

Research on the application of artificial intelligence in college English teaching from the horizon of ecolinguistics

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ABSTRACT

The development of modern technology is changing the way of English teaching in colleges and universities, but the coordination between technology application and language learning needs to be further explored. Ecolinguistics focuses on the dynamic relationship between teachers and students and the environment and technology in the language education process. It emphasizes the overall balance of the teaching system. Artificial intelligence technology has shown unique value in English teaching, such as adaptive learning recommendation, real-time speech error correction, and other functions, which improve teaching efficiency and affect the interaction quality of traditional classrooms. Therefore, by analyzing the interaction between artificial intelligence and teaching elements, this paper discusses the feasible path of establishing the coordinated development of technology applications and language learning environments to provide new ideas for improving English teaching quality in colleges and universities.

KEYWORDS

ecological language; artificial intelligence; College English

The key to language teaching is to promote effective learning and communication. In the traditional classroom, teachers usually adopt a unified teaching progress and evaluation criteria, which can not fully adapt to students' individual differences. However, ecological language holds that the equipment, resources, and interpersonal relationships in the teaching environment together constitute the growth space of learners, and the introduction of artificial intelligence has changed the way of teaching information transfer. For example, the intelligent correction system can give immediate feedback on language errors, but it still has limitations in cultivating students' critical thinking and cultural understanding. Therefore, this paper will systematically sort out the correlation between artificial intelligence and teaching elements in order to construct an intelligent English teaching model that promotes the common development of teachers and students.

1 The conceptual basis of ecolinguistics and language teaching

1.1 The basic concepts of ecolinguistics

Ecolinguistics is a discipline that studies how language interacts with its environment. It holds that language does not exist alone but is closely related to learners, social culture, technical tools, and other factors. For example, a person's ability to learn English depends on memorizing words or studying grammar, the classroom atmosphere, the teacher's teaching methods, and even the learning software used. Traditional linguistics focuses on the analysis of the rules of language itself (such as sentence pattern and pronunciation). At the same time, ecolinguistics pays more attention to the state of language in actual use, which regards language learning as a whole process. It is argued that language competence can be improved only when the learner's environment (Classroom, peer interaction, and teaching resources) is coordinated. Suppose there are lively discussions and targeted exercises in the classroom, and the teacher can adjust the teaching schedule according to students' feedback. In that case, the environment will be more in line with the concept of ecolinguistics. The practical guiding significance of ecolinguistics to teaching is very clear, focusing on textbooks and paying attention to the balance of the whole learning environment^[1].

1.2 The relationship between language learning and teaching in the horizon of ecolinguistics

From the perspective of ecolinguistics, language teaching needs the support of teachers, students, and teaching tools. For example, suppose a teacher is too busy explaining the lesson to observe the students' reactions. In that case, the effect of the lesson may be significantly reduced, and the students are passively listening to the lesson without participating in discussion or practice. Language skills can also be challenging to improve. This theory emphasizes that the various parts of language teaching must cooperate to form a virtuous circle. Students are no longer "Indoctrinated" in this process but active participants. When a social topic is discussed in groups in class, students need to express their views in English and listen to others' opinions, and teachers provide guidance and feedback. Such interactions develop

both language skills and communication skills. Applying this concept in college English classrooms can avoid the "One size fits all" teaching mode and let students naturally improve their language ability in real communication^[2].

1.3 The Application Potential of ecolinguistics in College English teaching

College English classes often face a problem: how to make students of different levels learn effectively. Ecolinguistics aims to solve the problem by optimizing the overall teaching environment. Schools can use online learning platforms to allow students to practice listening or reading at their own pace and use class time for group discussion or role-playing so that theoretical learning and practical application of the combination, which is more than the traditional "Class unity to do questions" to adapt to individual differences. In addition, avoid over-reliance on technical tools. Although intelligent software can quickly correct grammar errors, students will lose deep communication with teachers if they use machines to correct essays entirely. Ecolinguistics advocates that technical tools should supplement rather than replace the role of human beings. Teachers can let students use software to check the fundamental errors in their compositions first and then face-to-face explore how to make expressions more vivid and logical. This kind of cooperation improves efficiency and preserves the humanistic interaction in teaching. The value of ecolinguistics is to remind us that no matter what technology is used, the ultimate goal is to build a learning ecology where teachers and students can grow naturally.

2 Application of artificial intelligence in college English teaching

2.1 Basic application of artificial intelligence technology in language teaching

The most basic role of artificial intelligence in college English teaching is to solve three problems: What to practice, how to practice, and whether to practice correctly or not. Students can practice English pronunciation through intelligent software. The software will compare the difference between the student's pronunciation and the standard pronunciation sentence by sentence and directly tell the student which words are not pronounced correctly and how to adjust the tongue's position. In the past, it was difficult for teachers to correct each student's pronunciation individually, but artificial intelligence can provide one-to-one real-time feedback. Such tools can also automatically analyze students' answers: if a student repeatedly answers easy questions correctly, the system will automatically push more difficult questions; if a student repeatedly makes mistakes on a grammar point, the system will focus on related exercises. However, such technology is currently only useful in some areas, such as listening, reading, basic writing, and speaking practice. AI has a more limited role in deep-thinking tasks, such as discussing cultural differences or revising complex academic papers, and the teacher's experience must judge the data. The core value of artificial intelligence is to help teachers save repetitive work, but how to use it still depends on the teacher's teaching experience^[3].

