The Negative Impact of Artificial Intelligence Technology on College English Teaching and the Countermeasures

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Abstract: Under the developing trend of artificial intelligence (AI) technology gradually penetrating all aspects of society, the traditional language education industry is also greatly affected [1]. AI technology has had a positive impact on college English teaching, but it also presents challenges and negative impacts. On the positive side, AI technology can provide personalized learning experiences, real-time feedback, and autonomous learning opportunities, and so on. However, it may also lead to a lack of communication between students and humans, resulting in a decline in students' interpersonal skills, and cause students' dependence on online learning resources as well as possible risks to student data privacy and security, and other negative impacts. To address these challenges, teachers can adopt the following countermeasures: improving teachers' skills in the use of AI technology incorporated in the classroom, offering personalized instruction to reduce students' dependence on AI technologies, emphasizing the cultivation of students' humanistic literacy and interpersonal communication ability. Additionally, colleges and technology providers should strengthen data security and privacy protection to ensure the safety and confidentiality of student data. By implementing comprehensive measures, we can maximize the advantages of AI technology in college English teaching while overcoming potential issues and challenges.

Keywords: Artificial Intelligence Technology; College English Teaching; Impact; Countermeasures

1. Introduction

The rapid development of artificial intelligence (AI) is profoundly changing human society and the world. In the "Notification of the State Council on Issuing the Development Plan for the New Generation of Artificial Intelligence" and the 2017 National Higher Education Science and Technology Work Conference, the government emphasized the need to guide universities to aim at the forefront of world science and technology, strengthen basic research, achieve significant breakthroughs in forward-looking basic research and leading original achievements, and further enhance the ability of universities in AI field in terms of technological innovation, talent cultivation, and serving national needs [2].

In recent years, with the rapid development of AI technology, it has had a profound impact on many fields, including education. In college English teaching, AI technology is gradually being applied and has shown its enormous potential. Traditional college English teaching faces various challenges, such as limited teaching resources, low student learning interest, and difficulties in personalized learning. AI technology, through applications such as providing personalized learning experiences, intelligent teaching assistance, and online learning resources, brings new possibilities to college English teaching.

However, the application of AI technology can also have a negative impact on traditional college English teaching. For example, students may be more inclined to use online learning resources and self-learning tools, neglecting traditional face-to-face teaching. Additionally, the development of machine translation technology may reduce students' language expression and grammar mastery. Therefore, it is necessary to conduct in-depth research on the negative impact of AI technology on college English teaching to understand its specific influence and develop corresponding strategies.

By studying the negative impact of AI technology on college English teaching and the countermeasures, the negative impact can be revealed, helping educators and decision-makers to become aware of potential issues and challenges. This aids in early preparation

and adjustments for teaching strategies. And guidance can be provided for teachers and colleges to better address the challenges brought by new technologies, while fully leveraging the advantages of AI technology to improve the effectiveness and quality of college English teaching. Additionally, research findings can provide valuable references for education policymakers, aiding them in formulating relevant policies and plans. This helps promote the application and development of AI technology in college English teaching, driving educational system reforms and innovation.

In conclusion, this study holds great importance, with far-reaching effects on improving teaching practices, enhancing educational quality, and driving educational innovation.

2. Application of Artificial Intelligence Technology in College English Teaching

2.1 Application of Speech Recognition Technology

Speech recognition technology is a technology that uses AI technology to convert speech signals into text or commands. It utilizes techniques such as speech signal processing, machine learning, and natural language processing to transform human speech input into understandable and processable text form. Common examples of speech recognition technology include Google Speech Recognition, Microsoft Azure Speech Services, iFlytek, Baidu Speech Recognition, and so on. These speech recognition technologies have good recognition accuracy, stability, and adaptability. They have various applications in college English teaching, such as pronunciation practice and correction, self-learning assistance, interactive language learning, interpretation training, speech transcription and assessment.

Overall, speech recognition technology can provide more personalized, real-time feedback and interactive communication opportunities in college English teaching, help students improve their listening and speaking skills, and enhance their autonomy and participation in learning. Of course, when applying speech recognition technology, attention needs to be paid to protecting students' privacy and data security.

