

A Study of the Usage of English Mobile Tools by College Students of English Majors

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Abstract: With the advancements in science and technology, the learning methods of college students, especially college foreign language learners, are constantly evolving. The rapid development of Internet technology and artificial intelligence software has contributed to the diversification of students' learning modes. Nowadays, mobile-assisted language learning based on application software and network platform is gradually becoming an important mode for foreign language students. Considering the rapid update and iteration of mobile applications and the popularity of novel artificial intelligence technologies such as ChatGPT, this study aims to explore the current situation of English major students' usage of English learning tools, investigate the specific method of using different software, and briefly analyze their advantages and disadvantages in combination with pedagogical theories. The research combines quantitative and qualitative research patterns, with questionnaires and interviews as the main operating methods. The main participants were 34 students from Shandong University's Class of 2020, majoring in English oriented in business. The finding suggests that contemporary English majors have a high use rate of English learning tools, mainly focusing on online learning platforms, artificial intelligence technology and dictionary apps; However, the number of users of exam-oriented apps and oral communication software is relatively small. According to the analysis of corresponding pedagogy theories, those learning tools based on constructivism are more popular than the software based on behaviorism. Moreover, a small minority of software are not favored by students because of their own limitations. It is important to note that our study has some limitations, in terms of small sample size and restricting to English major students. Future research should involve a more diverse sample to better understand the impact of the various English learning tools on students' critical thinking skills.

Keywords: College students, Mobile App, English learning

1. Introduction

With the popularization of mobile technology and the explosion of apps, Chinese college students can use mobile apps to improve their English ability [1]. Nowadays, the application software and network platform on the market seem to play an important role in foreign language learning. For example, word software in the mobile application market can help students increase their vocabularies

and news software can help them improve their reading ability. The advent of online platforms such as MOOCs and ChatGPT has expanded the number of ways students can practice foreign languages.

A report by Xinhua News [2] demonstrated that more than 50 percentage of college students in China spent over three hours a day on various applications using mobile devices, and their main purposes of using those apps were entertainment (28.1%), communication (22.1%) and learning (26.2%). The report's survey also revealed that the main way college students use apps to learn is to download apps about learning materials, accounting for 37%. It could be seen from this report that it may gradually become normal for Chinese college students to use mobile apps for learning. For language learners, whether they can obtain sufficient and effective language resources is the key to their success in acquiring a foreign language. The popularity of a large number of apps just meets the needs of foreign language students. Mutiara, Zuhairi and Kurniati [3] said that online resources or web materials are important resources for distance learners to achieve effective learning. Not only that, some scholars believed that online resources bring an easy way to knowledge that is useful and relevant [4]. Alexander [5] considered that using online resources has the function to improve the quality of learning, increase the chance of accessing to education and training, reduce the expenditure consumed on education and facilitate the effectiveness and efficiency of education. In a word, using mobile apps have a positive effect on English learning [6]. The scholar convinced that college students in China are qualified and enthusiastic users of mobile devices, so they can rely on internet-based or assisted language learning to conduct independent language learning and academic writing [6].

In recent years, with the increasing combination of application software and English learning, research fields such as Mobile-Assisted Language Learning have emerged. Mobile-Assisted Language Learning (MALL) focuses on the use of mobile technology in language learning [1]. To be specific, MALL can be viewed as an ideal solution to language learning barriers in terms of time and place [7]. For instance, it provides students the opportunity to connect to anteriority learned knowledge, acquire new knowledge and further develop problem-solving skills [8,9]. According to Liu and He's [1] researches, the MALL can not only enhance students' English ability, but also increase students' learning motivation. Seemingly, it is helpful and efficient for college students using mobile devices to learn English by themselves.

Furthermore, technological innovation is also driving the progress of students' learning styles. Intelligent chatbots, ChatGPT, for example, have caught the attention of language educators because they can interact with learners in their target language instantly and realistically [10,11]. AI-powered chatbots can provide linguistic input and daily conversation practice [12], stimulate language learners' interest [13], and contribute to their overall growth [14].

