

Technology-Facilitated Oral English Learning Among Chinese University Students: ChatGPT as the Digital Future

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Abstract. In the digital age, the quest to improve oral English proficiency among Chinese university students has led to the exploration of innovative solutions, with ChatGPT emerging as a promising tool. This paper explores the integration of ChatGPT into English language learning with the aim of overcoming the traditional barriers faced by learners. The comprehensive analysis of this study shows that ChatGPT, powered by advanced Natural Language Processing and Large Language Model technologies, significantly improves speaking skills by providing personalised, interactive practice opportunities. The findings suggest that while ChatGPT has the potential to revolutionise traditional learning methods and democratise language learning, its full potential can only be realised when integrated into holistic learning strategies that also emphasise speaking and listening skills. The study highlights the importance of addressing the limitations and ethical considerations of ChatGPT to ensure that it complements human teaching methods, thereby enhancing the overall learning experience. The implications of this research go beyond the academic, offering insights into pedagogical innovation and the future of language education in a technology-driven world.

Keywords: ChatGPT, Computer-Assisted Language Learning, Mobile-Assisted Language Learning, Technology-Facilitated Oral English Learning, AI-Facilitated English Learning.

1. Introduction

English is the most spoken language globally, with over 1.5 billion speakers using it as their first, second or foreign language [1]. Having a good command of English is crucial for success in various fields, including academics, business, and international relations. Speaking is often considered the most important skill among the four (listening, speaking, reading, writing). Many learners' express frustration after years of studying English, yet are unable to speak it, Chinese tertiary students are no exception. Learning a new language can be challenging, especially for foreign language students trying to master English.

Undergraduate students in China who wish to improve their English proficiency must enroll in the College English program. In particular, the National College English Teaching Syllabuses (NCETS)-accredited College English curriculum uses unified texts and places a strong emphasis on reading, writing, speaking, listening, and translation abilities. Upon program completion, students are required to take the College English Test (CET), which consists of three exams: CET-4, CET-6, and CET Speaking English and earning CET certificates have been prerequisites for undergraduate graduation in most Chinese universities [2]. Although the NCETS prioritizes communicative competence and language skills, College English textbooks have traditionally focused heavily on grammar, translation, and reading instead of speaking.

Computer-Assisted Language Learning (CALL) and its subset, Mobile-Assisted Language Learning (MALL), use digital technologies to improve language education. CALL incorporates software and online platforms for interactive and multimedia language learning exercises, offering immediate feedback and allowing learners to progress at their own pace. MALL leverages mobile devices like smartphones and tablets, offering flexible learning through apps and augmented reality for immersive experiences. Both methods have transformed language education by personalizing learning, engaging learners, and providing access to extensive resources outside traditional classrooms. The rise of AI, such as OpenAI's ChatGPT released in November 2022, has further evolved language learning, especially for English as a Foreign Language (EFL). ChatGPT, a model

that combines OpenAI's Large Language Model (LLM) with interactive capabilities, offers personalized English learning experiences, enabling practice in speaking and listening and providing instant feedback on language use, enhancing the learning process. Giving foreign language learners genuine opportunities to enhance their speaking proficiency in an EFL setting is challenging. They can converse with ChatGPT, nevertheless. It is imperative to examine the impact of ChatGPT on the speaking competence of Chinese university students, given that speaking competence is widely recognized as the most crucial component of the EFL environment [3]. This study is to investigate Chinese university students' perceptions of using ChatGPT to help them improve their spoken English as well as the use of ChatGPT in spoken English learning.

2. The Dilemma of Oral English Learning in Chinese Higher Education

The teaching methods in China are, to a great extent, test-oriented and teacher-centred, and spoken practice is rare in class [4]. Gan notes that the English taught in universities in China is often described as "deaf-and-dumb English" [5]. This means most Chinese tertiary students still need to improve their English speaking, and the significant challenge they face is the lack of speaking practice, which is essential for effective communication and language acquisition. Because English teaching in the classroom focuses on grammar, translation and reading, there is a lack of opportunities for speaking practice in the classroom and the dominant language outside the classroom is Chinese. Without enough speaking practice, English foreign learners may struggle to build fluency and confidence in using the language, leading to demotivation and fewer opportunities to practice [6].

