

The Effects of the AIGC Software on English Majors: Professional Competence, Individual Perceptions, and Career Planning

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Abstract. In recent years, the application of AIGC-type software in the teaching of English majors has become more and more widespread and attracted much attention. This study aims to investigate the application value and use satisfaction of AIGC-type software in teaching English majors, as well as the effects on students' individual ability and cognition. The study adopts a natural experimental method to collect data through questionnaires and interviews with ten English majors as research subjects. The study shows that AIGC-type software can effectively improve students' translation ability and self-confidence, but there are differences in the demand and acceptance of AIGC among students of different academic and ability levels; students' willingness to use AIGC is generally on the rise and their satisfaction is high, but there are still some questions and concerns; AIGC-type software can help students clarify their career planning, but their future roles may not be a replacement for human translators, but an aid for translators.

Keywords: AIGC, English major teaching, translation ability, personal perception, career planning.

1. Introduction

Research on the Effectiveness of AIGC-Type Software Usage has become a recent hotspot in computer science and linguistics. Current research mainly focuses on AIGC itself, proposing relevant policy suggestions to fully leverage the development dividends brought by AIGC, prevent its potential impacts and risks [1], or analyze its application scenarios. Based on the analysis of potential issues of AIGC in intelligent services, strategies are devised to create smart service application scenarios for different user needs, aiming to meet the diverse service demands of users [2]. Moreover, studies also discuss the opportunities and challenges brought by language models to various industries.

In the field of translation, some researchers explore the transformations, challenges, and corresponding strategies brought by AIGC to translation teaching [3]. Others investigate whether ChatGPT can handle certain types of text translation more accurately compared to other translation software. Among them, some researchers compare and study the translation quality of medical texts [4], while others study the translation quality of ceramic texts using AIGC as an example [5].

In terms of translation practice, some researchers experimentally study the performance of post-editing of AIGC-type software translations. However, current research overlooks the fact that there are differences between users' actual needs and personal evaluation criteria. From the perspective of student users, the factors influencing their perception of AIGC-type software are extremely complex, including user needs, content relevance, translation quality, page design, and so on. This paper will adopt a natural experimental approach to explore the impact of English major students' use of AIGC-type software on their professional competence, individual cognition, and career planning, contributing to the discussion on the influence of AIGC-type software on other aspects of English major teaching.

2. Literature Review

The rise of AIGC-type software has attracted widespread attention from various sectors, bringing new opportunities to contemporary translation while also deepening the sense of crisis in society. Many researchers have explored the challenges and responses brought about by AIGC-type software.

In terms of translation teaching, some researchers have pointed out that applying artificial intelligence technology to foreign language teaching is an inevitable trend in the process of educational informatization [6].

Xuechen Xu et al. summarized the development of AIGC in recent years, compared the development status of AIGC at home and abroad, analyzed the shortcomings and prospects of AIGC-type software, and proposed corresponding policy suggestions on how to cope with the increasingly intelligent development of AIGC-type software, including collaborative innovation of industry, academia, research, and application, promoting regulatory governance, encouraging industry self-regulation, and strengthening the integration of data and reality. This study focuses on the development and future prospects of the AIGC industry, but lacks specific user perspectives on usage experience. Therefore, it is necessary to combine user satisfaction with the industry analysis of AIGC itself, considering the needs of users and industries to better promote its improvement and development.

In the era of rapid development of artificial intelligence, opportunities for transformation in English major teaching have emerged, with the application of artificial intelligence software in teaching becoming a major research hotspot. Most researchers believe that artificial intelligence technology has a positive significance for improving the quality of translation courses and students' actual translation abilities in higher education institutions, and translation software has significant advantages in English major teaching [7-8]. However, some researchers have pointed out that there are still some problems in the cognition and application of artificial intelligence technology by teachers and students, which need to be addressed by universities. By improving the application ability of teachers and students in artificial intelligence technology, integrating translation software into curriculum teaching, and combining innovative teaching methods and improving evaluation systems, the quality of English major teaching can be better promoted, and students' comprehensive language abilities can be cultivated.

For example, Liying Dai (2022) [9] emphasized the importance of improving the application ability of teachers and students in artificial intelligence technology and fully integrating it into English translation course teaching, while also revealing the problems existing in teaching, such as insufficient cognition of artificial intelligence technology and immature application, which may hinder the improvement of teaching effectiveness. She pointed out that the key to solving these problems lies in innovatively combining models and improving the curriculum evaluation system, so as to comprehensively improve the teaching quality of English translation courses in higher education institutions and enhance students' English translation abilities.

