A Study on the Acceptance and Use of AI-assisted English Learning among English Majors

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Abstract: The wave of educational AI-assisted English learning is taking English learners by storm, and researchers have mostly studied using artificial intelligence in education; however, studies related to the specifics of acceptance and application of AI learning software by English specialist learners are still relatively lacking. In the present study, a quantitative study was done to examine the current situation of acceptance and use of educational AI in English acquisition and learning by English professional learners. Based on the 23 questions answered by 100 participants, data collection using the Questionnaire Star online platform, and descriptive analysis, correlation analysis, and analysis of variance, etc. According to the results of the study, students were willing to employ AI to aid them in all aspects of English learning, and that the dimensions of the scale show significant correlation with the willingness to use it. Moreover, there is no significant difference in willingness to use different AI software.

Keywords: ChatGPT, artificial intelligence, language acquisition, foreign language education.

1. Introduction

In the context of the current new era, artificial intelligence in various countries is developing at an extremely fast pace, and all kinds of ai software and all kinds of educational artificial intelligence platforms have sprung up in China, which are similar to a huge corpus and act as a large-scale language model for a wide range of scenarios and purposes, and are particularly useful for educational tutoring. Numerous scholars have conducted an in-depth study research on the combination of artificial intelligence and the field of education, and have come to the conclusion that the trend of the deep integration of the new technological wave with the field of teaching is inevitable. Only by keeping an open attitude, actively catering to the development of the times, and rationally utilizing AI resources can individuals improve learning efficiency and make more achievements. Most of the existing literature is delving into the relationship between AI and educators, but there are fewer studies with learners, especially English language learners. AI has a significant effect on the learning of English majors college students. Digital technologies such as Chatgpt bring new advantages to English learning, but there are cases of students abusing AI. Teachers are unable to do effective guidance and supervision, thus having a negative effect on educational learning. What is the current situation of applying educational AI for English majors? What are the learning advantages and limitations of AI software for students? These questions urgently need to be answered.

Therefore, to investigate the present status of AI application among English majors,the author makes this study, which in turn will provide a reference for English majors to improve the efficiency of English learning by using AI. Based on Venkatesh et al.'s study [1], this study investigates and analyzes the current situation of English majors' acceptance and application of educational AI to the study and acquiring of English.

The independent variables include performance expectation, effort expectation, social influence, and facilitation. The four variables were examined to examine their effects on students' intention to use as the dependent variable.

2. Literature Review

Since the 1980s, the amalgamation of artificial intelligence and education has been an academic research field with some research ability [2]. After entering the 21st century, with the rapid development of AI technology, ai and education continue to deepen the integration. language modeling AI, such as ChatGPT, can recognize and understand the language and symbols input by people, and deeply analyze the questions asked by the user, and through multiple rounds of conversational exchanges, it can recover the connection between speech and form, disambiguate syntactic ambiguities, and explain irrational sentences with noise corruption (noise). corruption to explain irrational sentences, determine implied causality, reasoning, lexical meaning access and lexical extraction, etc. [3]. This feature of ChatGPT can facilitate the revolutionary shift from machine language to natural language interaction in online second language acquisition and foreign language learning [4].

In English language teaching and learning, many scholars believe that AI is applied in several English language learning domains to promote English language knowledge learning and English skills improvement. Chinese scholars, such as Hua Lulu, believe that AI promotes English learning, and a comprehensive integration of AI and English education and teaching plays an important role in language skills training, such as improving the vividness of English listening resources, creating a "native" English communication atmosphere, increasing the degree of entertainment in English reading, and improving the motivation of English writing [5]. In recent years, Jiao Jianli further proposed that ChatGPT enables individuals to have their own AI assistant and personal learning consultant, especially to encourage personalized feedback from students and foster collaborative learningsuch as QuillBot, Ginger, InstaText, Grammarly and so on. That personalized guidance and timely feedback encourage self-directed learning, self-reflection and self-regulation by this provide learners with customized feedback for their written assignments, as well as Codecademy for coding tasks [6]. This personalized guidance and timely feedback encourage self-reflection, self-directed learning, and self-regulation by enabling students to acquire knowledge from their mistakes [7]. Han Tong also studied the application of AI in English writing learning in depth. She surveyed 498 English students in the first year of high school, and found out that the students' demand for educational AI is more for reading excellent model essays, automatically recommending exercises, and real-time monitoring of the learning status, etc. However, the scope of the study is limited, and it is only dedicated to the application of educational AI in reading and does not include any other English learning segments or parts [8].

