

The Impact and Innovation of Chatgpt on Traditional Teaching-Taking TESOL As an Example

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Abstract. With the increasing development of artificial intelligence and its application in education, traditional English educators need to understand how to use chat to support English teaching and learning. Therefore, a review and discussion of existing relevant research to support the academic community and practitioners in understanding how chatGPT supports tesol educators and students has become a topic for discussion. However, traditional research often only systematically studies the impact of artificial intelligence on tesol, without specifically subdividing it into chapters, or studying the relationship between chapters and education without specifically focusing on tesol. Based on this, based on the teaching characteristics of TESOL, this paper proposes that chatGPT needs to achieve innovation in the field of TESOL to meet the needs of multi-faceted professional development. In addition, in the face of the rapid development of chatGPT, traditional teachers should improve their information skills, and at the same time combine artificial intelligence technology to innovate teaching methods and improve teaching guidance.

Keywords: ChatGPT; Teaching TESOL; Artificial Intelligence.

1. Introduction

In 1956, the United States New Hampshire State Hanover Dat Portsmouth College Scholars such as John McCarthy first proposed the term "artificial intelligence" and defined it as a science that enables computers to exhibit human intelligence. The ELIZA program, created by Joseph Weizbin in 1966, simulates human conversations and is considered an early chatbot. In 2020, with the launch of NVIDIA A100, the computing power of graphics cards was further improved, and artificial intelligence continued to develop rapidly in various fields of human life. On November 30, 2022, the American OpenAI studio launched a new chatbot program and named it ChatGPT. There is no doubt that generative artificial intelligence similar to ChatGPT has a promising future, but the continuous development of artificial intelligence also brings significant challenges to the education industry. In recent years, with the increasing number of international students from all over the world, the TESOL teaching theory for non-native English learners has become a focus and hot topic of attention. This study takes artificial intelligence technology as the background and uses ChatGPT as an example to answer the impact of generative artificial intelligence on TESOL teaching.

2. The Interaction Between ChatGPT and TESOL

2.1. Characteristics of TESOL Teaching

TESOL (Teaching English to Speakers of Other Languages) is an English teaching major dedicated to teaching non-native English-speaking students. TESOL teaching first emphasizes the practical use of language and the cultivation of communicative competence. Secondly, TESOL teaching adopts corresponding teaching methods for learners of different ages and levels, including children, teenagers, adults, etc. Thirdly, as a discipline that teaches non-native English-speaking students how to learn English, TESOL inevitably has cross-ethnic and cross-cultural characteristics. In practical teaching, educators inevitably involve students from different countries, so it is necessary to understand the different cultural backgrounds of students from different countries.

As a language teaching profession, TESOL also attaches importance to the impact of output and input on students. In language learning, listening and reading are the main forms of language input; while speaking and writing are the main forms of language output. In communication skills, language listening and speaking skills are very important, and students' listening and speaking skills are an important aspect of teaching that TESOL workers' pay special attention to.

2.2. Application of ChatGPT Personalized Teaching in TESOL

For a long time, the problem of personalized teaching in TESOL classrooms has been difficult to solve. This is mainly due to the professional nature, which leads to a large number of students of different nationalities and ages. Therefore, teachers find it difficult to accurately grasp the personal characteristics of each student and provide them with content, activities, methods, evaluations, and learning methods that meet their individual needs. With the rapid development of artificial intelligence, TESOL personalized customization teaching has the opportunity to achieve [1].

TESOL educators face learners of different ages and ethnicities in the teaching process. Faced with such differences, personalized teaching methods become very important. Students can be divided into three stages according to age: young learners, teenagers, and adults. When young children learn a foreign language at a very young age, their pronunciation mainly comes from older learners, and their language cognition is mainly related to what they see and hear. The language knowledge they acquire comes from various information channels. When teaching young children, they should be guided mainly by their interests. Young children are in the early stages of language learning and need the attention and praise of teachers, which plays an important role in enhancing their self-identity and learning confidence. In the teaching process, teachers can use various classroom teaching aids such as ChatGPT to facilitate teaching, and students can learn about their interests in English through independent questioning of ChatGPT. Teenagers can make rapid progress in foreign language learning, which is reflected in their language ability and learning speed [2]. Teenagers have strong self-esteem and psychological fatigue due to years of English learning [2]. Teenagers have strong self-awareness, and high enthusiasm for learning but lack sustained motivation, and strong language communication skills, and are keen on role-playing and other classroom activities [2]. In the English teaching process, it is important to focus on cultivating students' subjective initiative. Unlike the freshness of young children when they first encounter a foreign language, after years of English learning, their psychological fatigue gradually forms. Teachers can use new language teaching aids such as ChatGPT to enhance students' learning freshness. Compared with adolescents, adult learners are good at using abstract thinking in English learning, have strong comprehension abilities and high achievement motivation, and significantly improve their self-discipline. They have self-expectations in the learning process and develop their unique learning methods. However, as they grow older, their memory, intelligence, and other physiological conditions begin to decline. In the process of teaching second foreign languages to adult English learners, it is important to focus on learning methods and strategies, help them improve their learning plans, implement assessment capabilities, and fully understand the role of the Internet in adult English learning. Most adults have an understanding of their language learning level, and in the process of teaching these learners, they can make full use of the resources available to adults and guide students to independently use language tutoring software such as ChatGPT to assist their language learning.