At the same time, most researchers believe that AI provides a broader perspective for English teaching and can be applied in many aspects of English teaching. Peiyu Kou (2023) [10] pointed out that the advantages of artificial intelligence in teaching include improving oral expression ability, enhancing translation ability, improving writing ability, and personalized teaching. Artificial intelligence can promote students' oral expression through intelligent speech recognition technology, improve students' translation and writing abilities in a short period through intelligent translation technology and intelligent writing assistants, and personalized teaching can better meet students' learning needs and improve learning effectiveness. In addition, the application of artificial intelligence can also save teacher resources, allowing students to receive timely learning assistance anytime and anywhere.

Machine translation also plays an important role in English major teaching, improving the convenience and efficiency of translation. Therefore, research on the translation function of AIGC is also one of the hotspots. At present, researchers generally recognize the application of AI translation function as a highly concerned application in the field of artificial intelligence, with extensive application prospects in language communication, cross-cultural communication, and business cooperation. The translation function of AIGC has both convenience and efficiency, but there are also some problems that need to be continuously improved in technology and adapted to different

scenarios to improve accuracy and reliability. For translators, it is necessary to actively adapt to this change, combine their own translation abilities, and continuously improve the translation quality.

Zhenzhao Nie (2023) [11] pointed out that the advantages of AI translation function lie in its ability to translate multiple languages quickly and accurately, with high flexibility and adaptability, and it is efficient, convenient, and easy to use. However, some shortcomings were also mentioned, such as inaccurate translation of professional terms, slang, etc., and difficulties in handling complex sentences. The researcher called for improvements in algorithms and models and the addition of multilingual and domain data resources to improve the accuracy and reliability of AI translation functions.

Additionally, many researchers also pay special attention to ChatGPT, a special generative artificial intelligence technology. For example, Wenyu Zhang (2023) [12] pointed out that ChatGPT's powerful capabilities in dialogue and generation make it widely applicable in fields such as smart homes, healthcare, finance, and education. In the field of translation, although ChatGPT's performance may not yet constitute a replacement for neural network machine translation technology, it has shown a certain degree of quality improvement in Chinese-English translation, terminology translation, literary translation, and other fields. The article also pointed out that ChatGPT still faces problems such as grammatical errors and semantic ambiguity in translation, which are influenced by language and cultural differences and context. In practical applications, it is necessary to combine other translation technologies or human translation to improve translation quality and accuracy.

3. Research Design

3.1. Experiment Issues

In the education and teaching of university English majors, the use of AIGC-type software, such as ChatGPT, will become more and more widespread, which brings both the convenience of education and teaching, and therefore many reflections and concerns. The status quo also promotes changes in education and teaching, and brings about cognitive changes. For the application scenarios of ChatGPT-type software in English major learning, and its value of use and satisfaction of use in education and teaching, this paper will adopt a natural experiment to carry out experimental research on the following issues:

(1) Differences in students' needs for using AIGC-like software, and their effects on usage satisfaction and willingness to use.

(2) The effect of AIGC software on students' personal competence and perception of personal competence.

(3) The impact of AIGC-type software on English majors' personal perception and future career planning.

3.2. Research Subjects

This research will invite ten students majoring in English at a university to use AIGC to complete daily translation tasks, and explore the effects of differences in needs on the assessment of the functions of AIGC-type software for large language modeling through observation, recording and interviews.

In this study, ten English majors (ZXY, HFX, CCC, SCX, JK, ZZY, LZQ, YML, XZH, YYF) will be invited to observe, record, and use questionnaires, interviews, and other naturalistic experiments to investigate the effects of differences in needs on the functional assessment of AIGC-based software, based on the grades in which they are currently enrolled, and on their different learning philosophies, habits, and learning abilities. AIGC-type software frequency, usage, and satisfaction, and to collect the impact of AIGC usage on their future career planning and cognition.

3.3. Research Methods

3.3.1 Research Design

In the initial implementation stage of this experiment, the participants were first identified, and ten students of different levels of English majors in a university were invited to participate in this study, and the purpose and methodology of the study were explained to them in detail to make sure that the participants had a clear understanding of the background and objectives of the experiment. With their in-depth use of the AIGC software, this study adopted a questionnaire survey, designed a questionnaire containing multi-dimensional dimensions such as frequency of use, direction of use, and satisfaction, and distributed it to the participants, aiming to obtain real usage data with reference value. In addition, personal interviews will also be a key step in the experiment, and this study adopts a semi-structured interview format to gain an in-depth understanding of certain participants' experiences and views on the use of AIGC software, and to obtain more detailed and specific information.

The AIGC software used in this study mainly focuses on well-known software at home and abroad, such as ChatGPT, Wenxin Yiyin and Xunfei Starfire.

