

The Application and Feasibility of Artificial Intelligence in College English Teaching

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Abstract. In recent years, with the continuous innovation of computer network technology, Artificial Intelligence has gradually appeared in our vision and become the main object of future development of various industries in today's society. In this context, our educational field also gradually ushered in the great development of its educational modernization. In particular, the artificial intelligence based machine learning, with its own unique deep learning technology, has attracted the attention of many education scholars. The application of language service products of artificial intelligence brings great challenges and opportunities to college English teaching, which will change the way students learn, change the basic functions of teachers. Therefore, this paper takes college English teaching as the research object and explores the feasibility and application of artificial intelligence in college English teaching.

Introduction

Nowadays, Artificial Intelligence is no longer a strange word for people. Facing the outstanding achievements of artificial intelligence in various fields of society, the Ministry of Education issued "the action program for education informationization" in May 2018. It points out that efforts should be made to promote the construction of a national public service system of educational resources, and a new social education system that "everyone can learn, everywhere can learn, and always can learn" should be realized under the influence of a lifelong, digital, networked and intelligent education system. It can be seen that under the background of continuous advancement of scientific research, national support and social response, it has become an irresistible trend to widely apply artificial intelligence in college teaching in the future. In today's information intelligence and the rise of artificial intelligence in the context of big data, college English teaching has been changing. The ubiquitous Internet smartphone model has successfully integrated fragmented time into students' language learning process. While college English language learning has become more convenient, efficient and interesting, they still cannot find the most suitable learning method and content. Therefore, it can be predicted that the language teaching mode will change from the gradient "extensive and profound" teaching and learning mode according to the language learners' different levels to the tailored and more targeted "profound and demanding" expert teaching mode and the machine-guided and demand-output learning mode. As language teachers, college English teachers need to be well prepared for this great change.

Overview of Artificial Intelligence

Artificial Intelligence(AI), it belongs to an important branch of computer science on the system. It aims to understand the essence of intelligence through the research, simulation, development and extension of human intelligence, so as to create a brand new intelligent machine comparable to human intelligence with the help of machine simulation. With the growing of human exploration about computer technology and the new features of computer development, since the beginning of the artificial intelligence, both in technical and theory aspects, a relatively mature system of research has been formed. Based on the particularity of artificial intelligence, its application field also has been constantly expanding, not only including the image recognition, human-computer interaction, speech recognition, language processing, machine translation, such as unmanned; moreover, in the future we

see artificial intelligence as a "container" of human intelligence. With the evolution of technology, it will be able to bring more surprise to us high-tech products. In general, we can make a conclusion to the concept of artificial intelligence: with the support of computer technology, the machine can simulate the process of human's processing of various information, including the formation of consciousness, thinking and logic activities, The machine can think like human beings so that it has the purpose of competent for a certain intelligent work of human beings, making human beings liberate from complex work.

The Influence of Artificial Intelligence on College English Education

Artificial intelligence technology is like water droplets spreading in all aspects of our life, whether study or work. The ubiquitous artificial intelligence technology has greatly changed our knowledge system, way of thinking, way of life, way of work and social economic benefits. In the field of education permeated by artificial intelligence, there are also macro-changes or micro-changes, which alter the traditional educational methods, contents, ideas and roles of teachers. Language learning, like artificial intelligence, is closely related to neuroscience. As a result, a series of artificial intelligence technologies applied to language teaching, such as machine translation, human-machine dialogue, machine interpretation, and robot teacher, have been produced, and some achievements have greatly changed the traditional language use.

Change in the Role of English Teachers. The artificial intelligence technology produces all kinds of machine worker in different field of life, which may replace the human beings, including the robot teachers, or the auxiliary teachers, the virtual teachers. The traditional one-to-many teaching will be changed. They will replace or assist teachers to complete a series of educational and teaching work, including the collection of information resources, the transmission of knowledge, the correction of homework, and even the interaction with students. By using big data, virtual teachers can complete the collection of required teaching and learning resources, and students can search personalized learning information from virtual teachers through voice recognition technology. In the process of assisting students to learn, the robot teacher collects the learning process, data and models of each student from the data, provides analysis and suggestions, helps the teacher find the problems in the teaching process in time, and points out the learning level of each student efficiently. With the development of Internet technology and artificial intelligence technology, education is developing in a diversified way. The continuous online education, online classes and moocs have attracted a large number of offline students and greatly expanded the Internet education market.