However, although previous studies have discussed the significance of miscellaneous application software and artificial intelligence for students to learn foreign languages, with the upgrading of diverse software and the increasing popularity of artificial intelligence, there is a lack of research on the current situation of the use of various software by English majors. Moreover, little research has been done to specifically understand how students use software and analyze its effectiveness through pedagogical theory. Therefore, this study intends to explore the current situation of contemporary English majors using software or artificial intelligence to learn English, and to investigate their specific strategies of using software through interviews. Finally, on the basis of pedagogical theories, the advantages and disadvantages of different kinds of software can be roughly analyzed.

2. Methodology

This study explores the use of English learning tools by college English majors. Next, methodological approach, sampling and participants, data collection and analysis will be introduced.

2.1. Methodological Approach

In order to deeply understand the actual situation of college English majors using software to learn English and analyze the advantages and disadvantages of different kinds of software, the study combined quantitative research and qualitative research. Quantitative research would collect data in the form of questionnaires, which can accurately and objectively collect direct data on what software students use to learn English; Moreover, this paper will use interview as a qualitative research method. Qualitative research approach enables a comprehensive understanding of the subjects' perspectives, so as to conduct a more sophisticated analysis of students' diverse learning styles when utilizing different software and evaluating their strengths and weaknesses. The multi-method strategy in this paper was conducted through questionnaire and semi-structured interview to collect multiple data.

2.2. Sampling and Participants

A cluster sampling strategy will be first employed to select college students who are in school and majoring English. This type of sample can be used to represent a very large target population with a relatively small sample, so that researchers can save time, money and effort. To be eligible for the study, participants need to have the ability to use several software or have the awareness to understand the function of the software but not choose to use it. This purposeful selection of participants will aim to ensure the validity of the data and to help answer research questions during interviews.

In the first step of this study, the questionnaire survey, the main participants were 34 students (N=34), mainly aged 21 to 22 years old, from Shandong University's Class of 2020, majoring in English oriented in business. As foreign language majors, they have all come into contact with different English learning software and have formed their own unique English learning system. In view of the fact that they have possessed the capacity to independently acquire language and evolved into learners with autonomous discernment of diverse learning tools and methodologies, they are representative in this study.

Based on the data received from the questionnaire, participants would be divided into five or six groups, before the interview. The groups represented different preferences for different applications or AI. Then, one participant from each group would be randomly selected for a semi-structured interview. Therefore, five or six participants in the cohort of 34 students would undertake the second phase of the research. Given that the participants were randomly selected within the groups after sorting through the Phase I data, their responses were considered valid and representative.

2.3. Data Collection

Data collection of the study was divided into two stages. In the first stage the quantitative data was collected through online questionnaire program. This instrument would be administered to all participants in the study to assess extent in using application software or artificial intelligence in English learning. The study used Wenjuanxing, a professional online survey platform, to design the questionnaire. The first part of the questionnaire collected the basic information of the participating students. The following questionnaire was divided into five sections, each representing a type of application software or artificial intelligence. Each section had five specific software names, which participants would choose based on their actual usage. Each section was followed by an open-ended question that students could enter into the answer box if the software or AI platform they were using was not mentioned in the options. Quantitative research can present intuitive data, which can be used to reflect the current situation of software use by English majors.

After ensuring the effective collection of most of the questionnaires, the study stepped into the second stage. Several students participating in the questionnaire survey were selected to conduct semi-structured interviews separately to collect the detailed qualitative data. The overall process of the

interview and its general framework was the same. But the specific questions and question formulation details can be flexibly adjusted depending on the answers of the students. Semi-structured interviews allow for flexibility, enabling participants to express their experiences and feelings freely while ensuring the research questions are addressed consistently across all interviews. The specific contents include: The reasons of why student prefer to use certain kinds of software or artificial intelligence to learn English; How they make use of the software; Let them to briefly evaluate the advantages and disadvantages of the software or artificial intelligence technology they are familiar with. With the permission of the interviewee, the contents of the interview would be recorded in the form of audio recording.