After the data collection and organization, this study deeply analyzes the data and extracts the informative information about participants' behaviors and perceptions from the interviews. In the data analysis, firstly, the questionnaire data were statistically analyzed to reveal the overall trend of various aspects such as frequency of use, usage and satisfaction, including frequency distribution and average scores. At the same time, the content of the personal interviews was qualitatively analyzed to extract their content and perspectives in order to gain a more comprehensive understanding of the participants' individual experiences and the impact of AIGC-type software use on them. These two analyses will help dig deeper into the differences in English majors' needs and perceptions of AIGC software.

3.3.2 Survey and Interview Design

This study adopts structured interviews, which cover a number of dimensions to gain a deeper understanding of participants' experiences and perceptions when using AIGC.

First, we will focus on user needs, i.e., usage scenarios, to understand in detail the specific contexts in which participants use AIGC-type software, as well as examples of practical applications in contexts with high frequency of use, with the aim of revealing the real application needs of users in their daily lives and work. Second, this step will provide us with more comprehensive insights into user experience by collecting examples of impressive conversations about how AIGC performs in relation to meeting users' needs and whether these conversations have made a difference in users' perceptions of AIGC.

Additionally, in assessing user perceptions and experiences, we will focus on the extent to which expectations are met, the strengths and weaknesses of AIGC, and changes in usage strategies. Users will share their own strengths and weaknesses of AIGC and provide specific examples in order to more comprehensively assess the actual effectiveness and limitations of AIGC and to understand the changes in college student users' perceptions of AIGC. Finally, we will focus on users' overall perceptions of AIGC and its impact on future academic or career planning. Through this structured interview outline, we will gain an in-depth understanding of the actual application and potential impact of AIGC in the user community, providing a deeper insight into the results of the study.

4. Analysis of data

4.1. Changes in AIGC needs of students with different abilities

In the process of using AIGC, the development of students' translation ability shows a series of stage-by-stage changes. At the initial stage, most students maintain a relatively cautious evaluation of their translation ability, and generally believe that they need to rely on software or other auxiliary

tools when carrying out translation work. This suggests that students' expectations of the AIGC were mainly focused on providing help and support to compensate for the lack of personal translation ability.

However, as the time of using AIGC grows and they gain a deeper understanding of its functions, six out of ten students gradually experience a significant improvement in their personal translation ability (ZXY, CCC, SCX, JK, ZZY, LZQ). They felt the assistive effect of the software in practical application, which strengthened their confidence in their own translation ability. Even though some students (YML) might have doubts about their abilities in the process of using AIGC, they were usually able to re-establish their confidence in their abilities through more in-depth study and practice with the software. This increase in perception and confidence reflects the positive shaping effect of AIGC on students' translation abilities.

When using the AIGC large-scale language model, students at different academic levels showed different receptive attitudes. Students with lower academic levels are more inclined to accept the generated content in its entirety and use AIGC as their main source of information. Students with higher academic levels, on the other hand, were more focused on individual needs and contexts, and were more selective in adopting the information provided by AIGC. This difference is not only reflected in the degree of reliance on AIGC, but also in the breadth and depth of students' information acceptance. On the other hand, in the use of the AIGC large-scale language model, students' ability level also had an impact on their attitudes toward AI-generated content. Students with relatively more limited abilities were more inclined to accept most of the generated content and less likely to question and verify it. In contrast, more able students were more cautious about selection and validation and questioned AI-generated content more. This difference suggests that there is also significant variation in the adaptation and acceptance of AIGC across student ability levels.

Overall, the differences in demand for AIGC and its impact on translation abilities among students not only reflect the effectiveness of the software in enhancing students' actual abilities but also demonstrate the gradually established confidence and mentality of students during usage. Additionally, the adaptability of AIGC among students with different academic and ability levels suggests diversity in personalized teaching, providing insights for further understanding the application of AIGC in English major education.

4.2. Changes in Students' Willingness and Satisfaction with Using AIGC

During the usage of AIGC, students' willingness to use it shows an overall upward trend. Particularly when facing large translation workloads, students tend to choose to use AIGC-type software and modify its results to obtain the final translation output. However, willingness may fluctuate during usage, possibly influenced by factors such as content accuracy, translation quality, and self-ability. Some students may have doubts about using such software, fearing that it may stagnate their translation and related abilities. Overall, despite some instances of decreased willingness to use, there is a positive trend overall. In interviews, one student consistently believed that AIGC could meet their needs, giving a high score of 8. Another student also rated AIGC positively for handling general issues and providing basic information, giving a score of 7.