With the infiltration of artificial intelligence technology, the Internet education mode no longer stays in the original video class mode, and can even be separated from the teachers, adopting programmed teaching content, and using new technologies, such as voice recognition, visual analysis, machine discrimination, data collection to complete the man-machine interaction teaching process. At this time, the role of teachers is to guide students to learn, and the mechanical knowledge transmission can be completed by artificial intelligence. Moreover, with the development of the advanced technologies of artificial intelligence and neuroscience, some mental activities can be completed by AI. In the teaching practice, professors in Georgia Institute of Technology transform artificial intelligence technology into their own teaching assistants, and use AI to answer students' questions. Besides, AI can collect students' questions and answers, and make immediate evaluation and feedback. "Magic mirror", from the Hong Kong University of Science and Technology, acts as the professor's teaching assistant and answers students' questions. AI technology can reduce the workload of teachers, answer students' questions in a timely manner, and analyze students' learning effects.

Changes in the English Teaching Methods. The use of AI enriches the teaching methods of foreign language learning vividly, such as man-machine interaction, classroom interaction and communication between AI robot and students. The combination of AI and VR technology is also conducive to the realization of visual real situation teaching. Conversational education will become an important application of AI technology. Through speech recognition technology, AI first understands students' questions, then makes intelligent analysis of cloud resources, then analyzes the

answers, and finally expresses the answers with voice synthesis technology. Some AI with the function of intelligent translation can do real-time translation, which makes the robot not limited by language and country, and can carry out multilingual dialogue and solutions with students at the same time. In the language education which focused on listening, speaking, reading and writing training, this technology has been fully utilized and developed. Artificial intelligence provides new ideas for English learning.

When learning English, the mechanized part can be carried out by AI, such as the memorization of programmed grammar, phrases, sentence patterns and vocabulary, as well as test-taking exercises and formatted writing. This part of the learning process can completely become independent learning, without the arrangement and explanation of the teacher. AI can carry out targeted exercises according to the needs of students and make timely analysis and judgment. According to the learning data of students, it can clearly grasp the learning dynamics of students and record their advantages and disadvantages. The cutting-edge technology of VR turns traditional classroom teaching into situational teaching. For example, AI and VR can help students feel the workplace, office environment, meeting environment and negotiation environment in the real business situation through visual reality, and complete the language practice under the real situation with the help of language recognition technology. This technology makes up for the theoretical teaching that is divorced from the actual environment in the traditional foreign language teaching. The use of visual technology can greatly improve students' participation and interaction in learning and produce positive teaching effects.

Changes in Teaching Evaluation Methods. At present, the application of artificial intelligence technology in teaching evaluation is quite mature. Take a picture of the completed assignment and upload it, and just in one second, the AI can identify the wrong question. In 2017, Iflytek, the leader of artificial intelligence technology in China, released the latest application results of its five artificial intelligence in the field of education, including "intelligent paper and pencil class", "intelligent homework platform" and "intelligent paper work", which enable teachers to get rid of the pressure of correcting a large number of homework and giving test questions. In the practice of foreign language assessment, Iflytek has also developed the English composition correction system, which is widely used. In addition, through speech recognition and easy analysis technology, it can help complete the assessment of spoken foreign language, correct and improve students' pronunciation.

The Application of Artificial Intelligence in Improving the Efficiency of English Learning

Deep learning based artificial intelligence can also solve the problems you encounter in study. As long as you have a machine, or a mobile phone, or a watch, it will satisfy your thirst for knowledge at any time. You can master and learn not only English, but also the languages of all mankind. The way of language teaching will change from the gradient "extensive and profound" teaching and learning mode according to the different levels of language learners to the tailored and more targeted "profound and demanding" expert teaching and the learning mode that can be guided by machine and output demands.

Provide Abundant Resources for Learners. Thanks to the wide application of the Internet and big data, teaching resources and means are no longer limited to traditional textbook output and electronic materials from books. Instead, it uses the big data platform to collect a wide range of teaching materials and become a shared resource to enrich learning samples. In the past, people had to learn English by listening to lectures in large classes on site or by using some learning software. The learning software only had some fixed audio and video, and some of them were live broadcast, so if they missed the live broadcast time, they could not continue to use. With the development of artificial intelligence technology, the content of a lot of online learning English APP become more rich, and easy to use. Also, through the voice technology of artificial intelligence, a large number of excellent English resources are collected together, which can judge the learning level of users, and then push the knowledge that conforms to the learning level of users, providing rich resources for learners.

Realize Man-machine Interaction. Man-machine interaction is the most important reform brought by artificial intelligence technology to English learning. In the past, online English learning

was still in the traditional way of infusion, with teachers giving lectures and students listening to lectures. However, it was impossible to accurately evaluate the effect of courses and the standard of spoken English. But the artificial intelligence technology has solved this difficult problem well. The man-machine interaction realized by artificial intelligence technology is very suitable for oral English practice. Through the voice recognition and semantic understanding technology of artificial intelligence, it can accurately and quickly identify the problems of users in the process of English pronunciation, so as to make targeted corrections to the pronunciation problems of users. This two-way learning method can save users a lot of time, so that users can conduct targeted learning to a better grasp of knowledge in a limited time, and then help users to achieve more efficient learning results. According to relevant data, our students spend a lot of time on English language learning, 2000-2500 hours per person to practice English, but the effect is not good. Many learners practice "dumb English" at last, and the main reason is the lack of English communication, interaction and fixed link. Through the learning with artificial intelligence technology, for our English learning in the future, from zero basis to fluent communication, learning time will fall to 500 hours, so it will greatly improve the efficiency of English learning, learning time is saved.