Secondly, in the process of TESOL education, cross-cultural and cross-national teaching is essential. English is a globally recognized language. By learning English, students can communicate and interact with people from different cultural backgrounds, promoting cross-cultural communication and understanding [3]. Cross-cultural English teaching is not only about teaching language knowledge but more importantly about cultivating students' understanding and respect for different cultural backgrounds [3]. Students learn English to understand the values, beliefs, customs, etc. of other cultures, cultivate cross-cultural awareness, and improve cultural inclusiveness [4].

For example, role-playing and dialogue exploration: some education graduate students use ChatGPT as a substitute for specific roles, such as debate partners, to help them understand textbooks

and explore information from new perspectives. Some university teachers use ChatGPT as an assistant to help them create tests, exams, and lesson plans, and provide new ideas and examples. ChatGPT can also help teachers ensure that teaching materials are inclusive and suitable for students' learning levels. Some college students use ChatGPT for English translation and writing exercises to improve their English proficiency and overcome grammatical misunderstandings. Some teachers encourage students to maintain critical thinking when using ChatGPT, recognizing that the answers provided by ChatGPT may not always be accurate, and encourage them to verify information through other resources to cultivate their problem-solving and creativity.

3. Problems

3.1. The Challenge of Artificial Intelligence to TESOL

From a developmental and critical perspective, the rapid development of new AI technologies such as ChatGPT has also brought a series of problems to TESOL educators. Firstly, with the popularization of AI teaching, teachers may face the challenge of using automated teaching tools. ChatGPT has strong language comprehension and generation capabilities, so educators need to constantly update their skills and knowledge to keep pace with the times. Otherwise, TESOL-related workers and even the entire traditional education industry will face severe challenges.

In addition, the teaching form of the traditional education industry is relatively single. As an emerging information technology discipline, artificial intelligence has complex and cumbersome content. Teaching and learning in artificial intelligence education can take various forms, such as formal learning and informal learning based on the institutionalization of artificial intelligence education activities and organizational behavior levels. According to the operational location and spatial standards of artificial intelligence education systems, school education, family education, and social education can be carried out [5]. Therefore, how to improve teaching forms and guide students to enhance their learning awareness is an important issue related to learning effectiveness.

3.2. The Risk of Traditional Teachers Being Replaced by AI

When competing with AI, teachers should maximize their advantages. Since the Industrial Revolution, technological progress has led to the development of labor (or employment) patterns towards "manual (manual) labor-semi-mechanization-mechanization-automation-intelligence". In terms of function, it is reflected as the extension or partial replacement of human physical strength with human intelligence [6]. So, will teachers be banned by AI? Foreign scholars have determined the possibility of different types of teachers being replaced based on research on Gaussian process classifiers. They believe that the probability of teachers at different educational stages being computerized is only 3.2% [6]. The probability of self-improvement teachers being computerized is 13%, the probability of kindergarten teachers (excluding special education) being computerized is 15%, the probability of secondary vocational and technical teachers being computerized is 26%, and the probability of teaching assistants being computerized is 56% [6]. According to data from researchers at the University of Cambridge, the BBC analyzed that the probability of teachers being replaced by robots is only 0.4%. Based on the research of these scholars, it can be seen that the probability of teachers being completely replaced by AI is very small, but some teaching tasks may be replaced by automated tools, such as AI can be used for the automatic scoring of papers and assignments. Automatic review systems based on image recognition, optical character recognition, latent semantic analysis, and natural language processing can not only evaluate the surface characteristics of language but also evaluate the quality of its content and discourse structure [6]. The application of AI technology in scoring and grading processes also improves the efficiency, accuracy, and objectivity of grading [6]. Therefore, although it may not be completely replaced, there is a high probability that some of the teachers' responsibilities will be covered, which undoubtedly poses challenges to their development. In addition, some traditional teachers hold a conservative attitude

towards emerging generative AI such as ChatGPT, and this traditional thinking undoubtedly needs to be updated.

3.3. AI and User Data Privacy

Tay, a social robot launched by Microsoft in 2016, gradually learned to become a racist in one day due to negative guidance from users, forcing Microsoft to take the robot offline urgently. In security-sensitive areas such as malware detection, and video security, higher requirements need to be put forward for the security and stability of AI systems [7,8]. In addition to security issues, privacy issues are also a concern for AI service providers and users. Since machine model training relies on a large amount of training data and computing resources, model privacy and intellectual property protection have become one of the most concerning issues for service providers. For users, they are more concerned about whether their personal information will be used as training data. If it is leaked, how to ensure that sensitive personal information is not stolen by third parties [6]? As a new type of AI, ChatGPT is not yet mature in protecting user privacy, so ensuring the privacy and security of student data is also a problem it must consider.

