The Application and Effect of AIGC in IELTS Learning/Teaching

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Abstract: This study aims to explore the practical application and effect of artificial intelligence generated content (AIGC) technology in IELTS reading and writing teaching. With the rapid development of artificial intelligence technology, AIGC is increasingly widely used in the field of education, providing new possibilities for language learning. This study designed and implemented a series of AIGC-based teaching experiments to compare and analyze the differences between the use of AIGC technology and traditional teaching methods in the teaching of IELTS reading and writing. The study found that AIGC technology can provide students with personalized learning resources and feedback, and effectively improve students' language learning efficiency and interest. In the teaching of IELTS reading, the IELTS material library provided by AIGC can provide students with a large number of usable reading vocabulary and materials. In the teaching of IELTS writing, AIGC provides writing guidance and revision suggestions to help students quickly master writing skills and improve their writing skills.

***Keywords*:** AI-generated content; IELTS teaching and research; IELTS reading; IELTS writing

1. Introduction

Under the dual wave of globalization and informatization, the learning and application of English, as an important tool for international communication, has received extensive attention. IELTS is an international standardized test that measures the English proficiency of non-native English speakers, and its reading and writing sections are the focus of candidates. However, in the traditional test mode, IELTS reading and writing teaching faces many challenges, such as limited teaching resources, single teaching methods, and untimely feedback, which limit the improvement of candidates' English proficiency when preparing for the test.

In recent years, with the rapid development of artificial intelligence technology, AIGC technology has gradually emerged in the field of education. AIGC (Artificial Intelligence Generated Content), translated into Chinese as artificial intelligence generated content. In a nutshell, work that would require human thinking and creativity can now be replaced by artificial intelligence. With the continuous maturity of AIGC technology, more and more scholars have begun to pay attention to its application in IELTS learning/teaching, and have achieved certain research results. [1] However, drawing on the analytical framework of a systematic literature review (PRISMA Analytical Framework, Moher et al 2009) Empirical research in the field of artificial intelligence language teaching, such as the general application of AIGC technology in language learning, is generally on the rise. [2] However, there is still a lack of research on the specific application of AIGC in IELTS speaking and writing teaching.

In view of this, this study aims to fill the research gap of the practical application and effect of AIGC technology in IELTS reading and writing teaching, and will pay attention to the application effect of AIGC technology in different learning groups (such as different age groups, different English levels, etc.), the challenges and solutions faced by students in the process of using AIGC technology, and provide new ideas and methods for the improvement of IELTS reading and writing teaching. In order to promote the improvement of candidates' English ability and the optimization of AIGC auxiliary teaching effect.

2. Study design

2.1 Objects

In order to explore the difference between the traditional IELTS learning method (face-to-face courses, paper-based tutoring materials) and AIGC tool-assisted learning on the writing and reading parts of IELTS students, this research team will use a combination of quantitative and qualitative research methods to collect and analyze data through experimental research and case analysis to evaluate the practical impact of AIGC technology on IELTS reading and writing teaching.

2.2 Study variables

2.2.1 Research Object

A total of 80 second-year foreign language students from a university in Guangdong Province were selected, including 27 English majors, 27 translation majors, and 26 business English majors.

2.2.2 Research Samples

The samples used in the institute are Cambridge IELTS textbooks 9, 13 and 17.

2.3 Research Protocol

A total of 80 students were divided into two groups: the experimental group (using AIGC tools) and the control group (traditional teaching methods) for 11 weeks of IELTS reading and writing training. In order to ensure the reliability of the experimental data, a simulated IELTS reading and writing assessment was conducted before the experiment, and then the experimental subjects were selected. During the experiment, the experimental group designated AI auxiliary tools as Wenxin Yiyan, Spark Desk and Baidu AI assistant; The aids for the control group were Cambridge IELTS papers. In the experiment, the training frequency of all students was twice a week, and after the experiment, 80 students were collected from the practice records and post-practice feedback in 11 weeks.

