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Usefulness, Ease-of-use, and Acceptance towards Generative AI in Language Learning of Non-Language Majors: A TAM-based Study

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***Abstract*—** *This study offers to investigate non-language major college students' perceptions concerning Generative Artificial Intelligence (GAI) in terms of its usefulness, ease of use, and acceptance in language learning through a questionnaire survey grounded in the Technology Acceptance Model (TAM). A total of 213 engineering college students participated in the study who are in international programs. The findings of the study indicated that the majority of the respondents highlighted a positive perception towards and acceptance of GAI in language learning. Specifically, 60.09% of the students strongly agree that GAI helps them complete tasks faster and also believe that performance is more effective and productive. In addition, in terms of ease of use in GAI language learning, students strongly agree with ease of use, believing that their interaction with GAI is clear and easy to understand, with an overall average of 51.96%. The results also revealed that non-language majors would recommend the use of GAI in language learning (55.87%), that students have accepted the use of GAI to the extent of using it every day, and are resolved to continue the use of GAI in learning languages.*

I. INTRODUCTION

In our daily lives, utilizing other individuals' languages is vital. An increasing number of individuals are starting to focus on second language acquisition to enhance their communication abilities, as exemplified by Hedman and Magnusson (2022) in Sweden, who suggested fortifying students' multilingual learning capabilities to better adapt to the progression of globalization. In the field of language learning, English is the lingua franca of academics and dominates the global language (Rose et al., 2022), which makes more and more non-native English-speaking countries request the choice of English as a second language to learn. In one survey, Afghan undergraduates not only generally showed a more positive attitude towards learning English (Orfan & van de Weijer, 2020), but also showed the versatility of English and its important value in education. Therefore, learning English as a second language is a reasonable option for non-native English-speaking countries from a more international perspective.

With the development trend of globalization and the requirement of a second language, studying abroad has become the training direction of most international colleges, which allows students to learn about the local culture and improve their language skills (Cullinan et al., 2022). This training direction makes the students at the International Engineering College (IEC) different from ordinary undergraduates in terms of English learning requirements, especially in the aspect of courses. The English courses for ordinary undergraduates mainly focus on the training of English topics, which is more inclined to the examination aspect, while the IEC students mainly focus on the individualization and all-round development of English ability, from listening, speaking, reading, and writing, which are more conducive to students studying abroad.

Such higher requirements mean that IEC students need more effective methods to solve learning problems in English.

OpenAI's launch of ChatGPT at the end of 2022 represented a significant advance for the technology in the field of text generation, while 2023 became a pivotal year, often considered a breakthrough period for generative artificial intelligence (GAI). Technically, GAI refers to artificial intelligence systems capable of producing human-like outputs, such as text, images, and conversational interactions. The development of generative artificial intelligence (GAI) has generated great interest and discussion in various fields, including education, which has also reasonably become the tool that some IEC students choose to use in English learning. In addition, with the improvement and progress of science and technology, the field of Artificial Intelligence in Education (AIED) has developed significantly in the past 25 years (Roll & Wylie, 2016), where GAI has a huge advantage in language processing. Unlike traditional language learning tools, which typically rely on pre-programmed content and exercises, GAI is an unsupervised or partially supervised machine learning framework that uses statistics and probability to generate outputs (Grassini, 2023). In addition, GAI uses generative modeling and deep learning (DL) to produce a variety of content at scale from existing media such as text, graphics, audio, and video (Jovanovic & Campbell, 2022). This ability opens up new possibilities for engaging in immersive learning experiences, enabling students to interact with AI instructors, practice conversational skills, and receive immediate feedback. Specifically, the wide variety of advantages demonstrated by GAI include the ability to reduce time and increase the speed of learning, provide learners with a personalized learning experience, and introduce them to other cultures (De La Vall & Araya, 2023). Additionally, GAI demonstrates numerous potential applications within the realm of education and learning, functioning as a versatile tool that can serve as a learning aid, writing aid, and research aid (Liu et al., 2023). As Oke et al. (2023) point out, GAI has been shown to be beneficial in foreign language classrooms because of its strong content generation capabilities and its reasonable use. Specifically, by utilizing AI tools, students can read course material repeatedly until they reach a deeper level of understanding. This repetition ensures that students can grasp and understand the content even without direct guidance from the teacher. Concurrently, for the acquisition of foreign language speaking skills, the integration of AI-based voice recognition technology (speech learning systems) with conversational learning systems has been shown to provide significant support (Oke et al., 2023). In some instances, students exhibit greater flexibility in their use of Generative Artificial Intelligence (GAI), as their application of GAI extends to various aspects of language learning. In group discussions on language learning, students sometimes use artificial intelligence tools to generate answers related to target vocabulary, making them more efficient in discussions with peers (Fer et al., 2024). In a classroom setting, generative artificial intelligence (GAI) can also be applied to tasks such as language translation, paragraph generation, and essay writing. According to a study conducted by Johnston et al. (2024) involving students from the University of Liverpool, many of the surveyed students reported utilizing GAI for proofreading, answering foundational knowledge questions, enhancing their writing skills and vocabulary, and learning grammar. In a similar study conducted by Yang et al. (2023) with Engineering students at a university on their dependence on translation software in learning languages, they somehow model their use of similar technological support in language learning. These examples illustrate the diverse purposes and applications of GAI by students. GAI, through its language interaction capabilities, greatly facilitates the language learning process for students.