2.2 The impact of AI on English learners' learning behavior

The most direct impact of artificial intelligence on students is the change in learning habits. In the past, students mainly relied on classrooms and textbooks. Now, they can use their mobile phones to memorize words and practice speaking anytime. For example, while waiting for the bus, students can open the software and practice listening for 5 minutes. Before bed, they can use the AI voice dialogue function to simulate English chat. However, this kind of "Fragmented learning" also has side effects. Some students are used to looking up words in translation software, and when they see new words, they will look up the meaning directly instead of guessing the meaning through context. Some students only do the system to push the problem but rarely take the initiative to sort out the wrong problem or summary of learning rules^[4]. In addition, artificial intelligence makes students more aware of their learning status. For example, the system will tell the student, "Your listening skills are good in everyday conversation but not good enough in academic lectures." This feedback will motivate the student to seek academic listening materials to practice actively. Some students will also persist in their studies because of the goals set by the system (such as "continuous check-in for 30 days"). Even if they initially do it to complete the task, they will develop good habits over time.

2.3 The development trend of artificial intelligence-assisted teaching tools

The future development of artificial intelligence in teaching tools has two key points: solving complex problems and integrating them into real classrooms. Earlier tools were limited to correcting grammar errors or practicing pronunciation. The new generation of tools will be more "Comprehensive." For example, intelligent essay marking can not only flag grammatical errors but also analyze logical problems in a student's essay, such as a paragraph that lacks supporting examples or a conclusion that does not agree with the point made at the beginning. This requires AI not only to recognize words and sentences but also to understand context. At the same time, artificial intelligence is no longer an "After-school

supplement" but directly enters the classroom teaching link. When a teacher initiates a discussion in class, AI can analyze students' statements in real time and quickly generate keyword summaries (such as "60% of students mentioned environmental issues in the discussion"). It helps the teacher adjust the rest of the lesson immediately. Students can also use in-class translation tools to engage directly with complex topics such as foreign news and international issues without understanding every word. However, this deep integration requires a balance between technological advantages and human intervention: using artificial intelligence to improve efficiency while avoiding weakening communication between teachers and students.

3 The actual effect of artificial intelligence application from the horizon of ecolinguistics

3.1 The teaching mode of combining artificial intelligence with ecolinguistics

According to ecolinguistics, language learning must be integrated into the real cultural and social environment, and the application of artificial intelligence is helping to achieve this. Specifically, the core of this teaching mode is to let students learn English in different life scenarios rather than just memorizing words or grammar rules. For example, students can use artificial intelligence to enter a virtual "International conference" scene. They need to use English correctly when speaking to virtual characters in different countries and learn to adjust their presentation to the other person's cultural background (such as avoiding certain sensitive words or choosing appropriate, polite language). In this way, English learning no longer stays in the textbook but is close to the real communication needs. However, the application of artificial intelligence in such scenarios is still imperfect, and its functions mainly rely on pre-set rules and case libraries. However, the use of real-world language is complex and changeable. For example, the unique language habits of certain minority groups or informal expressions in specific situations may not be accurately identified and addressed by AI, and teachers need to clarify learning objectives through teaching design, avoiding making ai-generated scenarios too one-sided^[5].

3.2 The optimization effect of artificial intelligence on teaching content, process, and results

The key to language teaching lies in the combination of knowledge learning and practical application; the optimization effect of artificial intelligence can be reflected in three aspects: flexible adjustment of teaching content, dynamic tracking of the learning process, and real feedback on the learning effect. In the teaching content, artificial intelligence can match the learning materials according to the student's professional backgrounds or interests. Environmental engineering students, for example, will learn English and consolidate their knowledge by reading assignments that include the latest climate research and writing exercises focusing on environmental issues. In the learning process, AI can monitor students' weaknesses in real-time (such as grammatical errors in spoken language or lexical blind spots in listening) and focus on pushing relevant exercises to avoid wasting energy on what they have mastered. For the evaluation of learning results, traditional tests often focus on whether the grammar is correct, while artificial intelligence can simulate real situations to test students' language application ability. This feedback is closer to language function in the real world, helping students understand how to use English to solve problems rather than cope with the test.

3.3 The limitations of artificial intelligence in the horizon of ecolinguistics

The limitation of artificial intelligence in language teaching lies in the fact that language is a living social behavior, and the setting of artificial intelligence is still too fixed. The language model of artificial intelligence is usually based on standardized language data training, which makes it challenging to adapt to the language diversity in reality. For example, a mixture of dialects used in some areas, or Internet slang popular among young people, is often judged "Wrong" by the system. However, these phenomena reflect the flexibility and vitality of language in actual use. The scene constructed by artificial intelligence is essentially a pre-designed process, which makes it difficult to restore the randomness and emotional interaction in real communication. In real dialogue, people will observe each other's tone and expression to adjust the expression. At the same time, artificial intelligence can only respond according to fixed logic, leading students to form mechanical communication habits. Moreover, AI can not replace the cultural and social thinking behind the language. For example, students who practice English conversations about ordering in a coffee shop fail to understand how a global chain brand influences local language habits and lifestyles. This critical discussion must rely on the teacher's guidance, not technical tools.

4 Conclusion

This paper reveals the dilemma of the adaptation between technological tools and the dynamics of language ecology. Artificial intelligence can optimize language teaching through scenario simulation and data-driven. However, its pre-designed rules make it challenging to cover the language's social and cultural complexity, and it is easy to simplify diverse language practices into standard programs. Therefore, the practice of language education should focus on promoting the coordination of technical assistance and human guidance, and artificial intelligence can be used to build a high-simulation cross-cultural language environment to enhance the situational relevance of learning. Teachers' ability to actively intervene in the application of technology is strengthened, and the uncertainty in real interaction is restored by manually calibrating the cultural rule base and designing mixed reality tasks. Through the two-way reflection and cooperation between technology and education, human-computer collaboration can truly serve the growth of students' language ability in multiple contexts and finally realize the inheritance and innovation of "Language vitality" advocated by ecolinguistics.

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