4. Suggestions

4.1. Top Design

The education sector can introduce policies for local implementation of AI education, do a good job in the top-level design of AI education implementation, and create a policy environment. It is necessary to focus on strengthening the construction of AI education courses, integrating expert resources from universities, research institutes, enterprises, and primary and secondary schools, and jointly developing AI courses based on the needs of education development and students' cognitive needs. Strengthen the research on teaching modes of AI courses, introduce several effective teaching modes, and vigorously promote them. Build an AI education ecosystem, create different learning contents, learning spaces, learning environments, and learning carriers from different perspectives and dimensions such as "school-society-family" and "cognition-experience-practice". Strengthen the incentive evaluation of AI education and stimulate the vitality of AI research and teaching through incentives such as policies, professional titles, and rewards. Provide basic guarantees such as funding, teachers, facilities, and equipment for AI education [5].

4.2. Teachers' Cross-Cultural Integration Awareness

In terms of ChatGPT, it shows uneven and unstable language skills when facing users with different languages and cultures. Therefore, teachers' cross-cultural awareness is very important. On the one hand, teachers can use emerging media such as ChatGPT to help students understand customs, culture, and local characteristics, and cultivate their interest in language learning. Interest is the best teacher. With the development of emerging technology networks, information barriers between the world have been opened. Students can learn about cultural diversity around the world, and thus recognize that each culture has its unique characteristics and values [3]. On the other hand, teachers can organize cross-cultural communication and experience activities to allow students to experience the charm of different cultures firsthand. This can include exchanging ideas with students from other countries or regions, visiting cultural exhibitions, and tasting exotic foods. Through these activities, students can experience the differences and characteristics of different cultures firsthand and enhance their understanding and respect for other cultures. In addition, teachers can encourage students to participate in cross-cultural projects and research, such as organizing cultural observations or surveys, to allow students to gain a deeper understanding of the details and potential meanings of specific cultures. Students can interact with the target culture by communicating with residents and participating in local activities, further deepening their understanding and respect for the culture. In this process, teachers should provide guidance and direction to help students understand and explain the differences between different cultures, while encouraging them to maintain an open mind and

respect the diversity of other cultures [3]. Teachers can also guide students to think about the connections and mutual influences between cultures, cultivating their cross-cultural thinking skills. Through the cultivation of cultural awareness, students will be able to be more sensitive to the existence and importance of different cultures, while learning to respect and tolerate other cultures. This will help students to more flexibly and effectively deal with various challenges in future cross-cultural communication, establish harmonious interpersonal relationships, and promote mutual understanding and cooperation between cultures.

4.3. Teachers' Attention to Data Security Issues

Facing the challenges of artificial intelligence, teachers need to improve their teaching ability, and it is very important to accurately position teaching goals. Accurately positioning teaching goals requires a clear understanding of students' existing knowledge accumulation and ability status and predicting their knowledge mastery and ability development level within a specified time frame. TESOL workers should combine the teaching characteristics of TESOL and use ChatGPT to improve their teaching level. For example, they can use ChatGPT to search for various teaching materials needed in daily life, helping them better prepare for the course and enhance their professional competitiveness. In addition, although teachers can currently obtain a large amount of relevant information through their own teaching experience and various channels, the accuracy and clarity are not very high [1]. For TESOL educators, it is necessary to regularly review and check the security level of the classroom and ChatGPT updates, and if necessary, cooperate with data security technology outsourcing companies to ensure that student data privacy and security are the basic professional ethics of teachers.

5. Conclusion

The rapid development of artificial intelligence will undoubtedly bring challenges to the education industry. Traditional teachers need to change their traditional thinking, adopt an optimistic and inclusive attitude towards emerging technologies such as artificial intelligence, and actively combine old teaching concepts with emerging artificial intelligence. With the continuous development of artificial intelligence technologies such as ChatGPT, many education industries such as TESOL have also been impacted to varying degrees. This article first summarizes the interactive relationship between ChatGPT and TESOL. Based on the characteristics of TESOL, it proposes teaching features that are combined with ChatGPT and focuses on the application of ChatGPT in TESOL teaching. In response to the challenges posed by artificial intelligence to traditional education, this article proposes suggestions for top-level design, cross-cultural integration, and teacher self-development. If educators can use ChatGPT as a teaching tool to control students and use ChatGPT reasonably, they can use ChatGPT for lesson preparation before class and use ChatGPT in the classroom to assist themselves in teaching and allow students to use ChatGPT to help complete homework assignments. If used properly, all of these will make TESOL workers more powerful in teaching.

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