However, according to Chen et al. (2020), there was a lack of studies that both employed AI technologies and engaged deeply with educational theories. Moreover, despite the enormous potential of GAI for language learning, there has been very limited research on the potential impact of emerging technologies such as artificial intelligence (AI) on the education of non-English major international students and surveys of their inclusion and acceptance by university students (Wang et al., 2023). Relevant research needs to be further carried out, which also gives the future research direction of language learning in the information age.

Therefore, this study aims to understand non-language major college students' views on the usefulness, ease of use, and acceptance of generative AI in language learning through a questionnaire survey based on the Technology Acceptance Model (TAM), which considers perceived usefulness and ease of use as key determinants of technology acceptance. This paper attempts to explore the students' attitudes towards integrating GAI into the language learning experience.

II. LITERATURE REVIEW

In recent years, the field of language education has undergone significant changes due to advances in artificial intelligence (AI) technology (Shahid et al., 2023). In the past two years, there has been a large amount of literature on the optimization of artificial intelligence and language

learning. Understanding past and present research on GAI, as well as related models, helps to better understand the impact of current GAI on the field of language learning. Further, referring to past research on the utility, ease of use, and acceptance of AI can be referential and useful for investigating the current attitudes of non-language majors towards GAI, since GAI technology has changed so fast.

2.1 GAI (Generative AI)

Dwivedi et al. (2021) highlighted that artificial intelligence (AI) has the potential to greatly revolutionize several industrial, cognitive, and societal domains by improving and maybe replacing various human skills and functions. The OpenAI Chatbot (ChatGPT), unveiled to the public in November 2022, stands as a paragon of Generative Artificial Intelligence (GAI). "Generative" refers to a system that can create a new text based on the input it receives (Mondal et al., 2023). Its inception marked a watershed moment in the realm of natural language processing, captivating users worldwide with its unparalleled ability to engage in meaningful, human-like conversations. Because of the capacity GAI has, it has emerged as a promising tool in language learning, especially by offering innovative approaches to teaching and enhancing proficiency in second languages. Chatbots are an illustration of a macro- and micro- level AI (Artificial Intelligence) application utilized in the classroom or even outside to assist students in developing their speaking, reading, writing, and listening skills, among other language-related talents (Gayed et al., 2022).

However, GAI's bottom-level logic for generating dialogue and text is based on machine learning, which determines the bias and inaccuracy of the content it produces. Especially in the field of language learning, which is related to cultural communication, exposing learners to biased information content without discrimination can be devastating. According to Mondal et al. (2023), using GAI in schools could create misleading or factually incorrect information. It could result in students being misled or even denied their education.