2.2 Application of Automatic Error Correction Technology

Automatic error correction technology refers to the automatic detection and correction of spelling errors, grammatical errors and semantic errors in text through computer programs. There are some common automatic error correction technologies such as Microsoft Word automatic spell checking and error correction, Google Docs spell checking and error correction, LanguageTool multi-language error corrector, Ginger grammar and spelling error correction and so on. Automatic error correction technology is widely used in college English teaching. The common application scenarios of these technologies are writing assessment and correction, grammar practice, speaking correction, teacher correction assistance, and so on.

The application of automatic correction technology in English teaching can effectively provide instant feedback and guidance to help students improve their language skills. However, it is important to note that automatic correction technology may have certain misjudgments and limitations, and cannot completely replace human evaluation and guidance. Therefore, when using automatic correction technology, it is still necessary to combine teachers' guidance and review to ensure students can comprehensively improve their language abilities.

2.3 Application of Intelligent Tutoring Technology

Intelligent tutoring technology is an application based on AI and educational technology, aimed at providing personalized and targeted learning guidance and assistance to students through intelligent means. It utilizes computer and algorithm analysis of students' learning behavior and data, deeply understanding students' learning styles, ability levels, and progress, and providing them with personalized learning resources, feedback, and suggestions. Some typical representatives of intelligent tutoring technology platforms include Duolingo, IXL Learning, Smart Sparrow, and so on. The main application scenarios of these technologies in college English teaching are adaptive learning system, intelligent tutoring system, online learning platforms, and so forth.

The application of these intelligent tutoring technologies can provide more flexible and personalized learning methods, helping students better understand and master English knowledge, and improve their learning outcomes and motivation.

3.Negative Impact of Artificial Intelligence Technology on Traditional College English Teaching Mode

AI is quietly changing the education ecosystem, but people have not yet fully realized the education mismatches and ecological imbalances caused by technological infiltration [3]. Current AI technologies, while constantly evolving, still have some limitations. They may not be able to fully understand students' semantic intentions, and there are still challenges for complex problems and deep understanding. In addition, based on some relevant studies, although there are many benefits of AI technologies in college English teaching, they also cause some negative impacts and challenges.

3.1 Challenges to Face-to-face Teaching Mode

Although AI technology has many potential benefits in college English teaching, there are also some factors that may have adverse effects on face-to-face teaching modes.

Firstly, it may reduce interaction between teachers and students. The adoption of AI technology may lead to a decrease in face-to-face communication between teachers and students. In traditional face-to-face teaching, teachers can discover students' confusion and errors through direct interaction, providing real-time feedback and guidance. However, in the application of artificial intelligence technology, the interaction between teachers and students may be reduced, affecting the teacher's ability to understand students' learning needs and provide effective personalized guidance.

Secondly, it may pose challenges in building teacher-student relationships. In face-to-face teaching, teachers can establish personalized relationships with students to enhance their motivation and engagement. However, when artificial intelligence technology plays a dominant role in teaching, building such personalized relationships may face challenges as communication between students and teachers primarily occurs through technological platforms.

It is important to note that these viewpoints may vary depending on specific situations. When designing and applying artificial intelligence technology, it is necessary to carefully consider the ways in which the technology is used, ensuring sufficient face-to-face interaction and collaboration among students to achieve better teaching outcomes.

3.2 Students' Dependence on Online Learning Resources

The development of AI technology has made online resources play an important role in students' learning, which may also lead to the formation of students' dependence on online resources. The following are some of the factors that may lead to dependency.

Online resources can be accessed anytime and anywhere, and students can choose to study at their own time and place, rather than being limited to the time and place of a traditional classroom. This convenience and immediacy makes it easier for students to form dependencies because they are accustomed to accessing information and learning materials through online resources.

AI technology can provide personalized learning materials and instructional programs based on students' individual needs. This personalized experience makes students feel more customized and focused, and they may begin to tend to rely on these online resources for their learning needs.

Online resources offer a rich variety of learning resources, including instructional videos, practice questions, and learning communities. Students may become dependent on these resources and neglect other more traditional learning methods.

