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AI-EMPOWERED COLLEGE ENGLISH BLENDED TEACHING IN CHINA FROM THE PERSPECTIVE OF EDUCATIONAL ECOLOGY

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Abstract: With the rapid development of information technology, especially the emergence of ChatGPT, traditional college English teaching in China can not meet college students' needs and faces a multitude of challenges, including large class sizes, teacher-centered teaching methods, lack of teacher competence in information technology, limited authentic language use, and non-diversified teaching evaluations. Therefore, based on educational ecology, AI-empowered college English blended teaching has been proposed and explored, which encompasses pre-class knowledge delivery, while-class knowledge internalization, and after-class knowledge expansion. This AI-empowered college English blended teaching model utilizes AI for online diagnostic assessments, MOOC platforms for online teaching, offline interactive classroom activities and AI feedback systems to cater to the diverse and personalized learning needs of students, thereby enhancing their English skills, maintaining the ecological balance of college English teaching system and promoting teaching effectiveness.
Keywords: College English teaching; Educational ecology; AI technology; Blended teaching

1 INTRODUCTION

Chinese College English Teaching Guide points out that college English teachers should fully leverage the important role of modern educational technology, especially modern information technology, in English teaching, and vigorously promote the deep integration of modern information technology and curriculum teaching[1]. Clearly, college English teaching should gradually expand towards intelligence, diversification, and personalization. The teacher-centered traditional college English teaching model no longer meets the needs of the new information age, and teaching reform is imperative. Constructing an AI-empowered blended teaching model for college English is an urgent task for educational transformation.

The AI-empowered blended teaching model for college English effectively integrates artificial intelligence (AI) technology into the college English blended teaching. It applies AI technology to various stages of blended teaching, including online knowledge delivery before class, offline knowledge internalization in class, and online knowledge expansion after class. For instance, it uses AI assessment and diagnostic data to accurately pinpoint student needs, employs MOOC platforms to conduct online intelligent teaching, and utilizes AI feedback systems to provide timely feedback to students. This teaching model not only captures the interest of students, today's "digital natives" , and increases their enthusiasm for learning, but also meets the diverse and personalized needs of students, helping them better master English skills.

Educational ecology posits that college English teaching is a complete language teaching ecosystem, in which ecological factors, such as teachers, students, teaching materials, teaching content, teaching methods, instructional design, teaching environment, teaching technology, and teaching assessment, interact and influence each other. The absence of any one of these ecological factors can lead to an imbalance in the entire ecosystem, thereby affecting teaching effectiveness. Only by maintaining the balance of the ecosystem can the effectiveness of classroom teaching be promoted. However, with the rapid development of AI technology, especially the emergence of ChatGPT, the ecological factor of teaching technology has brought significant impact and challenges to college English teaching, causing an imbalance in the ecosystem of college English teaching. Many teachers feel confused and at a loss, wondering how to effectively integrate AI technology into college English blended teaching to promote teaching effectiveness and maintain the ecological balance of college English teaching. Therefore, this research aims to construct an AI-empowered blended teaching model for college English from the perspective of educational ecology, which will develop specific application measures for AI technology in various ecological factors, providing clear teaching guidance and reference.

2 CHALLENGES OF TRADITIONAL COLLEGE ENGLISH TEACHING IN CHINA

In the context of globalization, English has become an indispensable skill for Chinese college students. However, traditional college English teaching in China faces a multitude of challenges that impact the effectiveness and quality of language education. These challenges are multifaceted. Below is a detailed exploration of these challenges.

2.1 Large Class Sizes

In many universities across China, college English courses for non-English majors often involve classes with over 60 students, which are widely considered large class sizes. Large class sizes restrict the interaction between teachers and students, making it difficult for teachers to provide personalized attention and tailored feedback to each student[2]. This often results in a one-size-fits-all approach to teaching, where individual learning needs and styles are not adequately addressed.

2.2 Teacher-centered Teaching Method

Traditional teaching methods, such as the grammar-translation method, direct method, audio-lingual method, essentially follow a teacher-centered teaching model. Teachers lecture, present information and demonstrate concepts and examples to students, which results in students being passive recipients of information rather than active participants in their learning process, thereby failing to mobilize their enthusiasm and initiative [3]. Students may disengage, leading to poorer learning outcomes.