Teach Students According to Their Aptitude. "People-oriented, individualized teaching" has always been the direction and focus of China's educational reform. There are more than 500 million English learners in China, each of whom has a different basic level of memory and comprehension. In the past, most online learning software was designed for all users to use the same set of courses. It was difficult to meet the needs of users with different basic knowledge and learning ability, resulting in low learning efficiency and unimproved learning enthusiasm of users. The man-machine interaction realized by artificial intelligence technology, the background technology will record the user's learning situation. It can use big data analysis and processing technology to provide different levels of users with different learning content on the basis of collected information, and adjust the learning content according to the learning progress and situation at any time. This kind of individualized teaching, which is based on artificial intelligence technology, fully meets people's requirements for personalized English learning. Appropriate and scientific learning courses and learning paths are developed according to users' own conditions, which will help users avoid detours, increase the fun of learning and improve the efficiency of learning.

Improve Learning Autonomy. From the perspective of learning, autonomy is one of the important factors to promote learning progress. The application of artificial intelligence in English learning has effectively improved people's autonomy in English learning. Take "English liulishuo" for example, the software divides English proficiency into different level: entry level, basic interpersonal communication, cet-4 and cet-6, and further study abroad. Each level has a corresponding learning content. Before learning courses, each user will have a comprehensive evaluation including listening, speaking, reading and writing. The computer uses the voice recognition, data analysis and processing and other technologies in artificial intelligence technology to determine the user's basic level, and according to the user's learning cycle to achieve the goal level, develop the corresponding course content. The system will record the reading, listening and growth of the users in their learning process. Also, the system will score according to the scientific scoring rules so that users can know their learning progress at any time. Most important, it plays the role as a reminder and encouragement. Looking at their average score, improved learning efficiency and growth, users will have a sense of achievement, enjoy the joy of success, and then learning autonomy greatly improved, learning efficiency also improved.

Summary

With the continuous development of economic globalization, international economic and trade exchanges and cooperation are becoming more and more frequent. Chinese enterprises are gradually going out to compete for a place in the world, and more people in China are going abroad to study and travel. As a result, proficiency in a foreign language is increasingly becoming an essential basic skill. Artificial intelligence technology collects rich English resources into an APP, and provides the corresponding courses according to different areas, different basis, different learning ability as well as

the different needs of people, which greatly improved the efficiency of English learning. Users will learn what they want to learn in a limited time, making English learning more interesting, convenient and efficient. With the continuous maturity and in-depth application of artificial intelligence technology, Chinese people will make great progress in English learning in the future.

References

- [1] Russell, Stuart J. and Norvig, Peter: *Artificial Intelligence: A Modern Approach[M]*, Qinghua University Press: Beijing(2013)
- [2] Hua Lulu, Chen Lin and Sun Mengmeng: Research on the Improvement of English Learning by Artificial Intelligence, Modern Distance Education, (In Chinese) Vol.6 (2017), pp.27
- [3] Godwin-Jones, R.: Augmented Reality and Language Learning: From Annotated Vocabulary to Place-based Mobile Games, Language Learning & Technology, Vol. 3 (2016), p. 9
- [4] Ho, S., Hsieh, S., Sun, P., and Chen, C.: To Activate English Learning: Listen and Speak in Real Life Context with an AR Featured U-learning System, Educational Technology & Society, Vol.2 (2017), p.176.
- [5] Ye Rong: Research on the Application of Mobile Learning in English Autonomous Learning, Journal of Sichuan College of Education, (In Chinese), Vol. 10 (2011), pp.26
- [6] Mayer, R. E: *Cognitive theory of multimedia learning[M]*, Cambridge University Press, UK(2009), p.31
- [7] Salmon, J., and Nyhan, J.: Augmented Reality Potential and Type: Towards an Evaluative Framework in Foreign Language Teaching, The Journal of Language Teaching and Learning, Vol.1 (2013), p. 54.
- [8] Michael Negnevitsky: *Artificial Intelligence: A Guide to Intelligent System [M]*, Third Edition, Pearson Education Limited (2012).
- [9] Li Ma and Ke Shen: Research on the Augmented Reality Foreign Language Teaching Environment and its Multi-modal Discourse, Modern educational Technology, (In Chinese), Vol.7 (2012), p.56.
- [10] Information on <https://en.wikipedia.org/wiki/Big-data>.
- [11] Information on <https://www.pigai.org/>.