

# Constructing “English+” teaching mode enabled by ChatGPT: Taking “English + IT” subject as an example

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**Abstract.** With the explosion of English subjects, graduates majoring in English are now facing the dilemma of losing social and employment competitiveness. The present study found that English can combine its designated education with other subjects to improve students’ overall competence, and using the new artificial intelligence of ChatGPT may be a promising method to assist English language teaching. The research has conducted semi-structured interviews with five students studying “English Language and Data” subjects at a university in Zhejiang, China. Through the semi-structured interviews, all of the interviewees used ChatGPT during their studying life at university; they not only used ChatGPT in English major courses, but they also used it in IT-related courses more often, and they preferred using ChatGPT, believing it had more pros than cons. The results showed that ChatGPT had become a good tool for English language teaching and “English+” subject learning, and its future remains to be explored.

## 1 Introduction

With the development of English language teaching in China, how to cultivate interdisciplinary talents with a good command of English has become a heated topic of discussion in Chinese society nowadays. In recent years, plenty of Chinese universities have begun to construct an interdisciplinary major mode called “English+” teaching, and the “English + information technology” major is one of the most successful combinations. Besides, the increasing popularization of artificial intelligence (AI) has become an indispensable tool for education itself.

Based on the current situation, the study is aimed at systematically combing, summarizing, and commenting on the application of AI in English interdisciplinary education, so as to enhance the social competence of English majors, as well as offer some references and inspiration to the following researchers.

## 2 Literature review

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## **2.1 Previous studies of English language teaching**

China has carried out traditional teaching for a long period, now it can be found that traditional teaching has the disadvantages of limited contents, outdated methods, overlong processes, etc., and it cannot adapt to the needs of Chinese society [1]. For these reasons, Chinese education should focus on subject blending and comprehensive teaching. In the early years, the instrumental nature of English had been magnified, and English had been considered a simple way and carrier for communication, ignoring its cultural distinctiveness and interdisciplinary characteristics [2]. It was not until some universities made a bold attempt to develop discipline integration from simple disciplinary compounding that the world began to notice inter-disciplinary talents with a good command of English. As a result, blending English language learning with other subjects in different fields has numerous and diverse cases [3].

## **2.2 Previous study of “English+” teaching**

Before 2019, the use of computers in Chinese universities had reached 100%, so how to combine computer or IT teaching resources with English teaching has become a hot topic in research and development [4]. While using IT teaching resources to assist English teaching has plenty of benefits, it also has a lot of requirements, so how to blend the subject has been studied by many researchers [5]. For example, organically combining computer networks with foreign language curriculum, using the cloud side of the network to teach English through a MOOC platform, etc. [6, 7]. A great number of universities, represented by Shanghai International Studies University (SISU), constructed the “English Language and Data” subject, aiming at reasonable integration of IT and English.

## **2.3 Previous study of the application of AI in English language teaching**

In recent years, more and more intelligent robots and artificial intelligence have been applied to education. There have been studies of the application mode of intelligent robots in universities or about the innovation of the integration of AI into the English teaching mode [8, 9]. Since 2023, ChatGPT has sprung up, and more and more people are beginning to consider the application of ChatGPT to education. Some hold the opinion that it can help form the conveniences of education, while others believe it may hinder the construction of critical thinking in students [10-12]. Therefore, educators should be provided with a system of tactics and techniques to better use ChatGPT, and many researchers are now starting to learn about its influence on educational practice, educational policies, and educational orientation [13].

## **2.4 Research questions and aims of this study**

The previous overview suggests that artificial intelligence, especially ChatGPT has great power to improve English language teaching in high schools, however, research in the field of the use of ChatGPT in the “English + IT” subject is little. The study set up interviews with students majoring in “English + IT” subject in order to fill the gap. Through the procession, this study came up with these questions:

Q1: What type of classes and which learning procedures do students often use ChatGPT in universities?

Q2: Is enabling English language teaching by using ChatGPT more advantageous or on the contrary?