3. Possible Solutions: The Combination of Digital Technology and Oral Language Learning

Technology is always developing, and the use of technology has become an important part of the learning process in and out of the class. Every language class usually uses some forms of technology. Technology has been used to both help and improve language learning. Technology-Assisted Language Learning (TALL) is an increasingly significant area in language education, leveraging various technologies to enhance language skills. Prior to the emergence of AI, the two most significant stages in the development of language learning technology aids were Computer-Assisted Language Learning and Mobile-Assisted Language Learning.

4. Previous Technology-Facilitated Learning

Before the advent of AI in English language learning, several technologies were employed to assist learners. These technologies, although not as advanced as AI, played a significant role in facilitating English language acquisition.

Computer Assisted Language Learning offers a wide range of methods and tools for learning English. These include language learning software, E-learning materials, and online learning platforms, as well as virtual classrooms and online education. These CALL methods can be tailored to students' needs and preferences to improve their English language skills. CALL systems were extensively used for English learning, offering interactive and productive methods for language skill improvement. These systems allowed for practices such as speaking and listening exercises without requiring interaction with native speakers, thus reducing learners' fear and anxiety [7]. The use of CALL software, such as Rosetta Stone, has been shown to significantly improve students' proficiency in the English language, particularly in oral communication. The software's interactive nature motivates and engages learners, leading to better performance in speaking tests and increased levels of interaction and participation [8]. E-learning materials developed using information and communication technology (ICT) were available, but their effectiveness in improving speaking skills in English as a second language (ESL) and EFL contexts was not thoroughly proven [9]. Students

have positive perceptions of platforms like Blackboard for learning English. However, face-to-face classroom meetings are still preferred for improving speaking skills. Despite challenges such as insecurity and connectivity issues, online platforms can still contribute positively to learning speaking skills [10]. In addition to the above CALL methods, speech recognition technology can help students improve their pronunciation and grammar, while online language exchange communities provide opportunities to interact with other English learners and native speakers. Multimedia resources, self-directed learning tools, online dictionaries and translation tools can also be used to supplement learning and help students become more proficient in English.

MALL and CALL differ significantly in several ways. Firstly, MALL focuses on mobile devices such as smartphones and tablets to meet learners' needs for anytime, anywhere learning, emphasising mobility and portability. CALL, on the other hand, usually relies on computers and networks and is usually learned on desktop or laptop computers. MALL focuses more on mobile applications, mobile learning platforms and mobile-friendly learning resources, aiming to provide learners with a more convenient and flexible learning experience. Mobile Assisted Language Learning has become increasingly significant in the realm of English language learning, offering a range of advantages and diverse applications. Applications like WhatsApp have been effectively used in MALL, improving language learners' motivation and fostering engagement [11]. Several studies have highlighted the impact of app-based oral English practice in China, emphasizing the benefits these apps offer in improving spoken English skills. The Liulishuo app was found to enhance oral English practice among medical students, with improvements noted in vocabulary, pronunciation, grammar, and fluency [12]. The WeChat Mini Program Sharedaka has shown effectiveness in improving English speaking ability through oral English practice and teacher audio feedback, creating a relaxed communication atmosphere between teachers and students [13]. In summary, app-based oral English practice tools in China, such as Liulishuo and WeChat-based applications, have proven effective in enhancing various aspects of spoken English proficiency, including fluency, pronunciation, and overall communicative skills.