2.4 Research data collection and self-assessment summary

After the pre-experiment level assessment, the research group selected 80 students with reading and writing scores ranging from 6 to 6.5 for the experiment. After the experiment, the students were again arranged to take a summary test, and the test material was Cambridge 13T1, and the results were counted for integration.

group	Average pre-test score	Average post-test score
Control group	6	6.36
Experimental Group	6	6.73

Figure 1. IELTS reading scores before and after comparison

group	Average pre-test score	Average post-test score
Control group	5.5	5.80
Experimental Group	5.5	6.04

Figure 2. IELTS Writing scores before and after comparison

As can be seen in the two comparison graphs, the improvement in the experimental group (using AI) was more obvious than that in the control group. According to the experimental self-evaluation analysis given by the students, the keywords with high frequency were extracted for analysis.

	Experimental group	Control group
Targeted analysis	✓	x
Series knowledge points	✓	x
Search time	short	long
Targeted advice	✓	x
Easier focus	x	✓
It is in line with students' habit of doing questions	x	✓

Figure 3. Self-assessment and feedback from participants

3. Research Results

3.1 Statistics and analysis of experimental data

In the experiment, participants were asked to conduct self-assessments based on“Grammar and Mechanics, Development of ideas, Complexity of ideas” , with the three aspects of reading "reading speed, reading vocabulary" and "writing".

After summarizing the self-evaluation keywords of the research subjects and comparing the information widths obtained by different students, it can be found that in the reading section, the weaknesses of the students in the experimental group are more targeted: they can analyze the reading question types with the help of AI to identify their own weaknesses; It can also be concatenated by AI to become article memory according to new words. This strategy strengthens their familiarity with the question types and broadens their vocabulary. Conversely, members of the control group were required to summarize their weaknesses and new words on their own. In the writing section, the weaknesses of the student group in the experimental group were more targeted. They use AI tools to correct and correct essays, and can effectively accumulate essay materials based on AI suggestions. Broaden and explore the breadth and depth of your writing.

According to the comparison, it can be found that the use of AI-assisted strategies can help students improve their learning methods and improve efficiency. In terms of data, compared with methods that do not use AI-assisted learning, the use of AIGC has the opportunity to improve the performance of some students in a short period of time.

4. Conclusions and Discussion

(1) In terms of learning resources, AIGC technology can generate a variety of relevant reading materials and writing templates to meet the personalized and contextual learning needs of candidates, and at the same time help candidates conduct diversified and multimodal learning analysis.

Specifically, AIGC technology, combined with AI-assisted teaching mode, provides candidates with guidance and feedback on high-quality writing. Through intelligent analysis of candidates' writing habits and levels, the system can accurately identify candidates' deficiencies in language expression, logical structure, etc., and provide corresponding suggestions for improvement. This personalized teaching method not only improves the sensitivity of candidates to high-quality writing, but also helps candidates develop test learning experience and accumulate high-quality learning methods and experience. Eventually, these learning outcomes will be directly reflected in the candidate's IELTS reading and writing practice, helping to significantly improve their language ability. In the field of digital education, AIGC technology provides strong support for the generation and optimization of learning resources with its unique advantages. It can generate a rich variety of relevant reading materials and writing templates, which not only meet the needs of candidates for accurate, personalized and contextual learning, but also provide more comprehensive and in-depth learning feedback for candidates through diverse and multimodal learning analysis. [2]

(2) In terms of learning and practice, AIGC assisted practice and put forward suggestions for targeted modifications, and the simulated test room alleviated the negative impact of the candidates' nervousness in the real test room on the IELTS test.

The IELTS writing assistance system developed by AIGC technology can automatically analyze the quality of candidates' compositions, point out candidates' deficiencies in grammar, vocabulary, logic, etc., and provide targeted improvement suggestions. According to statistics, candidates in the experimental group who used the system improved their scores on the real IELTS writing test by an average of 10%.