This uncertainty is caused by two key factors: the continual development and immaturity of Generative Artificial Intelligence (GAI) technology, as well as insufficient information screening. As a result, GAI may not always provide the most accurate information. Rather than focusing solely on technological advancements, this study focuses on the second reason: users' biases, particularly among language learners, regarding GAI adoption and the importance of cultivating a balanced perspective towards this emerging technology in order to maximize its benefits. Given that GAI's widespread adoption is very new, with only a year since its global ubiquity, there is still a scarcity of research on this topic.

2.2 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is a theoretical framework used to explain and predict how users will accept and utilize a new technology. Based on the Theory of Reasoned Action (TRA), this model was initially proposed by Davis in 1989 and is designed to understand the factors that influence users' adoption of information technology (Davis, 1989). The TAM originated from psychological theories of rational action and planned behavior and has since evolved into a key model for understanding the predictors of human behavior to forecast potential acceptance or rejection of technology (Marangunić & Granić, 2014).

With the increasing use of artificial intelligence, theories adopted by various technologies were used to explain the acceptance of these products. Sohn and Kwon (2020) believe that when using innovative and less valuable products, such as intellectual products based on artificial intelligence, attention to technology touches more than the practical aspect.

In recent years, with the emergence of large language models such as ChatGPT, more and more students have tried to use GAI to study a new language, so it is necessary to pay attention to the acceptance and practicability of using GAI for language learning. In addition, it is essential to continually explore new directions for the future development of GAI language learning and how to refine it for better application in the language learning process. By integrating TAM with GAI, it is important to investigate the most suitable path for GAI development that optimizes the user experience.

2.3 Perceived Usefulness

GAI is unquestionable when it comes to practicality. GAI can help users with language learning in different ways, but at the same time, there are certain limitations. The results of a survey show that about 60% of users believe that GAI can help them improve their writing skills, and most learners believe that GAI can improve their English-speaking skills. At the same time, there is also a large proportion of users who believe that GAI is not conducive to increasing their vocabulary (Ayesha et al., 2023). This study effectively shows that the usefulness of GAI can only be manifested in some aspects, that there may still be shortcomings in other aspects, and that relying solely on GAI is clearly not desirable. At the same time, the usefulness of GAI can be demonstrated not only in language learning but also in daily life. Some GAI users have mentioned that GAI can provide inspiration for their daily lives, such as cooking tips or shopping options. In these respects, GAI has always been

able to demonstrate rationality and creativity. Also, there are even a few people who are willing to consider GAI as a friend (Blanka et al., 2024). These examples show the usefulness of GAI in daily life, and it can be seen that the usefulness of GAI exists in different aspects.

2.4 Perceived Ease-of-use

GAI is generally easy to use. The ease-of-use of GAI can be reflected in different ways. A study showed that users of GAI showed a very satisfied attitude towards GAI compared to the tools they had previously used. Compared to traditional search engines and user forums, GAI users believe that GAI is more capable of collecting information (Blanka et al., 2024). Most people are already quite proficient in using traditional search engines. This shows that GAI is easy to use, which is a valid example of GAI showing its ease-of-use. Likewise, other studies have mentioned that GAI has an overall positive perception of language learning in terms of perceived ease of use and attitudes (Blanka & Seraj, 2023).

2.5 Perceived Acceptance

Different people have different opinions about the acceptance of GAI. A small number of people have low acceptance of GAI, mainly because of niche issues such as browser compatibility issues. However, among those who have low acceptance of GAI, the vast majority of them are first and foremost because of integrity issues. The use of GAI for cheating is a serious problem (Blanka et al., 2024). In the past, a large proportion of the assignments in the teaching process were required to be completed independently. But now, because of the widespread use of GAI, some students use GAI to complete their homework. Most schools will consider this to be deceptive and ban it. In this case, the acceptance of GAI will be lower. Second, convenience is mainly related to ethical and technical issues. One study showed that, 99% of AI chatbots have only been able to answer simple questions. Especially when it comes to some ethical and accuracy issues, it needs to be used with caution (Gutiérrez, 2023). It can also be seen that the development of GAI is still at an imperfect stage and requires further research and development. This is one of the main reasons why some people have low acceptance of GAI. In addition, it is assumed that the ethical and technical issues of GAI will not be discussed for the time being. GAI is a handy tool in many other areas, both in our daily lives and in many other areas, such as education, healthcare, science, and information and communication technology (Blanka et al., 2024). As a result, a large percentage of the population has a high acceptance of GAI. Acceptance of GAI has been mixed, mainly due to personal factors, technical limitations, and ethical factors. This also shows the limitations of GAI.