5. Current AI-Facilitated English Learning

CALL and MALL software or apps lack spontaneity. Take Talk to Me (language learning software published by Auralog), for example, features an interactive dialogue phase with videos and pictures of real-life communication scenarios. These scenarios cover everyday topics, tailored to cultural aspects of the target language country. Each dialogue involves around 15 questions with three answer choices. Learners can respond verbally using a microphone if automatic speech recognition (ASR) is enabled. The software then guides them to the next step, offering corrections or further instructions on intonation, vocabulary, and grammar. The dialogues are authentic yet carefully programmed by a computer. There is very little spontaneity, and communications between the actual and the imagined collide. The production of a message in real time is a key feature of natural communication, which is seen as a characteristic of communicative activity [14]. Can a computer use natural language with spontaneity to communicate with the learners? The chatterbot is one answer. Chatterbots, also referred to as chatbots, bots, avatars, or embodied conversational agents (ECAs), are computer programs designed to simulate human conversations in voice or text form, or both. ChatterBot is an AI-driven chatbot creation library using NLP to understand and mimic human conversations. It enhances its skills via machine learning from user interactions, becoming more accurate and adaptable over time in responding to various queries and topics. AI has existed for some time, and it may guide educators into an era of pedagogical innovation [15]. Though the development of AI has been underway for decades, the emergence of ChatGPT into education seems to have increased the speed of innovation [15]. Prior to OpenAI integrating Large Language Models (LLM) in AI, chatterbots in language learning were known for their interactivity and adaptability. They engaged students by mimicking real-life conversations and tailored their responses to various styles and topics, thereby enhancing personalized learning experiences. These tools provided a valuable means for

language practice, especially for learners without access to native speakers, ensuring consistent and convenient opportunities for improvement. However, despite these advancements, such chatterbots often struggled with understanding complex language nuances and contextual intricacies [16]. NLP is a broad field that encompasses a variety of techniques that enable computers to process and understand human language. Moreover, LLM is a specific technique within NLP that uses large amounts of data to train models to generate and understand complex natural language. The use of ChatGPT and ChatGPT-based chatbots for English-speaking practice offers a significant advantage in that it can process complex human language subtleties, enabling it to provide precise responses tailored to the learner's requests. This capability underlines ChatGPT's effectiveness in improving English speaking skills by providing a responsive, interactive learning environment that closely mimics natural human dialogue. When it comes to learning and teaching EFL, chatbots have the potential to offer students a personalized, interactive, and captivating learning experience. Benefits include the capacity to provide human-like replies and engagement, cost-effectiveness, tailored language education, a large knowledge base, real-time interaction and feedback, and natural language processing abilities [17]. In conclusion, the integration of ChatGPT and AI-driven chatbots into English language learning is a transformative step forward, providing personalised, interactive and highly effective practice opportunities. By harnessing the power of advanced NLP and LLM technologies, these tools offer a previously unattainable level of responsiveness and adaptability, significantly enhancing the learning experience and paving the way for pedagogical innovation in language education.

6. Future English Learning with ChatGPT

The future of enhancing English speaking skills with ChatGPT looks promising, with potential applications ranging from general language learning to specialized fields such as medical education. However, leveraging ChatGPT's full potential requires addressing its limitations and integrating it thoughtfully into comprehensive learning strategies that also focus on speaking and listening skills. Studies on AI-enhanced chatbots in contextual English learning environments suggest improvements in speaking and listening abilities among learners. This indicates that AI-driven platforms can provide a conducive environment for language practice, albeit the effectiveness may vary based on the design and implementation of learning activities [18]. As technology evolves, the integration of ChatGPT and similar AI technologies into English learning curriculums will likely become more sophisticated, offering personalized learning experiences that adapt to each learner's proficiency level and learning style. This tailoring could include interactive simulations and role-play scenarios in various contexts, from everyday conversations to industry-specific dialogues, enhancing both the breadth and depth of language skills acquired. Furthermore, the future may see AI not just as a tool for practice but also as a means to provide instant, nuanced feedback on pronunciation, grammar, and usage, enabling learners to refine their skills in real time and in a more engaging, effective manner. The advancement of AI in language teaching could significantly reduce the need for traditional human-led instruction. Highly motivated learners might prefer digital avatars over classroom settings due to the former's ability to offer personalized and adaptable teaching based on individual skills, interests, and needs. Conversely, less motivated learners might be drawn to language learning through AI-integrated online games, finding motivation in a more engaging and fun approach. Both scenarios suggest that AI's capacity to deliver interesting, personalized learning experiences could challenge the current role of classroom teachers in language education [19]. As AI becomes increasingly integrated into language education, traditional teaching methods may need to evolve, promoting a hybrid approach that combines the strengths of human interaction with the capabilities of AI. This could lead to a new educational paradigm where teachers act more as facilitators and mentors, guiding students through personalised learning paths created by AI, while also focusing on developing critical thinking and cultural skills that machines cannot replicate. ChatGPT can play a crucial role in democratizing language learning. Traditional language courses often require substantial financial investment or