On the other hand, the application of AI has also brought some negative impacts on students' English learning and has attracted the attention of scholars. Students' wrong use of AI software leads to AI abuse and academic deception. When using ChatGPT, students use ai generated text but do not distinguish the literature cited in the content, which raises the possibility of plagiarism [9]. In the same year, Cecilia Ka Yuk Chan investigated that a sample size of 1,000 showed that approximately one-third of college students in the U.S. used AI bots such as ChatGPT to finish their written assignments, and 60% of students used the program to complete more than half of their assignments,

with some students using it to cheat [10]. English has become the most frequent subject in which college students use ChatGPT [4]. A more serious situation is that, over-relying on AI can result in students losing their initiative when learning English and do not think about the knowledge and use of language in AI-generated texts [11]. To summarize, both teachers and students are unable to keep abreast of the students' application of AI in English learning, which leads to teachers' inability to effectively supervise and guide students, and triggers the negative effects of AI-assisted English learning.

What sets this study apart from previous ones is that many scholars have studied the AI's use in English language instruction in various aspects, and AI-assisted English learning has brought new advantages and some potential risks. However, the specific application of AI for English as a foreign language (EFL) students to accept the use of AI in English learning situations has not yet been fully investigated. Therefore, this study summarizes the impact and the degree of impact of AI English software on EFL students' English acquisition according to the content and characteristics of the application. It is believed that this study can better present the application of AI to English specialist students, help students to correctly understand the value of AI application and English acquisition, and better understand the current situation of their use of English AI. Consequently, in order to investigate the students' particular acceptance and use of AI support for English language learning, as well as to offer references for English majors' English language learning, the author studies the following two questions:

1. What is the present situation. of students' acceptance and use of AI software in AI-assisted English specialized students' learning?
2. What factors influence students' use of AI for learning English?

3. Methodology

3.1. Theme

This study discusses the current status of acceptance and application of educational AI-assisted English learning among EFL students. 105 questionnaires were recovered, and 5 questionnaires with inconsistent answers and too short a time were excluded, and the retrieval of 100 valid questionnaires resulted in an effective recovery rate of 95%, which meets the requirements of the statistical analysis of this study.

3.2. Measurement Methods

The questionnaire of this study’s dimensional structure is based on Venkatesh et al.'s[1]. Integration Theory of Technology Acceptance and Use. On this basis, it also refers to Harbin Normal University's Han Tong's whose adapted scale retains five measurement dimensions including performance expectation, effort expectation, social influence, convenience, and usage intention, with four items for each dimension and a total of 20 items in all. The questionnaire was divided into three parts, the first part investigated the age information of the students, the second part investigated the use of educational AI by the students, such as the commonly used platforms and software, the need for use and other information. The third part measures the acceptance and application of educational AI-assisted English learning among EFL students, with five dimensions (20 question items)[8]. In addition to the first part of the identity information survey and the multiple choice in the second part, the third part of the questionnaire items were developed based on a five-point Likert scale, with the options categorized as 1=not at all, 2=basically not, 3=fairly, 4=basically, and 5=completely. In addition, the “Q1,Q2,Q3” means the first, second, third questions of the qustionnaire.

3.3. Methods of Analysis

The analysis methods employed in this study included reliability analysis, descriptive analysis, correlation analysis, and analysis of variance. The sample data collected consisted of 100 observations that were analyzed using SPASS.

4. Results

4.1. Descriptive Statistical Analysis

The research object is junior college students majoring in English in a teacher training college within Hebei Province, and the valid questionnaires are 100, in which the first and second parts of the questionnaires investigate the basic information of the students, the commonly used AI tools as well as their sources, and the demand for and evaluation of the AI.

The first part of the information part has a total of one multiple-choice question, which investigates the gender information. The results are as follows:

In terms of gender, there were 11 (11%) male students and 89 (89%) female students, with the number of female students significantly higher than the number of male students.

Table 1: Artificial Intelligence Platforms Used by EFL Students in their Learning.

English Artificial Intelligence Platform	frequency	percentage
ChatGPT	62	62%
Tiangong AI, Wisdom Spectrum Clear Words, etc.	39	39%
Grammerly Writing Assistant	15	15%
Utalk Intelligent Pronunciation Software	61	61%
iwrite writing platform	73	73%
language class	36	36%
Homework help and other question search software	45	45%
(sth. or sb) else	5	5%

The results of the Q2 survey show that the 100 English majors surveyed used the following educational AI platforms in the process of English learning: among them, the most frequently used by students is the iwrite writing platform at 73 (73%), followed by the Utalk Intelligent Phonetic Correction Platform and ChatGPT at 61 (61%) and 62 (62%), respectively, and in addition, the number of Chinese AI software such as Tiangong AI software, Chinese AI such as Tiangong, language classroom, homework help and other question search software are also higher in number, at 39 (39%), 36 (36%), 45 (45%), respectively, and the number of individuals who utilize Grammarly writing assistant is less at 15 (15%) (See Table 1).

