

# The Transformation of English Interdisciplinary Education in the Context of Artificial Intelligence

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**Abstract:** Currently, artificial intelligence products represented by ChatGPT are having a significant and far-reaching impact on school education. However, there are many education practitioners who are concerned about their negative impact on the education industry, and currently there are education departments and colleges and universities that have introduced a ban on the use of ChatGPT. However, it is better to block than to block, and how to deal with it properly should be the focus of teaching administrators and related organizations. For English education, we should not only teach students to use English to communicate, but also focus on cultivating students' national emotions and family values, so that they can grow up to be internationalized talents with both integrity and talent. English interdisciplinary theme learning as a new way of learning, in theory, it can provide path support for the implementation of students' core literacy through the cultivation of students' problem solving ability, but in practice, it is inevitable to encounter the problem that the English level of our primary and secondary school students is much lower than the cognitive level, how to grasp the opportunity of the times, the use of AI to empower English education, and to promote the transformation and upgrading of the teaching mode, it is worth exploring and thinking about. It is worthwhile for us to explore and think.

**Keywords:** Artificial intelligence; English language education; Interdisciplinary education.

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## 1. Introduction

The English Curriculum Standards for Compulsory Education (2022 Edition) proposed for the first time interdisciplinary thematic learning in English, emphasizing that students are guided to carry out comprehensive practical activities in English around a specific theme, driven by real problems or tasks, using knowledge from other related courses in the light of their personal life experiences and social life needs, and promoting the comprehensive development of students' core literacy. However, the introduction of interdisciplinarity increases the cognitive load of students' English learning to a certain extent[1]. In the process of English interdisciplinary theme-based learning, students not only have English language challenges, but may also face cognitive comprehension challenges.

In addition, the report of the 20th Party Congress explicitly states the need to "promote the digitization of education". This key point of education policy was directly reflected and fully responded to at the February 2023 World Conference on Digital Education. In addition, judging from the widespread implementation of AI products such as ChatGPT, the era of AI has arrived, and digital teaching will become an irreversible trend. In the age of informationization, it is of strong practical significance to strengthen the use of scientific and technological means to promote the change of English education. In summary, how to take advantage of the east wind of education digitization to boost the transformation of English interdisciplinary education is the issue that this paper wants to explore.

## 2. Opportunities and Risks of Artificial Intelligence Products like ChatGPT for English Education

### 2.1. Teachers

#### 2.1.1. Opportunities

In the age of information technology, artificial intelligence and other high technologies have brought great opportunities to the development of English teachers. On the one hand, they can help teachers to detect students' learning in a timely manner, such as detecting the completion of English composition, and also support the generative and personalized nature of teaching feedback and evaluation[2]. Critique.com, an online service system for intelligent critique and correction of English compositions that is already available on the market, has already been used in the compulsory education stage, University stage have been widely used by teachers and students, greatly reducing the burden of teachers. On the other hand, it can also reduce teachers' burden and increase their efficiency, and reduce their routine workload through automation. For example, when ChatGPT is used in combination with other generative AI technologies, it can not only generate text, but also images, videos, presentations, or realize other more complex functions[3]. English as a language is abstract, and teachers need a lot of interesting materials to help students understand it better without making them feel boring. The above mentioned functions are exactly what teachers need to spend a lot of time to design carefully in the previous English teaching process. If these functions can be implemented in the teachers' group, it will greatly reduce the load of the teachers, and also allow teachers to have more time and energy to devote to the teaching innovation of English interdisciplinary education, so that they can complete their teaching work more perfectly.

### 2.1.2. Challenges

At the same time, artificial intelligence also brings many challenges. First of all, the use of AI technology in the field of education has not yet matured. Taking the unique regional ecology of information technology integration constructed in Dongcheng District of Beijing City as an example, teachers in the district have found after the in-depth use of AI in teaching that "when using AI testing, students' answers must be consistent with the original text, and when they are not consistent with the original text, they are defaulted as not having said it correctly. The software would only determine whether the answer was correct or incorrect and lacked further guidance on the interpretation of the answer"[4]. This is likely to reduce the diversity of students' answers, undermine students' self-confidence during speaking training, and is not conducive to stimulating students' creativity and imagination. Secondly, powerful AI aids also put forward higher requirements on teachers' ability, teachers need strong knowledge right and wrong discernment ability when faced with diverse contents, especially in the preparation of the lesson to be able to take the essence and remove the dross. Once again, in the process of English teaching, many teachers are currently using high technology only in some simple primary applications, such as playing some classroom-related videos as an introduction before class, etc. In the case of AI-supported English teaching and learning intelligent environment constructed in a comprehensive way, do front-line teachers feel the help provided by AI to English subject teaching[4]? There is still a question mark to be asked.

## 2.2. Students

### 2.2.1. Opportunities

Artificial intelligence and other high technologies also bring great opportunities for the development of students. First, intelligent learning can develop targeted learning programs based on students' different learning needs, truly realizing tailored teaching. Especially in English learning, for the English subject, mastering a language requires a lot of input, output and feedback, but the reality of traditional large class teaching makes it difficult to realize. The emergence of artificial intelligence can help solve this problem to a certain extent. For example, it can realize automatic recognition of speech and language through deep learning based on acoustic and linguistic models, and make learners' speech expressions more accurate and fluent through voice correction[5], etc., to enhance learning effects. Secondly, it can provide students with a large and authentic corpus, and also provide English learning materials at different stages according to the students' current English level. For example, learners with higher English proficiency can listen to English news blogs such as BBC/VOA to be exposed to more authentic linguistic inputs, and learn more authentic and pure expressions, which will also reduce the expression of Chinese English.