AI technology can provide instant feedback through automated assessment and feedback systems. This instant feedback gives students positive feedback on their learning, prompting a greater reliance on online resources and potentially leading them to expect less from traditional instructor feedback and tutoring.

While there are some risks associated with developing a reliance on online resources, this does not mean that AI technologies and online resources are inherently harmful. It is important to develop students' critical thinking, self-directed learning skills and information acquisition skills in order to make better use of online resources and to successfully apply what they learn in a variety of learning environments.

3.3 Negative Impact on Students' Language Ability

First of all, machine translation technology in AI technology can be used as a learning aid to provide students with accurate translation results to help them understand and learn the content of the target language. In addition, machine translation can also be

used as a learning resource to help students master language elements such as vocabulary and grammar. Machine translation technology can quickly and accurately translate from one language to another. This makes it easier and faster for students when they need to communicate across languages. However, it may also incline students to rely on machine translation, reducing the chances of actually using the target language in context. Some students may rely on machine translation as an alternative tool for learning a language. They may be inclined to use machine translators to complete assignments or understand linguistic material rather than trying to learn the language on their own. This may result in their failure to truly acquire language skills and improve their language proficiency. At the same time, machine translation may make students more dependent on their ability to express and create language. Students may tend to use the results of machine translation directly without thinking about different expressions and language use scenarios, thus limiting their own language expression and creativity.

In addition, although AI grammar and spelling correction tools have a certain degree of accuracy, they cannot completely replace professional corrections by teachers. This may lead students to deviate their attention and ignore their own English grammar and spelling errors, etc.

To summarize, AI technology might have a negative impact on students' language proficiency. Although it can provide convenience and assistance, students should realize that AI cannot replace real language learning and effort. Students should make efforts to develop their language skills, cultivate the ability of independent learning and independent thinking, and not overly rely on AI.

3.4 The Possibility of Leading to Students' Lack of Interpersonal Communication

Certain AI technologies such as virtual voice assistants and voice interaction systems, while they can be helpful in speaking training, do not provide a real interpersonal communication experience. This may lead to students' lack of confidence and adaptability when faced with real communication.

As the use of AI technology in learning increases, some students may become overly reliant on robotic interactions and less likely to interact with real humans. They may prefer to interact with AI rather than engage in actual conversations and discussions with classmates or teachers.

Some students may be nervous and uncomfortable with face-to-face interactions, and they may prefer to engage in conversations with machines that do not judge or criticize their expressions. AI technology provides a relatively safe environment, both academically and socially, which may lead to students becoming progressively uncomfortable or afraid of interacting with others.

Teachers need to focus on the development of students' interpersonal communication skills and integrate them with AI technology in order to create a learning environment most conducive to developing their interpersonal communication skills.

3.5 Possible Risks to Student Data Privacy and Security

There may be privacy and security risks associated with the use of AI technologies. For example, the use of AI technologies may involve the collection and storage of students' personal data, including learning records, speaking exercises, test scores, etc. If the data is not properly protected, this may lead to data leakage and disclosure of personal privacy.

Students' data may be used by third parties without authorization or for other commercial purposes. For example, students' study data may be sold to advertising companies, leading to misuse of personal information.

4. Suggestions for Countermeasures

AI technology has negative impacts on college English teaching, and to cope with them, we need to find a balance between education and technology, stimulate students' interest and motivation in learning, and cultivate their core language competence, as well as make full use of the advantages of AI technology to provide a personalized and interactive learning experience. These impacts and challenges remind us of the need for moderation in the use of AI technologies, combined with teacher guidance and supervision. Teachers' roles and expertise remain irreplaceable, and they should provide comprehensive subject knowledge and guidance in the learning process to ensure the overall development of students' English skills. The following are a few suggestions for countermeasures.

4.1 Improving Teachers' Skills in the Use of AI Technology Incorporated in the Classroom

Teachers need to constantly update their knowledge and skills, familiarize themselves with the latest developments and applications of AI technologies, and understand how to apply them to English language teaching. They can attend professional trainings and workshops to share their experiences with peers and learn new teaching methods and tools.

Besides, teachers can transform themselves into mentors and guides for students, providing precise personalized guidance and feedback to compensate for the lack of face-to-face interaction. Teachers can use data analytics capabilities of artificial intelligence to understand students' learning progress and offer targeted support to address their needs and difficulties.