2.3 Lack of Teacher Competence in Information Technology (IT)

Many college English teachers in China lack the necessary technological skills to integrate information technology (IT) into their teaching. And some teachers may be familiar with common IT tools, but they often lack technological skills in more advanced areas such as video and audio processing, network teaching platform and website design and construction[4]. This limitation restricts the richness of educational resources and methods that can be provided in college English teaching, especially with the wide application of AI technology. The ongoing professional training is needed to enhance teachers' IT skills to acquire how to integrate these skills into teaching practices.

2.4 Few Authentic Language Use

Many students have limited opportunities to engage with English in authentic contexts both inside and outside the college English classroom, which can hinder students' ability of real-life language use, so that there are phenomena of unnatural language use of Chinese students, such as dumb English, Chinglish. Besides, if there is a lack of practical application in authentic situations during the learning process, students might feel that the learning outcomes are difficult to transform into actual abilities, thereby reducing the learning enthusiasm and motivation.

2.5 Non-diversified Teaching Evaluation

Traditional evaluation in college English teaching is not diversified, focusing solely on the final exam scores, which only tests English knowledge such as vocabulary, grammar, and reading. This summative evaluation method neglects to evaluate students' active participation, enthusiasm, behavioral performance and creativity in the learning process[5], making the evaluation results not comprehensive. Besides, in college English teaching, teacher evaluation is usually the only approach of evaluation, while students' self-evaluation and peer evaluation are often overlooked. This single evaluation approach may lead to bias and unfairness in the evaluation results. Non-diversified teaching evaluation limits the comprehensive development of students' English skills, affects teaching outcomes, and hinders the improvement of teaching quality.

3 THEORETICAL FRAMEWORK: EDUCATIONAL ECOLOGY

In 1976, Lawrence A. Cremin, Dean of the Teachers College at Columbia University, combined ecology with pedagogy and formally introduced the concept of "Ecology of Education" in his book Public Education. Cremin believed that education should be viewed as an organic, complex, and unified ecosystem, with various ecological factors being organically interconnected[6]. Domestically, in 1990, Wu Dingfu and Zhu Wenyi published the first Chinese textbook Educational Ecology. The book detailed the ecological environment, ecological structure, ecological function, and assessment of education, emphasizing the interplay and mutual influence of various educational ecological environments and ecological factors on education[7]. Based on the theory of educational ecology, college English teaching is regarded as a complete language teaching ecosystem. In this system, teachers, students, teaching environment, teaching materials, teaching technology, and teaching evaluation, as ecological factors, interact and influence each other, maintaining the balance of the ecosystem and promoting the teaching effectiveness.

4 AI-EMPOWERED COLLEGE ENGLISH BLENDED TEACHING IN CHINA

The concept of blended teaching emerged as a popular pedagogical approach at the beginning of the 2000s. The term "Blend-Based learning" or "Hybrid-learning" came into widespread use around 2013[8]. Blended teaching, also known as blended learning, is an educational approach that combines traditional face-to-face classroom methods with online and digital learning activities. It's designed to leverage the strengths of both in-person instruction and technology-based learning to create a more flexible and dynamic educational experience. Based on educational ecology, the

AI-empowered college English blended teaching will implement a hybrid teaching approach that combines “online” and “offline”, encompassing pre-class, while-class, and after-class teaching stages.

4.1 Pre-class: Knowledge Delivery

There are three steps conducted during pre-class teaching stage.
The first step is to ensure teachers and students have grasped the required AI technology. Teachers and students are trained for the application of AI technology to lay the foundation for the smooth implementation of this teaching model.
The second step is to analyze the needs of students. Teachers utilize AI diagnostic assessment system, such as The UDIG Intelligent Diagnostic Assessment System, to diagnose students' college English skill levels, with teachers carefully analyzing the diagnostic data to efficiently and accurately pinpoint students’ needs, which helps to identify their strengths and weaknesses, and provides feedback and learning suggestions for both teachers and students.
The third step is for teachers to prepare teaching materials and for students to acquire pre-class online knowledge. Teachers prepare digital materials and AI-assisted exercises for students’ pre-class learning. Moreover, teachers also use AI models, such as ChatGPT, Kimi, Doubao and Gamma, to assist in determining teaching resources that meet students’ needs, formulating teaching designs and making PPT for while-class classroom instruction. They also use AI drawing and AI voice generation to prepare images, audio, and video required for teaching. On the other hand, students acquire pre-class knowledge and English skills of college English on AI-empowered teaching platform, such as Unipus (AI version). An AI digital human is employed to be learning companion to monitor, train, and provide feedback on their learning, helping to improve the efficiency of self-directed learning.