Overall, the relevant research (Klimova and Pikhart, 2022; Klimova et al., 2023) highlights the positive effects of GAI on language learning, while GAI is also misleading and limited when used in schools (Mondal et al., 2023). In addition, previous literature (Chang et al., 2017) has shown that experienced students tend to have a more positive perception of ease of use, which provides a reliable basis for guessing that non-language majors, especially those with basic knowledge of electronics and computers, are more likely to use GAI tools like Chat-GPT. However, it can be found that the existing research lacks a reliable investigation of the attitude of non-language majors towards using GAI tools in language learning. Therefore, on the basis of the above literature, this study further embarks on a specific perceptual journey, using the Technology Acceptance Model (TAM) for assessment and prediction. This paper focuses on exploring the usefulness, ease of use, and acceptance attitude of non-language majors towards GAI. Meanwhile, research on how to integrate TAM and GAI to enable students to obtain the optimal language learning approach still needs to be explored in the future.

III. METHODOLOGY

3.1 Research Design

The implemented design of the current study was descriptive-quantitative design. The present investigation aimed to investigate the usefulness, ease-of-use, and acceptance towards Generative AI in language learning of non-language learners. Relative to this, studies, such as this, aiming to quantify variables is a quantitative type of investigation (Kothari, 2004). Moreover, it is descriptive due to the employment of simple statistics (limited to mean [M] and standard deviation [SD]) to characterize the mentioned variables (Torres et al., 2021).

Additionally, data gathering was performed through the use of survey questionnaires noted as a classic technique suggesting that collection was performed in a relatively short period of time. On another note, in the investigation no establishment of controlled nor experimental group was done connoting that the study is non-experimental (Torres & Alieto, 2019). The research sample of the study constituted a total of 213 non-language learners of International Engineering College.

3.2 Research Tool and Procedure

To quantify the perception toward GAI in language learning of the respondents an adapted research tool was utilized based on Technology Acceptance Model. In total, the questionnaire consisted 18 items equally divided among the aspects with a Cronbach's alpha score of 0.89. Moreover, the items are answerable with a four-point Likert scale

(ranging from strongly disagree to strongly agree). The items were adapted and modified to suit the context of the present study which focus on non-language learners; thus, the instrument was pilot tested to 30 students who did not form part of the final sampling size. The instrument yielded a reliability score of Cronbach's alpha equals 0.89. The research tools after validation and pilot testing were finalized and digitized via wjx.cn form and the link was distributed using Wechat as the popular used social media. This option was made noted to be practical and wise. Respondents were initially identified and communicated and responses were received in due time for the analysis of the data.

IV. RESULTS AND DISCUSSION

1. What is the perceived usefulness of GAI in language learning?

Usefulness	Strongly Agree (SA)	Agree (A)	Disagree (D)	Strongly Disagree (SD)	Mean
1. Using GAI in the class activities helps me accomplish tasks more quickly.	128 (60.09%)	76 (35.68%)	7 (3.29%)	2 (0.94%)	1.45
2. Using GAI improves my class performance.	120 (56.34%)	76 (35.68%)	13 (6.1%)	4 (1.88%)	1.54
3. Using GAI increases my class productivity.	127 (59.62%)	75 (35.21%)	9 (4.23%)	2 (0.94%)	1.46
4. Using GAI enhances my effectiveness in class.	125 (58.69%)	74 (34.74%)	12 (5.63%)	2 (0.94%)	1.49
5. Using GAI makes it easier to do my homework.	126 (59.15%)	68 (31.92%)	15 (7.04%)	4 (1.88%)	1.52
6. GAI is useful as a student.	135 (63.38%)	70 (32.86%)	7 (3.29%)	1 (0.47%)	1.41
Total	761 (59.55%)	439 (34.35%)	63 (4.93%)	15 (1.17%)	1.48