2.4. Data Analysis

The collected data was analyzed while ensuring the confidentiality and anonymity of the participants' questionnaire responses. Quantitative data analysis involved the use of descriptive statistics to analyze the questionnaire feedback data. To be specific, the quantitative data collected through the questionnaire was exported and organized according to each participant's choice, and then imported in an excel sheet for calculation. There was total 34 data. Each data respectively responded to 5 sub-scales. The differences between each sub-scale were analyzed and depicted through the method of descriptive statistics.

The interviewees' responses were recorded and transcribed into specific texts for analysis. In these texts the researchers analyzed in depth the attitudes, emotional dispositions, and specific information expressed by the respondents in the content of the texts, and divided the content of these texts into five different sub-themes, with each sub-themes divided into two aspects, the specific using strategy of different kinds of applications or artificial intelligence by English majors and the advantages and disadvantages of those various software. This paper analyzed the practical problems and specific situations encountered by English majors when using applied software and artificial intelligence, and then puts forward some suggestions for English majors to use software to acquire English according to the advantages and disadvantages of different software.

3. Results

3.1. The Current Situation of Contemporary English Majors Using Software or Artificial Intelligence to Learn English

According to the data analysis of the recovered questionnaire, in general, the proportion of English majors using application software or artificial intelligence to learn English is extremely high. All participants had used some kind of English learning applications to improve their English ability. Among them, the proportion of using network platform is the highest and the number of users of oral communication software is the least. The specific data is shown in Table 1 below (the questionnaires are handed out and 34 of which are collected back, while 34 of which are regarded as valid).

Table 1: Descriptive Statistics of Students' Software Usage (N=34)

	Searching Words	Exam-oriented APPs	Network platform	Oral communication	Artificial intelligence	Never use
n	32	15	34	11	24	0
Proportion (%)	94.12	44.12	100.00	32.35	70.59	0

The data presented in Table 1 demonstrates that all business English majors in 2020 utilized online learning platforms. The second most prevalent type of application software employed was for searching words (94.12%), followed by artificial intelligence (70.59%) and Exam-oriented APPs (44.12%). A smaller proportion of students utilized software for communication (32.35%). It is noteworthy that none of the subjects reported never using application software or artificial intelligence programs, indicating the widespread adoption of mobile learning applications and their significant impact on English majors. Regarding the factors influencing the differential usage of various types of software, the author posits a correlation with environmental conditions, professional curriculum, and learning objectives. For example, all 34 students have used online platform software because the application software, Chinese University MOOC, is required for the courses of Business English major in Shandong University. More impactful, every student has used online platform software because the school needed Tencent Conference for teaching during the epidemic period. In addition, based on different learning goals, students choose to use different APPs. To be specific, students with English language test goals will choose software for memorizing words and applications for developing English skills for the test. Furthermore, with the maturity and popularity of artificial intelligence technology, more and more students try and integrate this kind of technology into their English learning strategies. To sum up, there are sound reasons to believe that English major college students use application software and network platforms to assist their language learning to a high degree, and many of them incorporate new artificial intelligence technologies into their English learning methods.

3.1.1. The Specific Usage of Various English Learning Tools

In this section, the specific software usage of the 5 types of English learning tools will be quantified. Table 2 shows the specific situation of business English majors' usage of the above five types of English learning tools.

Table 2: The Usage of Five Types of English Learning Tools

	Applications	n (N=34)	Proportion (%)
APPs for searching words	Oxford Dictionary	18	52.94
	Youdao Dictionary	21	61.76
	Collins Dictionary	12	35.29
	Webster's Dictionary	9	26.47
	Fanyi.baidu	9	26.47
	Other	3	8.82
	Never	2	5.88
Exam-oriented APPs	Baicizhan	9	26.47
	Bubei APP	12	35.29
	Xiaozhan TOEFL (IELTS)	6	17.65
	Pigai.org	15	44.12
	Grammarly	14	41.18
	Other	8	23.53
	Never	17	50.00