Meanwhile, teachers can achieve a balance between technology and face-to-face interaction by leveraging appropriate technological tools and platforms. Online learning platforms and virtual interactive tools can be flexibly utilized to support students' learning while maintaining and strengthening opportunities for face-to-face interaction.

Despite the reduced face-to-face communication opportunities due to artificial intelligence, teachers can use other means to maintain and establish strong teacher-student relationships. Individual discussions, online communication tools, and personal attention to students' learning and individual needs can be employed.

4.2 Offering Personalized Instruction to Reduce Students' Dependence on AI Technologies

With the personalized learning capabilities provided by AI technology, teachers can provide differentiated teaching solutions based on students' needs and learning styles. At the same time, teachers should still pay attention to students' individual differences and provide more personalized instruction and support.

Teachers should guide students to think critically about AI technology, helping them understand the advantages and limitations. This way, they can make better decisions about when to use technology and when to rely on their own abilities. Besides, teachers can provide diverse teaching materials and resources, utilizing authentic materials such as English newspapers, movies, and music to expose students to real language and culture. This will help them understand the limitations of AI technology in handling complex language and cultural issues, further reducing dependence on it. By using a variety of teaching tools and organizing various activities, students can develop their language comprehension and expression skills and reduce their reliance on machine translation.

4.3 Providing More Language Practice Opportunities to Improve Students' Language Proficiency

To compensate for possible language skill deficits brought about by machine translation and online resources, schools can try to provide more opportunities for face-to-face communication and interaction so that students can use English in authentic situations. Teachers provide students with more practical opportunities, such as organizing language practice activities, group activities, communication training, role-playing, discussion and debates and writing workshops, etc. Group activities and role-playing encourage students to actively participate in order to improve their ability to practically apply English.

4.4 Emphasizing the Cultivation of Students' Humanistic Literacy and Interpersonal Communication Ability

Under the influence of AI technology, it has become particularly important to emphasize the cultivation of students' humanistic literacy and social skills. This includes developing students' critical thinking, problem solving, teamwork and leadership skills.

Educators need to focus on the development of students' humanistic literacy and social skills and integrate them with AI technologies to create a balanced learning environment that encourages students to actively participate in interpersonal interactions and develop their communicative skills. Teachers should encourage students to participate in classroom discussions, team projects and group activities to provide more opportunities to interact with others to improve their critical thinking, problem solving, teamwork and leadership skills. By creating an interactive environment, students are encouraged to express their views and share their experiences to increase their interpersonal communication skills. Teachers can also make use of a variety of learning tools and resources, such as

virtual meetings, online discussion boards and social media, to create diverse communication environments, encourage students to use different modes of communication, and gradually improve their communicative competence in different environments.

4.5 Protecting Students' Data Privacy

Colleges should formulate relevant policies and measures to ensure that students' personal data and privacy are protected and strengthen the selection and supervision of AI technology providers to ensure that they use students' data legally, safely and reliably.

Before collecting students' data, they should provide clear explanations, specify the purposes and processing methods, and obtain informed consent from students. Such measures, such as data anonymization and desensitization, should be taken to ensure that individual students cannot be identified. This will maximize student privacy and reduce the risk of data breaches and misuse.

At the same time, secure technical measures should also be taken to ensure that students data are kept safe during storage and transmission. This may involve the use of encryption technologies, secure authentication mechanisms and compliant storage and transmission protocols, among others.

Colleges should implement strict data access and privilege control measures to limit access to and processing of student data to authorized personnel only. Data access activities should also be monitored and logged to detect and respond to potential security threats.

The data privacy and security awareness of teachers and students can be enhanced through training. They should understand how to protect their personal data, how to use secure networks and devices, etc.

4.6 Making Real-time Assessment of Teaching Effectiveness

Teachers should constantly monitor and evaluate the teaching effect of using AI technology to understand students' progress and confusion, and adjust teaching strategies and methods according to the evaluation results.