4.2 While-Class: Knowledge Internalization

During while-class teaching stage, teachers organize students to participate in classroom activities and exercises to practice the knowledge and English skills of college English acquired in the pre-class teaching stage, enabling students to fully grasp and flexibly apply the knowledge and English skills. For classroom activities, AI can intelligently divide students into different groups based on their learning characteristics, interests, and ability levels, ensuring that members within each group can collaborate and progress together. Teachers use AI classroom interaction tools, like Yu Classroom and Nearpod, to increase students’ engagement and learning outcomes. In addition, AI provides online discussion platforms and document collaboration tools to help students engage in collaborative learning more effectively.
And AI teaching assistants or virtual tutors answer students’ questions verbally and facilitate their interactions and discussions.

4.3 After-Class: Knowledge Expansion

During after-class teaching stage, AI tools, such as ChatGPT and ChatGLM, are used to enhance knowledge retrieval through natural language processing capabilities and connect information to external resources, helping students to expand their knowledge after class. And teachers also use AI technology to create homework exercises to help students consolidate their acquired knowledge and English skills. Students apply AI to practice English skills. For example, students can have an English conversation with an AI digital human to practice their oral English in Doubao. By utilizing AI tools, personalized learning paths and feedback can be provided timely by assessing students’ assignments to help students better construct knowledge. For instance, personalized English writing feedback and suggestions for improving English writing are provided by assessing students’ English essays based on AI, such as iWrite and Grammarly. Besides, educational AI agents provide after-class tutoring and Q&A services, which offer immediate answers and explanations based on students’ questions, helping them to cement knowledge into their consciousness.

5 CONCLUSION

The AI-empowered college English blended teaching in China represents a significant stride towards enhancing the educational experience and outcomes for students. This research has underscored the importance of adopting an AI-empowered blended teaching model that aligns with the principles of educational ecology, ensuring a balanced and effective college English teaching ecosystem.
The research highlights the transformative impact of AI on the educational ecosystem, particularly in the context of college English teaching. As AI continues to evolve, it is imperative for educators to keep pace with these technological advancements and integrate them effectively into their teaching practices. This will not only maintain the ecological balance of the teaching system but also enhance the overall quality of language education.
The AI-empowered college English blended teaching presents a forward-thinking approach that is responsive to the demands of the new information age. It offers a comprehensive solution to the challenges of traditional teaching methods and paves the way for a more dynamic, interactive, and personalized learning experience.

COMPETING INTERESTS

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REFERENCES

[1] College Guidance Committee for Foreign Language Teaching of Higher Education Institutions in Ministry of Education. College English Teaching Guide (2020 Edition). Beijing: Higher Education Press, 2020.
[2] Liu F H. A Critique of Large Class Size and Excessive Teaching Hours for College English Teachers in College English Courses. Curriculum and Teaching Methodology, 2020, (3): 77-80.
[3] Wang J J. Application of Interactive Teaching Method in College English Teaching. In 9th International Conference on Education and Management, 2019: 842-846.
[4] Du Y X. Research on College English Teachers' Information Literacy in Information Environment. English Language Teaching, 2017, 10 (11): 37-43.
[5] Zhao W Q. Research on College English Teaching Evaluation Methods. International Journal of New Developments in Education,2023, 5(10): 85-88.
[6] Cremin L A. Public Education. New York: Basic Books, 1976.
[7] Wu D F, Zhu W Y. Educational Ecology. Nanjing: Jiangsu Education Publishing House, 1990.
[8] Oleksandra S. The History and State of Blended learning. In Preparing for the Digital university: A Review of the History and Current State of Distance, Blended, and Online Learning, 2015: 55-92.