Table 2: (continued)

Usage of Network Learning Platform	MOOC	34	100.00
	Tencent Conference	34	100.00
	China Daily	9	26.47
	BBC	13	38.24
	Youku, Bilibili, etc.	19	55.88
	Other	0	0.00
	Never	0	0.00
Usage of APPs for Oral Communication	Tandem	2	5.88
	OmeTV	7	20.59
	Conversation Exchange	2	5.88
	Talk Times	3	8.82
	Hello Talk	3	8.82
	Other	0	0.00
	Never	22	64.71
Usage of Artificial Intelligence	ChatGPT	24	70.59
	You chat	1	2.94
	GitMind AI	7	20.59
	Notion AI	2	5.88
	Deepl	4	11.76
	Other	0	0.00
	Never	10	29.41

Searching words APPs are almost the essential tool for English majors. Students can rely on mobile dictionary software to quickly search the meaning of strange words when they encounter in reading process. As shown in Table 2, almost every English majors use dictionary software, which is favored by most English majors basically because of its convenience and efficiency. Based on the characteristics of different dictionary software, Youdao Dictionary was the most frequently used among the participants, followed by Oxford Dictionaries and Collins Dictionaries.

Exam-oriented APPs mainly include those applications used for specific test, which mainly take the form of practicing. Users often can receive corresponding learning suggestions after the practice. For students, their use of such applications has a strong pertinency. For example, students who have the requirements of TEM-4 will choose the appropriate application software according to the question type; English majors with IELTS or TOEFL test goals will use software designed for IELTS and TOEFL test preparation. Table 2 illustrated that the exam-oriented APPs used by English majors is relatively scattered, and half of the participants have never used such apps. Given the strong pertinency of such apps, it is highly likely that those students who do not have the required tests or language proficiency assessments will not use. Moreover, the different types of goals that students need may also make the data more fragmented.

Network learning platform includes Internet teaching platform, online teaching platform and various comprehensive application software. According to the data in Table 1, all participants have used the e-learning platform. Because of the peculiarities of mobility and location-free nature, such apps have become almost the primary way for university teachers to teach and students to study themselves during the past three years of the pandemic. From the data in Table 2, we can see that all

participants have used Chinese University MOOC and Tencent Conference. The main reason is that the MOOC platform is a part of the major curriculum and students are required to take relevant courses on their own on the website. Moreover, with the improvement of pedagogical methods, new teaching models, such as flipped classroom a, have emerged in college courses. In this new model, for example, MOOC platform plays an important role. In addition, due to the rapidly increase in the number of online courses caused by the college's management during the epidemic period, Tencent conference has also integrated into the learning pattern of students. Coupled with the popularity of various resourceful applications, more and more tools or strategies can be used by English majors to learn English.

Oral communication application software includes international video interactive platform and oral training apps. Based on the data in Table 1, the number of students using oral communication learning tools accounts for the least, which can implicate that nowadays English major college students do not practice and attach enough importance to oral English, which may also be related to the lack of maturity of such software or network platforms. According to the data expressed in Table 2, more than half of the participants have not used oral communication tools, which means that fewer English majors use software for oral practice. Considering that the curriculum of English majors in Chinese universities does not have high requirements for students' spoken ability, the low number of students using such apps may be explained. In addition, oral communication software may also have its own limitations, so that they may not very useful for English learners.

AI platforms include intelligent chatbots like ChatGPT and apps like GitMind AI that help students sort through their notes. Table 2 demonstrates that many English learners use AI technology, but most users focus on ChatGPT, which means that even the popularity of AI technology among English learners is concentrated in conversation as well as academic fields. The large size of the ChatGPT database and its ability to give learners the academic domain knowledge they need may be one of the reasons for its high usage. Moreover, ChatGPT also has the functions of document reading, language polishing and so on. Therefore, for English learners, ChatGPT is a new attempt and practice in their language learning methods.