Q3 surveyed the students' needs for using how AI is used in acquiring English, and the findings demonstrated that the most important needs were writing instruction, 65 (65%) and grammar checking needed in writing instruction 68 (68%). Pronunciation correction came next at 57 (57%), vocabulary expansion and assisted reading comprehension were both 56 (56%), and the need for listening improvement was the least at 35. The needs corresponded to the use of the platform one-to-

one, and the students were willing to use the writing platform for writing instruction, grammar correction, and the pronunciation correction platform for speaking training.

4.2. Correlation Analysis

Table 2: Correlation analysis of dimensions.

Pearson Related					
		facilitation	social impact	strive for	Performance expectations
Intent to use	correlation coefficient	0.802**	0.619**	0.683**	0.590**
	p-value	0.000	0.000	0.000	0.000
	sample size	100	100	100	100

* p<0.05 ** p<0.01

According to the Pearson correlation coefficient data provided, all four factors - facilitation, social influence, effort expectation, and performance expectation - significantly influenced intention to use, with correlation coefficients of 0.802, 0.619, 0.683, and 0.590, demonstrating that there is a considerable correlation between the intention to use and performance expectations, effort expectations, social influence, and facilitation (See Table 2).

Table 3: Differential analysis of students' use of types of English AI software and each dimension.

ANOVA results					
	Types of English AI software used (mean ± standard deviation)			F	p
	Both categories used (n=43)	Use of ChatGPT-type software (n=17)	Use of linguistic AI software (n=23)		
social impact	2.95±0.62	3.00±0.76	2.96±0.78	0.029	0.971
strive for	3.10±0.61	3.00±0.85	3.01±0.70	0.215	0.807
Performance expectations	3.45±0.59	3.38±0.79	3.48±0.66	0.108	0.898
facilitation	3.55±0.64	3.22±0.82	3.55±0.85	1.324	0.272

* p<0.05 ** p<0.01

English AI software used by students is divided into two categories, one is ChatGPT and other big data question answering software, there are Chatgpt, Tiangong AI, Wisdom Spectrum Clear Speech, etc., homework help and other question search software. The second category is language AI software, Grammerly Writing Assistant, Utalk Intelligent Pronunciation Correction Software, Iwrite writing platform, language classroom. There are three types of usage for students in English learning, using Chatgpt class software or language AI software alone, or using both at the same time.

As can be seen from the above table, using ANOVA to study the differences in the use of English AI software types for social influence, effort expectations, performance expectations, convenience conditions for a total of four items, it can be seen from the above table: different samples of the use of English AI software types for social influence, effort expectations, performance expectations, convenience conditions for all of them do not show significance (p>0.05), which means that the

samples of different kinds of English AI software use for social influence, effort expectation, performance expectation, and convenience condition all show consistency and there is no difference (See Table 3).

5. Conclusion

Through the study, it was found that the basic situation of the application of educational AI in English learning for English specialization students is that students have a high willingness to use AI to assist their English learning. Software that is most frequently used is designed to meet students' learning needs, specifically writing platforms, speaking training platforms, and grammar checking platforms. These platforms serve to offer writing guidance, vocabulary expansion, and grammatical and phonological corrections. The differences in the types of AI tools, the use of ChatGPT-type software, language-based AI software and using both types of software did not have significant differences on the dimensions. Significant correlations were found between intention to use and performance expectations, effort expectations, social influence, and facilitation, with facilitation having the highest correlation with intention to use. Schools that want to enhance the intentions of students to use intelligent systems for learning English should focus on improving the convenience and simplifying the operation of the application to increase students' intention to use the software so that they can be more efficient in their English learning. This study presents the acceptance and use of AI by EFL students, which helps students to correctly understand the basic situation and value of applying AI to English acquisition, and helps teachers to grasp the students' learning situation and provide correct guidance and supervision. There are restrictions that exist in this study, the sample size is small and limited to institutions in one province, which has a certain impact on the results of the study. In view of the shortcomings, the author proposes the prospect that the number of research subjects should be expanded in the future, and the scope of the study area should be expanded to make the research subjects more generalized and to improve the generalization of the research results.

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