Firstly, teachers can observe students' performance after using AI technology and judge their language ability and progress through the assessment of listening, speaking, reading, writing and translation. They can judge the effectiveness of students in English language learning in relation to their performance in oral expression, writing work and engagement.

Secondly, teachers can assess the effectiveness of students' learning based on their performance in areas such as test scores and study assignments. By comparing grades and performance before and after the use of AI technology, the impact of the technology on students' academic performance can be initially judged.

Thirdly, teachers can observe students' engagement and interactivity after using AI technology to see if they are more actively engaged in discussions and collaborative learning with others. The increase in student engagement and interactivity can indirectly reflect the effect of AI technology on learning outcomes.

Fourthly, both teachers and students can provide evaluations and suggestions on AI technology through questionnaires, discussion groups, or feedback sessions. Feedback from students and teachers is collected to understand their satisfaction with the use of the technology and their perceptions of the technology's impact on learning outcomes.

Combining these various assessment methods, the teaching effect of AI technology in university English teaching can be considered comprehensively, providing a scientific basis for assessment, helping teachers and students to better apply and adjust AI technology, and improving the quality and effect of English teaching.

5. Conclusion and Expectations

5.1 Conclusion

Artificial intelligence technology has brought many conveniences and benefits to college English teaching, but has some negative impacts as well. We can cope with these impacts through a series of countermeasures. First, teachers should actively engage in professional development to understand the latest developments in AI technology and learn how to properly apply it to English teaching. Second, personalized teaching is important. With the personalized learning capabilities provided by AI technology, teachers can provide differentiated teaching programs based on students' needs and learning styles. It is also important to focus on the individual differences of students to provide more personalized instruction and support. Teachers can use AI technology as a teaching aid and collaborate with it to provide a better learning experience. It is also key to emphasize humanistic education, and it is especially

important to cultivate students' humanistic and social skills to cope with possible language skill deficits brought about by AI technology. Teachers can create more opportunities for students to interact and collaborate through classroom discussions, group activities and projects. At the same time, colleges should provide practical opportunities, such as hands-on language activities, communication training, debates and writing workshops, to help students improve their ability to practically apply English. In addition, teachers should regularly assess and adjust the effectiveness of measures to adapt to changes in technology and student needs.

In summary, coping with the negative impact of AI technology on college English teaching requires a comprehensive use of various countermeasures. Teachers should focus on professional development, personalized teaching and humanistic education, while using AI technologies as teaching aids and providing practice opportunities to help students develop holistically and meet future challenges. Most importantly, teachers and colleges should always pay attention to students' data privacy and security, and comply with relevant laws and regulations and take appropriate technical and organizational measures to protect students' personal data. Through the rational application of these countermeasures, we can better cope with the challenges posed by AI technology and improve the quality and effectiveness of college English teaching.

5.2 Research Limitations and Expectations

Although powerful technological support has outlined a future vision for college English teaching, further thinking and exploration are still needed to make it a reality [4]. Given the limited research ability of the author and the possibility that the research methods may not be scientific, coupled with the lack of sufficient research data support, the conclusions provided in this study need further verification. Although this paper has already explored countermeasures to cope with the negative impact of AI technology on college English teaching, there are still some shortcomings and directions worthy of further research.

First, the role and function of teachers in the application of AI technology in English language teaching is an important research direction. How to balance the roles of AI technology and teachers, and to play the role of teachers' professional judgment and guidance requires more in-depth research. Second, with the widespread application of AI technology in education, the issue of data privacy and security has become particularly important. Future research can further explore how to ensure the privacy and security of student data and provide more reliable solutions. Third, the application of AI technologies in education needs to be characterized by sustainability in order to effectively address teaching and learning challenges in the long term. Future research could focus on how to achieve effective integration of AI technologies with teaching and learning goals, and how to develop AI literacy among teachers and students. Fourth, the application of AI technology in education involves the intersection of many disciplines such as education, linguistics, and computer science. Future research can strengthen the cooperation and communication between different fields and promote the development of interdisciplinary research.

In conclusion, future research can explore in depth the countermeasures to deal with the negative impact of AI technology on college English teaching from the aspects of teacher role positioning, data privacy and security, sustainable development and interdisciplinary research, and provide more instructive suggestions for educational practice. /

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