### 3 Methodology

#### 3.1 Recruitment

Participants for the study included 5 students from the “English Language and Data” subject at a university in Zhejiang, China (AUZC), 1 sophomore, and 4 juniors (see Table 1). The male/female split of people who participated in the semi-structured interviews was 20 percent/80 percent (0 percent of participants refused to disclose).

**Table 1.** Participants’ information.

Participants	Gender	Age	Interview Duration
Student A	Female	21	6:59
Student B	Female	22	9:01
Student C	Female	21	6:24
Student D	Male	21	7:25
Student E	Female	20	7:02

#### 3.2 Instruments and procedures

The procedure had been divided into two different parts. Firstly, the interviewees were invited to share their attitudes and opinions towards ChatGPT. During the interviews, the researcher first asked their grade or age, then the interviewees were asked about their frequency of using ChatGPT, what types or specific classes they use ChatGPT, and in what learning procedures they use ChatGPT. They are also acquired about their attitudes towards ChatGPT, what advantages and disadvantages they think ChatGPT has, and what points ChatGPT can improve. The interview is in order to explore how wide an impact the ChatGPT has and what advantages and disadvantages it has.

Secondly, some students have been in touch with others on the internet; through the brief interview by Tencent Meeting, they were asked the same questions. Through these results, the research hopes to find that ChatGPT has a strong power to help the students major in “English Language and Data” the way of learning both English subjects and IT subjects, and ChatGPT has more benefits than drawbacks.

#### 3.3 Data collection

The semi-structured interviews were held in June 2024. They were basing the semi-structured guideline, held at the participants’ school, dormitory, or online through the Tencent Meeting app. The interviews are in a one-on-one setting. The interviews were digitally audio-recorded. The interviews lasted on average  $M = 7:22$  (range = 6:59-9:01). The interviews were conducted in Chinese, and they were transcribed sentence by sentence and phrase by phrase. All the transcriptions were checked by the author and then were translated into English.

#### 3.4 Protection of data privacy

In order to protect the data privacy of the participated students, informed consent was separated from the recorded resources. During the transcription, all the names and identifying information were hidden.

### 3.5 Data analysis

In order to develop a detailed picture of the participants joining the interviews, comprehensive descriptive statistics were collected to interrogate the data, content analysis was also included. The study tried to turn the words the interviewees spoke into the paper and used word frequency statistics, key word reproduction, and inductive analysis to make a full understanding of the interviewees' attitudes towards ChatGPT and what benefits they think it possesses.

## 4 Results and Discussion

There are 5 participants who took part in the interviews in total. The interviews found that all of the participants had used ChatGPT during their life in university, and Student A and C used ChatGPT 2-3 times a week, Student B used ChatGPT only once a week, Student D used ChatGPT almost every day, and Student E only used ChatGPT at the end of the semester, when she was asked to write a final paper for a certain course, but in the other time of the semester, she seldom used ChatGPT.

Another important finding was that Student B used ChatGPT mainly in “English Writing” class or some other classes that needed to write some reports and articles, while the other participants used it in “Machine Learning” “Language Processing” “Corpus Research Methods” “Information Analysis” “Data Mining” “Information Technology and Application” and many other courses that involved IT, data analysis, code, big data, etc. (see Table 2).

**Table 2.** The courses students used ChatGPT.

Student	The Courses That Need ChatGPT	The Course Uses ChatGPT Most
Student A	“Linux”“Corpus Linguistics”	“Linux”
Student B	“English Writing”	“English Writing”
Student C	“Big Data Technology and Principles” “Natural Language Processing” “Information Analysis”	“Natural Language Processing”
Student D	“Machine Learning” “Language Processing” “Corpus Research Methods” “Information Analysis” “Data Mining” “Information Technology and Application” “Natural Language Processing”	“Natural Language Processing”
Student E	“Natural Language Processing” “Corpus Research and Methods”	“Natural Language Processing”

Through the interview, it can be seen that three of the students use ChatGPT in the “Natural Language Processing” course most, one uses ChatGPT most in “Linux”, which also has a relationship with IT and code, and only Student B uses ChatGPT in “English Writing class” most.