3.1.2. The Influence of Various Learning Tools on English Majors

In this section, the aforementioned five types of English learning tools will be analyzed their pedagogical methods based on interview records obtained from participants. By organizing and analyzing these records, a concise analysis can be conducted regarding students' utilization of different tools and their process of acquiring English proficiency.

Dictionary software is favored by most students basically because of its convenience and efficiency. The interview record of Student A also confirms this view:

I use the Oxford Dictionary to search strange words, which I always use in class and assignment. After searching for words, the software will not only give the Chinese meaning and English interpretation, but also the distinction of parts of speech, synonyms, cognates, etymology and other information, as well as example sentences to familiarize me with word usage... (Student A)

This quote shows specific uses of lexicographic software. The online dictionary gives students relevant information about the words, and students construct themselves on the basis of their own understanding, which is related to constructivism. Students may reap and harvest the maximum benefits and internalize knowledge independently if they use constructivism as the leading learning strategy. This may be one of the reasons for the high proportion of such applications.

The exam-oriented application software has strong pertinence. According to the feedback of the interview, the reason why more students use the Pigai.org and Grammarly.com is that the professor

in college has recommended these two websites during school classes, so that the number of students who use such online platform is higher than other apps. Student B, a student who has used the Pigai.org for learning, introduced the operation and learning mode of the website in the interview:

Pigai.org is a website used for learning and revising essays. The operation method is actually very simple, just copy the article you have written into the website, the platform will automatically modify your article. The content of the revision includes the specification of grammar, diction, phrases, clauses, etc. (Student B)

The quote demonstrates how to use and learn from the Pigai.org, that is, this platform is a website to help students improve their writing competence, students can learn the skills of English writing from the revised articles. Centering on students' independent learning, the network platform provides students with tips and suggestions for improvement, and students need to summarize and internalize by themselves. However, since the Pigai.org does not provide the teaching courses, the students' self-construction process may encounter obstacles. Student B made a similar point:

Pigai.org only presents the revised text, and the subsequent process have to be conducted and mastered by students themselves. For some advanced words or phrases prompted by the website, we can choose to memorize them directly. However, for some syntactic structures or writing ideas, the platform cannot explain clearly to us. If we don't understand, we won't be able to use it properly in our following independent writing. (Student B)

According to Student B's interview record, the guidance given to students by Pigai.org is not comprehensive enough. For the cultivation of writing ability, students need to master the skills of refining ideas, but the network platform actually has deficiencies in this aspect. Websites can only provide resources for students to learn and construct on their own, however, the effectiveness will vary depending on the degree of acceptance and understanding of students. In addition, the author tried to use other skills training apps, which operate in much the same way as Pigai.org. Such type of applications can help students identify problems and provide resources to further improve their English skills, but the effectiveness of using them may vary due to the different capacity of students.

Network learning platforms have almost become the main way for university teachers to teach and students to study themselves during the past three years, with the peculiarities of mobility and location-free nature. Besides, because it has the characteristics of promoting students' self-learning and self-construction, the learning mode of network platform may relatively effective. Student C briefly introduced the usage of MOOC platform in the interview:

The MOOC platform is mainly used because of the school curriculum management. For example, the interpretation class adopted the flipped classroom teaching method in this semester. We needed to watch videos on the MOOC platform and learn relevant knowledge before class, and then practice the interpreting skills or methods described in the online course in class. (Student C)

The quote demonstrates that the MOOC platform embodies a constructivist approach, wherein students engage in self-directed learning as the central mode of instruction. In the process of using such network platform, students are the main body of cognition, the center of the whole class, and the active constructors of meaning construction, which fits with the core definition of constructivism. Xu [15] demonstrated that students are active constructors of meaning, the leader and controller of the learning process while teachers only assist students in developing their autonomous learning. Therefore, learning strategies of using online platforms are reasonable to a certain extent under the framework of constructivism, allowing students to construct meaning individually and socially.