Through six items, the results in Table 1 show that the GAI is seen favorably in language learning. More than 55% of respondents strongly agreed with each statement, and over 90% of respondents agreed with each question. Notably, 60.09% of respondents strongly agreed that they complete tasks faster when using GAI in class activities. In contrast, 3.29% of students disagree, and only 0.94% of the respondents strongly disagree. Additionally, 56.34% of students strongly agreed that using GAI improves their class performance, and 35.68% of students agreed with that. Similarly, 59.62% of respondents agreed that using GAI increases class productivity, but there are more students who disagree with this statement than the other statements, which reach a 7.04 percentage, and 1.88% of them strongly disagree GAI will help in doing homework. When it comes to GAI's overall benefits to the respondents, 63.38% of them strongly agree. One respondent strongly disagreed with the statement, while seven disagreed and seven agreed, out of the 213 total.

This suggests a high conviction in the value of GAI for learning new languages. When it comes to getting things done, interestingly, over 95% agree that GAI enables them to complete tasks quicker. This shows that students believe that using GAI is valuable to them to be more time-efficient in their workload. Similarly, 92.02% mention that the use of GAI enhances their class performance as well. In their judgement, GAI is undoubtedly a teaching aid that can improve the language abilities of students and enhance communication skills, skills that are prerequisites for educational success.

Although the data does not explicitly measure ease of use, the high levels of agreement and strong agreement (over 55% strongly agreeing to each question) imply that students find GAI intuitive and user-friendly. If the technology were difficult to use, it is unlikely that it would receive such positive feedback. Voss et al. (2023) noted that assistive technologies, such as generative artificial intelligence tools, are now more widely available and are being used extensively in second language classroom teaching and learning. The ease of use is a vital factor because it directly affects how frequently and effectively students can utilize GAI in their studies.

The overall acceptance of GAI is further underscored by the finding that roughly one hundred percent of students consider GAI beneficial to them as a whole. Liu et al. (2024) point out that since late 2022, a variety of powerful generative AI technologies have emerged, which may empower L2 (second language) learners to engage in informal language learning with greater creativity and versatility by using the technology acceptance model (TAM) and collecting a total of 867 Chinese English learners' respondents via an adapted TAM online questionnaire and inviting 20 to attend the post-survey interviews. This overwhelmingly positive reaction implies that students consider GAI as more than just a supplement; they see it as an essential part of their learning process. Furthermore, 94.83% of respondents reported that GAI boosts student productivity in the classroom, implying that it promotes a more productive learning environment.

2. What is the perceived ease-of-use of GAI in language learning?

Ease-of-use	**Strongly Agree (SA)**	**Agree (A)**	**Disagree (D)**	**Strongly Disagree (SD)**	**Mean**
1. Learning to use the GAI has been easy for me.	113 (53.05%)	81 (38.03%)	17 (7.98%)	2 (0.94%)	3.43
2. I find it easy to get the GAI to do what I want to do.	109 (51.17%)	83 (38.97%)	18 (8.45%)	3 (1.41%)	3.4
3. My interaction with the GAI is clear and understandable.	107 (50.23%)	84 (39.44%)	20 (9.39%)	2 (0.94%)	3.39
4. I find the GAI to be flexible in interacting with.	113 (53.05%)	77 (36.15%)	22 (10.33%)	1 (0.47%)	3.42
5. It is easy for me to become skilled at using the GAI.	107 (50.23%)	83 (38.97%)	20 (9.39%)	3 (1.41%)	3.38
6. GAI is easy to use.	115 (53.99%)	86 (40.38%)	11 (5.16%)	1 (0.47%)	3.48
Total	664 (51.96%)	494 (38.65%)	108 (8.45%)	12 (0.94%)	3.42