A similar trend was observed when students were asked what learning procedures they preferred using ChatGPT; all of them tended to use it after class, especially while they were doing their homework. When it comes to producing an article, an essay, or a paper, it can help students summarize the topic, offer some ideas, or give some specific research directions. What is more, it can help students find grammar mistakes and paraphrase the text, offer some advanced vocabulary, and make the context more professional, logical, and authentic.

When using ChatGPT to work out courses that are about IT, for example, “Natural Language Processing”, first, the students offer ChatGPT a complete piece of code; it can output a string of explanations, and also, according to the requirement it received, it can give a new piece of code back. It also had an interaction with the students; based on their errors and feedback, they gave another correct code again. In the meantime, when students fail to

find how to start the code job, they can also ask ChatGPT to give them some possibilities, references, and modes and help them finish the code writing.

There is no noticeable difference among students in their opinions and attitudes towards using ChatGPT, all of them preferred using it, and all of them held the opinion that ChatGPT had more advantages than disadvantages. It could offer students some responses almost immediately and help them solve the problems using Chinese-English interaction way. As the students trying to finish the IT courses that they were not so good at, it could also offer them a lot of assistance such as producing a special piece of code or helping them explain and summarize the resources.

However, it cannot be avoided that ChatGPT also has plenty of drawbacks. First, it has quite expensive prices that not all the students can afford, and its resources are still not complete and cannot solve all the problems. It will also make mistakes. Moreover, sometimes they cannot remember what students asked them to do above, and they should type their requirements again in the chat box, which usually wastes plenty of time. What is more, it is based on an English database; it sometimes fails to give information about Chinese knowledge, etc.

There is one thing important that must be mentioned: when students try to use ChatGPT to produce academic work, especially in the “English Writing” class, if students always rely on ChatGPT and use it to do most of their homework, it may come with a research ethics problem. Hence students cannot do every academic research depending on ChatGPT; it can only provide them with certain research directions and some vague ideas. Students should still do the main work by themselves.

It is undeniable that ChatGPT has offered plenty of convenience and benefits to students, and it has gradually become a necessity for students, however, it still has numerous points that wait to improve and progress.

First, about education, now it has become a powerful tool, but it is still not enough, its database is not totally complete, which will lead students to another mistake. When it comes to IT, it is not so intelligent, it will make many errors, or offer some wrong or fake statistics directly. ChatGPT can be a good tool for students, but it cannot replace teachers or students, for when they use ChatGPT, they will rely on it, and do everything that depends on it, which will make students’ brains lose their logic.

## **5 Conclusion**

In conclusion, the main objective of the study was to investigate the impact of adding ChatGPT into English language teaching and the “English+IT” subject. In order to achieve these aims, the research set semi-structured interviews, which included five participants. The findings of the study reveal that nowadays ChatGPT has been widely used in every learning procedure in “English + IT” subjects, it helps students finish their homework, gives them some creative ideas, and helps them explain IT knowledge, while it also has quite a lot of disadvantages, and the might of causing academic ethical problems must be given great attention.

There are quite a lot of limitations in this research. The first limitation is the context; the interview was conducted in the Chinese context. The results of this study should be carefully reconsidered outside of China, especially in Western countries. The number of interview participants was not very large, but it can be tested in other countries in Asia, such as Japan, Malaysia, Thailand, or Singapore. The second limitation is the background. The whole study is based on the situation that English subjects and English majors are still increasing, and many countries, especially China, are seeking ways to combine English and other subjects together. The future of the “English+” subject's development remains to be seen. If, in the future, the “English” subject, the “English+” subjects, or even the ChatGPT decline, this

study will make no sense. But at least in the recent 10 years, “English+” subjects and ChatGPT will still play a big role in every part of English education. The result of the study is able to be applied to modern education, and it actually makes some degrees. The third limitation is the method. During the study, a semi-structured interview was the only method used. If there are not so many people involved, it might fail to conclude an accurate pattern. In future studies, researchers can make a better mixture of quantitative and qualitative analysis and make use of more creative and scientific methods. The final limitation is the future research direction. Before this study, many pioneers had researched this field, so this study tried to learn the field of the “English + IT” part. In future studies, ChatGPT and “English+” subjects could be given more attention, and many of these fields are also worthy of study.

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