Oral communication applications or web platforms may not be widely used because of their irreducible defects. Student D, who has tried OmeTV website, stated:

OmeTV is a global video chat platform where you can choose to talk with other users in different regions. My original intention is to improve my oral English through OmeTV, but the site didn't actually cultivate my spoken English. First of all, I met very few people who spoke English well, because the people there were almost from Asian; Secondly, even if I meet someone who is good at spoken English, they may not willing to help me practice, because they are probably just talk for fun, rather than seriously teach something. (Student D)

The interview record of the student suggests that oral communication applications or network platforms do little to improve their oral English ability, which may be another reason for the low number of users. Analyzing the learning mode of oral communication software, the author finds that they may be based on the process of observing and imitating others. Such learning pattern can be explained by Bandura's social learning theory. The theory highlights the role of cognitive processes in shaping human behavior and suggests that people learn not only from direct experiences but also by observing and imitating the behaviors of others [16]. However, even when websites like OmeTV provide a platform for college students to imitate and learn from those foreigners who speak English as their native language, they don't really work because of the discontinuity and spatial limitations.

The efficiency and potency of artificial intelligence such as ChatGPT is recognized by most English language learners. Student E, who regularly uses ChatGPT for assisted English language learning, stated:

The pattern of utilization of ChatGPT is very simple, students just need to enter the question in the dialog box, then the software will directly give us the answer we want to know. To be specific, in order to answer academic questions, ChatGPT, thanks to its large database, can store countless scientific data and provide concise answers to the questions we enter. Taking literature search as an example, ChatGPT can instantly generate several literature articles in the field we want to know. In this regard, artificial intelligence technology can give foreign language learners a lot of assistance in academic aspects. (Student E)

This quote confirms the utility of artificial intelligence for foreign language learners. ChatGPT has the language communication system required by language learners, as well as the function of literature retrieval and theory introduction required by academic researchers. Artificial intelligence technology is a learner-centered pedagogical method, because students need to understand and summarize knowledge by themselves, and then raise some questions based on their own confusions. Due to the independence of each student's thinking patten and the different acceptance of different knowledge, the confusion of students in learning must vary from person to person. However, the advantage of artificial intelligence is that it can provide reasonable answers to students' unique problems. Therefore, we have reason to believe that AI platforms are beneficial to the independent construction of knowledge by English learners.

4. Discussion

According to the data from the questionnaire survey and the interviews with students, the research finds that nowadays English majors basically use mobile learning tools such as mobile phone applications and artificial intelligence technology to learn English. Specifically, the users of network platform are the most, and all subjects claim to have used some of the platform for English language learning. The second and third is those APPs for searching words and artificial intelligence, which are recognized by most English learners because of their efficiency and convenience. However, the number of people who use exam-oriented APPs and oral communication applications is relatively small, which may be due to its strong pertinency and its own limitations.

Moreover, it is not difficult to find that most English learning tools are student-oriented, that is, constructivism as the basis of teaching theory. The goal for constructivism is to nurture the learner to

investigate the topic. Students should revisit their beliefs about the topic and acquire new information that might help him or her more deeply understand the topic. Piaget [17] believed that children had to construct knowledge for themselves (not simply receive and process it from the external world). He also believed that this construction happened in their mind. Although constructivism has spawned many branch theories in its development stage, it has been widely applied by teachers and students in education and learning strategies. Similarly, when English majors choose suitable English learning tools, those application software or artificial intelligence technology guided by constructivism theory, such as network learning platform and dictionary software, are more favored by learners.

On the other hand, applications based on behaviorism are not widely accepted by most students. Take memorizing word APPs like Baicizhan in exam-oriented APPs as an example, it seems that the software is designed to assist students to memorize words by repeating and stimulate their motivation by accumulating rewards. However, this behavioristic approach of repetition and reward does not seem to lead to deep understanding. Even worse, the effectiveness of learning is expected to be reduced if the repetition process is stopped. In fact, most exam-oriented APPs, with the exception of some writing websites, run this way. This may be one of the reasons why English majors use this type of software less often.