access to specialized educational institutions. However, with ChatGPT, language learners can have a personalized language tutor available to them 24/7, completely free of charge. This accessibility empowers individuals from all walks of life to embark on their language-learning journey, regardless of their socioeconomic background. In the future, ChatGPT's role in English learning could extend beyond individual practice to become a key component in community and school-based programs, providing equitable access to quality language education for students worldwide. Ultimately, the progressive integration of ChatGPT and AI technologies into language education represents a significant shift towards more inclusive, adaptive and effective learning experiences, and promises to revolutionise the way English is taught and learned around the world.

7. Challenges and Limitations of AI-Facilitated English Learning

Despite the many advantages of AI in the field of language learning, it inevitably faces challenges and has its own limitations. The primary drawback of AI language learning technologies is their inability to connect with humans [20]. For learners who want a more individualized and participatory learning environment, this may be an issue [21]. This lack of genuine human connection not only affects the personalization of the learning experience but also highlights the fundamental gap in deep learning's capacity to fully grasp and interpret human language, underscoring the nuanced challenges faced when deploying AI like ChatGPT in roles demanding intricate human interaction. Deep learning, despite progress in areas like digital assistants and gaming, struggles with comprehending human language as deeply as humans do. This is because current algorithms mainly capture language's statistical patterns, missing real understanding or reasoning. This limitation restricts their use in critical areas and underscores the challenges in using tools like ChatGPT for complex human engagement tasks [22]. Artificial intelligence language learning systems fall short in certain aspects where human tutors excel, particularly in identifying and correcting mistakes. Unlike human instructors, AI may not pinpoint errors with the same precision, potentially leading students to develop unfavourable habits or persist in making the same errors. Moreover, the deployment of AI in educational environments, including for language learning, brings to the forefront ethical issues that must be meticulously considered [23]. Concerns surrounding privacy, bias, and the implications of automated decision-making on the educational journey of learners are paramount, highlighting the need for careful integration of AI technologies to safeguard and enhance the learning experience, while AI offers transformative potential for enhancing language learning through innovative tools and methodologies, its limitations in fostering genuine human connections, accurately identifying and correcting language errors, and addressing ethical concerns necessitate a balanced approach to integration, ensuring that the technology complements rather than replaces the irreplaceable value of human interaction and oversight in education.

8. Conclusion

The study of technology-assisted oral English learning among Chinese university students, specifically through the use of ChatGPT, represents a groundbreaking shift in language education. This study has highlighted the pivotal role of ChatGPT and AI-powered chatbots in improving English speaking skills by providing personalised, interactive and effective practice opportunities. The integration of advanced NLP and LLM technologies into language learning not only addresses the traditional challenges learners face when practising speaking skills, but also paves the way for innovative pedagogical approaches. However, to realise the full potential of ChatGPT, its limitations must be addressed, and it must be carefully integrated into comprehensive learning strategies that also focus on speaking and listening skills. The future of English language learning with ChatGPT seems promising, with the potential to revolutionise traditional methods and democratise language learning by making it accessible to a wider audience. However, the journey towards integrating AI into language learning must overcome the challenges of ensuring a genuine human connection and

addressing ethical considerations to ensure that AI complements rather than replaces the invaluable human elements of education.

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