCTS system. Each course incorporates a task game based on a specific scenario, where there are many virtual characters and learners talking in different situations. Artificial intelligence technology is also used for virtual characters to make decisions and support them to make a series of behaviors, so learners have many opportunities to practice conversation. At the same time, the learner operation model software monitors the learner's application of each communication skill to assess the learner's mastery level,, which helps teachers and instructors to track the learners' learning in real time and strengthen the guidance of learners in weak links through the software. It can be seen that the TCIS system focuses on training learners'

communication ability to grasp a foreign language in a short time, which is more practical. If this system is introduced into college English teaching, many students' listening and speaking abilities will be improved, and the learners' needs for one-to-one communication will be met to a certain extent.

4. Conclusion

Artificial intelligence can provide a broader teaching environment and a richer variety of teaching methods and means for College English ecological teaching through in-depth learning and feature data mining, so that teaching activities are in a changing and developing ecological environment. With the emergence of new teaching resources and new models, such as MOOC flipped classroom and micro class, we also need to update the concept of reallocation, integration and utilization of teaching resources, and find a multi-dimensional and dynamic thinking mode to make teaching in a good ecological environment of natural development and operation. Therefore, the deep integration of artificial intelligence and College English teaching process will become The future trend of language teaching.

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