Regarding satisfaction, most students exhibit high levels of satisfaction with AIGC-type software, holding a positive attitude towards it and being willing to refer to or even adopt its feedback content. However, some students with stronger abilities may have slightly lower satisfaction, doubting the quality of the feedback content. For example, when encountering certain highly specialized issues, such software may struggle to relate certain translation theories to practical translation work, generating formalized, routinized content that does not align with human thinking and expression logic. In such scenarios, the satisfaction and willingness of students with stronger abilities may even decrease. However, overall, as students become more familiar with the instructions or methods of using AIGC, satisfaction generally exhibits a positive trend.

4.3. Impact of AIGC on Students' Personal Cognition and Future Career Planning

Regarding the benefits of AIGC on students' personal learning, the vast majority of students believe that AIGC has a positive impact, with only a few holding negative attitudes. Regardless of students' learning abilities and current translation levels, they generally acknowledge the positive influence of AIGC on personal learning. Furthermore, through interview responses, students demonstrate a deeper level of cognition of the impact of AIGC.

In interviews, when asked about the impact of AIGC on personal career planning, most opinions are that it has strengthened their current career direction. Although there are opinions suggesting that such software may potentially replace human translators in translation work, from the perspective of students in this major, although AIGC surpasses other software in translation abilities, it still lacks the creativity, uniqueness, rich language aesthetics possessed by human translators, and various flexible strategies and communicative skills used in communication conversion. Therefore, the idea of AIGC replacing humans in translation remains a fantasy and is difficult to achieve. On the contrary, students believe that AIGC serves more as a means to realize their own professional value, providing them with more opportunities for learning and development.

One student (YML) mentioned in the interview that they had previously been indecisive between translation and interpretation. However, after using AIGC-type software, they leaned more towards interpretation. This is because they believe that interpretation work is more challenging and difficult. In addition to discernment and translation abilities, more importantly, it requires communicative and expressive abilities that AI lacks. This viewpoint has made them more determined in their career direction, reflecting the impact of AIGC on personal career planning. Therefore, AIGC plays a positive role in enhancing students' cognition and firmness in career direction, improving the abilities and professional cognition of English major students.

5. Conclusion and Discussion

5.1. Research Conclusions

Synthesizing the findings from the data analysis, this study summarizes the following research conclusions:

(1) As the time of using AIGC grows, most of the students gradually experience a significant improvement in their personal translation ability in the process of using it, thus building up confidence in their own ability. At the initial stage, students hold a relatively conservative evaluation of their own translation ability and are more inclined to rely on the help provided by the software. However, with in-depth use and a deeper understanding of AIGC's functions, most students gradually felt the assistive effect of the software and consolidated their confidence in their personal translation ability. In addition, students at different academic levels showed different acceptance attitudes, and the level of ability also had an impact on students' attitudes toward AI-generated content, reflecting the differences in the adaptability and acceptance of AIGC among different groups of students.

(2) Students' willingness to use AIGC is generally on the rise, especially in the face of a high translation workload. However, the fluctuation of willingness is affected by various factors, such as content accuracy, translation quality, and self-efficacy. Some students may fear that using AIGC will lead to a stagnation of their personal translation ability, leading to a decrease in their willingness to use it. Despite such situations, the overall trend remains positive. In addition, the majority of students showed a high level of satisfaction with AIGC and viewed such software positively, but among the more able students, there may be doubts about the quality of the content of the feedback, leading to a low level of satisfaction. However, as the time of use increased, students became more familiar with the instructions or methods of AIGC, and overall satisfaction gradually increased.

(3) In the process of using AIGC, students not only improved their translation skills and self-confidence, but also gained a clearer perception of their personal career direction. Although there are some worries that AIGC may replace human translators, most of the students think that AIGC has

become more of a way to realize their professional value, providing them with more opportunities for learning and development. Students became more aware of the limitations of AI in the linguistic field through the use of AIGC, and thus valued themselves more for their linguistic creativity and uniqueness. This deepened awareness of future plans helped students face career choices with more confidence and provided a clearer direction for personalized academic development.

5.2. Discussion

The difference in demand and the impact on translation ability that AIGC elicits among students not only reflects the effectiveness of the software in enhancing students' practical abilities, but also the confidence mindset that students gradually build up in the process of using it. At the same time, the adaptability of AIGC reflects individuality and diversity among students of different academic levels and ability levels.

As the use of AIGC grew, students became more familiar with the instructions or methods of the software and developed a more positive attitude toward its use. Even though there are some doubts, students gradually accept the positive effects of AIGC in improving translation efficiency and quality, and satisfaction and willingness to use it show an overall positive trend, reflecting the actual effects of AIGC application.

In terms of personal learning and career planning, the impact of AIGC software on students is diversified, giving students a rich and diverse inspiration for future career planning. The future role of AIGC software in the language industry may not be limited to the current concern that artificial intelligence will replace human language creative work.

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