Furthermore, oral communication applications or web platforms can be explained by Bandura social learning theory. The theory suggests that behavior is influenced by both environmental factors and cognitive processes. It highlights the importance of social interactions and modeling in learning and behavior development [16]. To be specific, Bandura identified a four-step process in observational learning: attention (paying attention to the model), retention (remembering the observed behavior), reproduction (recreating the observed behavior), and motivation (being motivated to imitate the behavior based on its outcomes) [16]. However, although many scholars acknowledge the validity of Bandura's social learning theory, there are still some limitations in the application of learning tools. For example, neither oral communication apps nor such web platforms have the properties of reinforcement and self-efficacy. Therefore, students' motivation to repeat learning may not be strong enough. Secondly, the environmental sample size provided by online oral practice tools is relatively small, that is, it is impossible for students to fully integrate into another language society by relying on mobile platforms. As a result, the utility of the two processes of students' observation learning and modeling will be dramatically weakened, which may lead to the imperfection of students' self-construction system.

References

- [1] Liu, Q., & He, X. (2015). *Using mobile apps to facilitate English learning for college students in China*.
- [2] Xinhua News, http://news.xinhuanet.com/politics/2011-01/18/c_12992252_2.htm
- [3] Mutiara, D., Zuhairi, A., & Kurniati, S. (2007). *Designing, developing, producing and assuring the quality of multi-media learning materials for distance learners: Lessons learnt from Indonesia's Universitas Terbuka*. *Turkish Online Journal of Distance Education*, 8(2), 95-112.
- [4] Nichols, M. (2003). *A theory for eLearning*. *Journal of Educational Technology & Society*, 6(2), 1-10.
- [5] Alexander, S. (2001). *E-learning developments and experiences*. *Education+ Training*, 43(4/5), 240-248.
- [6] Conroy, M. A. (2010). *Internet tools for language learning: University students taking control of their writing*. *Australasian Journal of educational technology*, 26(6).
- [7] Miangah, T. M., & Nezarat, A. (2012). *Mobile-assisted language learning*. *International Journal of Distributed and Parallel Systems*, 3(1), 309.
- [8] Liu, T. Y., Tan, T. H., & Chu, Y. L. (2009). *Outdoor natural science learning with an RFID-supported immersive ubiquitous learning environment*. *Journal of Educational Technology & Society*, 12(4), 161-175.
- [9] Liu, M., Navarrete, C., Maradiegue, E., & Wivagg, J. (2014). *Mobile learning and English language learners: A case study of using iPod touch as a teaching and learning tool*. *Journal of Interactive Learning Research*, 25(3), 373-403.
- [10] Fryer, L., Coniam, D., Carpenter, R., & Lăpușneanu, D. (2020). *Bots for language learning now: Current and future directions*.

- [11] Lee, J. H., Yang, H., Shin, D., & Kim, H. (2020). *Chatbots*.
- [12] Huang, W., Hew, K. F., & Fryer, L. K. (2022). *Chatbots for language learning—Are they really useful? A systematic review of chatbot-supported language learning*. *Journal of Computer Assisted Learning*, 38(1), 237-257.
- [13] Fryer, L. K., Ainley, M., Thompson, A., Gibson, A., & Sherlock, Z. (2017). *Stimulating and sustaining interest in a language course: An experimental comparison of Chatbot and Human task partners*. *Computers in Human Behavior*, 75, 461-468.
- [14] Kim, N. Y. (2019). *A Study on the Use of Artificial Intelligence Chatbots for Improving English Grammar Skills*. *Journal of Digital Convergence*, 17(8).
- [15] Xu, Z., & Shi, Y. (2018). *Application of constructivist theory in flipped classroom-take college English teaching as a case study*. *Theory and Practice in Language Studies*, 8(7), 880-887.
- [16] Bandura, A., & Walters, R. H. (1977). *Social learning theory* (Vol. 1). Prentice Hall: Englewood cliffs.
- [17] Piaget, J., & Cook, M. (1952). *The origins of intelligence in children* (Vol. 8, No. 5, pp. 18-1952). New York: International Universities Press.