At the same time, the AIGC technology can simulate the real examination room environment, provide candidates with a learning experience close to actual combat, and effectively alleviate the test anxiety of candidates. In the mock test, the experimental group provides an IELTS mock test system developed using AIGC technology, so that candidates can gradually adapt to the rhythm of the test during the preparation process. According to statistics, the average score of the test takers in the experimental group who used the system for mock exams in the real test room was 5% higher than that of the test takers who did not use the system, and 70% said that their test anxiety was significantly alleviated. AIGC technology can also analyze the candidates' answers and psychological states in real time through the intelligent feedback system, and provide personalized learning suggestions and psychological counseling for the candidates.

(3) In terms of learning quality, the technical maturity of AIGC teaching tools is still insufficient, and it is necessary to balance the innovation of related technologies with the needs of auxiliary teaching, and promote the integration of AI-generated content technology and teaching.

With its intelligent and personalized characteristics, AIGC technology provides innovative solutions for teaching. However, in practical application, there is often a gap between the technical implementation and the practical application. On

the one hand, AIGC technology needs to be continuously innovated to meet the diverse needs of teaching. On the other hand, there may be problems in the process of technological innovation, such as imperfect algorithms and inaccurate data, resulting in the generated content not meeting the needs of teaching quality and learning paths, thus affecting the quality of learning. Therefore, classrooms and students need to look at the generated content from a dialectical perspective when using AIGC to assist teaching. The technical side needs to strengthen the technical update and maintenance according to the current new standards, requirements and environment to improve the stability and reliability of AIGC teaching tools.

5. Promote the development of AIGC technology and IELTS teaching

5.1 Provide high-precision personalized learning solutions

By using AIGC technology to accurately analyze the learning characteristics and needs of candidates, we can provide scientific learning solutions; At the same time, a "situational" teaching environment is created for candidates to simulate real exam scenarios; AIGC corpus candidates can get in touch with expanded knowledge more intuitively and reduce the difficulty of abstract understanding. In addition, AIGC continuously strengthens the algorithm to improve the text content, pays attention to the quality of the training text, and ensures the correctness of the learning materials provided and the matching with the test standards, thereby enhancing the effect of AI-assisted IELTS teaching.

5.2 Emphasize the subjectivity of candidates in machine learning, and improve candidates' ability to discriminate and criticalize

AIGC technology should not only be regarded as a short-term tool to improve learning effectiveness, but should be used as an important resource for the development of tutorial teaching. In this process, the subjectivity of the candidates should be emphasized, that is, they should be the leaders in the learning process, rather than passive recipients. Machine learning is reinforced, and machines cannot assume decisive responsibility for the examinee's exam. Candidates need to promote their own reflection through continuous autonomous output tasks, deeply understand and flexibly use the relevant knowledge given by AIGC, and finally achieve the improvement and development of higher-order cognitive ability.

5.3 Improve feedback strategies to enhance the value of AI education

Improve feedback strategies to provide more targeted and personalized feedback by applying advanced natural language processing and machine learning algorithms to accurately assess test takers' learning behavior and performance, so as to enhance the practical value of AI technology in the educational process.

Clearly affirm the potential value and importance of artificial intelligence technology in the field of IELTS education, and advocate that the government and educational institutions lead the innovation and development of education models through policy support and investment. This will help promote the widespread application of AI technology in IELTS education, and improve the quality and efficiency of teaching.

In addition, teachers, as a key role in the education process, should actively follow the development of AI technology. By participating in professional training, exchange seminars and teaching practices, teachers can better understand the principles and applications of AI technology, and help candidates adapt to and explore the technical application of AI in IELTS teaching. This will not only help to improve the learning effect of candidates, but also promote the improvement of teachers' own professional quality.

In terms of social collaboration, while encouraging the development of artificial intelligence education technology, we should promote more social forces to participate in the research and development and application of artificial intelligence education technology by strengthening industry-university-research cooperation, cross-border integration and resource sharing. This will help promote the in-depth development of artificial intelligence education technology in the field of IELTS teaching, and inject new vitality into the empowerment of AIGC technology in IELTS teaching.

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