### 2.2.2. Challenges

In addition, there are also many scholars who have expressed concerns about the use of AI products by students in the process of English learning. First, intelligent learning tools may cause students to be attracted by other contents in the products in the process of learning, distracting students' attention and thus lowering their listening or learning efficiency. For example, when students are learning English on the Internet, they may be attracted by some advertisements popping up in the interface, thus interrupting their learning of English in the middle to browse web pages or play video

games. In addition, the excessive use of artificial intelligence as an aid also has the potential to make students dependent on these products, thus weakening their ability to think on their own. Some students, after receiving homework assignments from their English teachers, choose to search for answers directly online, without even recognizing the authenticity of these answers. A scholar at Western Washington University argues that just as using a machine to help one lift dumbbells doesn't mean that one's muscles will be developed, using a machine to write an essay doesn't mean that one's mind will develop. This similar behavior seriously hinders the development of students' critical thinking skills and creativity. Finally, although ChatGPT is much like a traditional search engine in that it can quickly provide a large and rich amount of information for learning, the accuracy of its information cannot yet be guaranteed.

Obviously, the integration of intelligent products into English education has both advantages and disadvantages, and when it is applied to address the needs of foreign language education, it will bring unexpected challenges to the field of foreign language education, and of course, it will also bring broader opportunities for language teaching. Therefore, the attitude of foreign language speakers in general should be more positively embraced and positively responded to[6]. In the traditional English learning process, most students always learn English as a tool, but the value of language is actually much more than that. We learn a language not only to communicate with people from other countries by mastering it, but also to learn the culture behind the language and the way of thinking, so that we can communicate better with people from other countries and nationalities. Foreign language education in the age of intelligence is inseparable from and most closely related to the application of linguistic intelligence results, so the thinking about the impact of the ChatGPT linguistic intelligence model should at least rise to the height of the whole foreign language education in the whole domain, not just limited to the meso level of language teaching[6]. In the context of the new era, we should pay attention to cultivating students' information acquisition ability, critical thinking ability and logical expression ability, which do not come from the general and shallow cognition and understanding of the content of the material they have read, but are internalized through the deep understanding of the author's point of view and the purpose of the writing, as well as the acquisition of the appreciation of language and text and the generation of personal character. As a new way of learning, English interdisciplinary thematic learning can theoretically provide a path to support the implementation of students' core literacy through the cultivation of students' problem-solving ability[1].

## 3. Background of Artificial Intelligence: The Development Path of English Interdisciplinary Education

English interdisciplinary theme-based learning emphasizes guiding students to make comprehensive use of the knowledge of different disciplines to carry out learning, and to enhance their ability to solve problems creatively by using the language they have learned and their interdisciplinary knowledge. This kind of teaching method helps to break down the barriers between disciplines, make the knowledge of various disciplines integrated, and make students learn to

solve problems by comprehensively applying their knowledge, thus helping them to truly internalize their knowledge. In addition, English interdisciplinary education is also conducive to the cultivation of students' ability to solve problems in real life. However, in practice, the comprehensive difficulty of English interdisciplinary thematic learning is higher than that of general English teaching because students have to learn not only English, but also other disciplines, and this interdisciplinary knowledge itself is a challenge for students; they are generally beyond their existing cognitive level, and they need students to spend extra time to learn them. However, even if teachers adjust the difficulty of interdisciplinary knowledge downward in the process, the overall difficulty of students' English learning will still increase due to the problem that the English proficiency of our primary and secondary school students is far below their cognitive level.

English interdisciplinary education highlights the problem of imbalance between the English level and cognitive level of China's primary and secondary school students, and the rapid development of artificial intelligence may be able to become a powerful helper of English interdisciplinary education, effectively promoting the improvement of students' English learning efficiency. In traditional English education, most English teachers spend almost all their energy on teaching students vocabulary, grammar, phonetics, and listening, reading, and writing, but have no time to pay attention to speaking, which is the real communication skill, so spoken English has become a common weakness of our Chinese students in learning English. We also need to recognize that the skills mentioned above are the basic skills we need to master English, and one is indispensable. In an era oriented to core literacy, knowledge no longer seems to be important. In English teaching, the proposal of core literacy requires teachers to change the knowledge-based teaching concept, break the traditional over-emphasis on the transmission of knowledge and skills, get out of the context of mechanical drills, pay attention to the English language ability, guide students to learn in depth, grasp the essence of the subject, and develop core literacy. However, this does not mean that English teaching should ignore language knowledge, but should shift from "teaching for knowledge" to "teaching based on knowledge"[1]. In the age of artificial intelligence, schools do not need to abandon basic knowledge and basic skills, on the contrary, we should pay more attention to the cultivation of students' basic knowledge and basic skills[3]. The deep integration of artificial intelligence and education also shows us the possibility of solving these problems, for example, ChatGPT can help students revise and embellish their essays to improve their writing. At the same time, students can get inspiration from the text generated by ChatGPT and exercise their creative writing skills[7]. The use

of such functions, when formed into an effective system, will undoubtedly be a great help to the existing large-class teaching system, which can effectively free the hands of English teachers, help students learn English in a personalized way, and promote the mastery of the basic skills of English in a more efficient manner for each and every student. Only on the basis of effectively improving the efficiency of English learning can students promote their own English proficiency and cognitive level of "two-way running to", laying a solid foundation for the interdisciplinary development of English.

## 4. Conclusion

In the era of artificial intelligence, we need to rethink the positioning of English education, English teaching on the one hand should be more in line with the future development needs of students, and on the other hand, it should also be responsive to the needs of society for diversified talents. So that students can grow up to be internationalized talents with both integrity and talent. Interdisciplinary English education has a strong practical and diversified nature in cultivating talents, and at the same time, by adhering to the wind of artificial intelligence, it will surely give the optimal solution for English education in the new era.

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