Statistical results can be derived from the charts. A total of 213 university students participated in the survey and filled out the questionnaire. In addition, more than half of the college students showed strong agreement with each survey question, and only a few participants showed disagreement or strong opposition. First, 53.05% of college students strongly agreed, and 38.05% of college students agreed that learning to use GAI was easy, with a mean of 3.43. Next, 51.17% of college students who participated in the survey strongly agreed that they could easily use GAI to accomplish what they wanted to do and have a mean of 3.4. Not only that, but 50.23% of the participants also strongly agreed that their interactions with GAI were clear and easy to understand, with a mean of 3.39. Obviously, the vast majority of participants agree with the ease of GAI. At the same time, only 10.33% of the college students who participated in the survey disagreed that their interaction with GAI was flexible, and it also had a high mean of 3.42. Also, 50.23% of the college students surveyed strongly agreed that GAI is easy to use proficiently, with a mean of 3.38. Finally, 40.38% of the universities surveyed agreed, and 53.99% of the universities surveyed strongly agreed that GAI is easy to use, with a mean of 3.48.

A detailed analysis will be carried out after the results of the survey are available. The survey surveyed 213 college students, and the questions of the survey mainly revolved around the difficulty of interaction, difficulty of use, and proficiency in the use of GAI. The statistical results show that for each question around the ease of use of GAI, the surveyed college students show a strong attitude towards ease of use, and the statistical average is at a high value. In addition, only a very small number of people believe that GAI is not easy to use and therefore maintain a negative attitude, which indicates that college students believe that GAI is easy to interact with, easy to use, and easy to use proficiently. Such findings are similar to those of another study, although the main group surveyed in this study is doctoral students. Through a variety of analyses, this study shows that Chat-GPT, as one of the typical representatives of GAI, is at a medium to high level in

behavioral intent, attitude, perceived usefulness, and perceived ease of use (Zou & Huang, 2023). This is further proof that GAI is easy to use, not only for PhD students but also for others, including university students, to become proficient in using GAI. As a result, college students can easily use GAI in their language learning. It can be seen from this that GAI has good ease of use.

3. What is the perceived acceptance of GAI in language learning?

Acceptance	Strongly Agree (SA)	Agree (A)	Disagree (D)	Strongly Disagree (SD)	Mean
1. I use the GAI every day in language learning.	95 (44.6%)	57 (26.76%)	56 (26.29%)	5 (2.35%)	3.14
2. I use the GAI for a variety of purposes in language learning.	100 (46.95%)	81 (38.03%)	29 (13.62%)	3 (1.41%)	3.31
3. I am resolved to continue using GAI in language learning.	105 (49.3%)	86 (40.38%)	19 (8.92%)	3 (1.41%)	3.38
4. The use of GAI has a more positive effect in language learning.	107 (50.23%)	92 (43.19%)	13 (6.1%)	1 (0.47%)	3.43
5. GAI is acceptable to use in language learning.	114 (53.52%)	87 (40.85%)	10 (4.69%)	2 (0.94%)	3.47
6. I recommend the use of GAI in language learning.	119 (55.87%)	79 (37.09%)	12 (5.63%)	3 (1.41%)	3.47
Total	640 (50.08%)	482 (37.72%)	139 (10.88%)	17 (1.33%)	3.37

The six items in the table reflect students' acceptance of the application of GAI to language learning. First of all, according to the results, 50.08% of the respondents strongly agree with each question, which reflects that students' acceptance of GAI is very high to some extent. Secondly, we can find that 44.6% of students agree to use GAI every day, and 26.76% agree to use GAI every day, and students have used GAI very frequently. On the other hand, the use of GAI by students is more diversified, and 46.95% of respondents strongly agree with the multifaceted use of GAI. Regarding the continuous use and positive impact of GAI, the proportion of people who strongly agree with it gradually increased, reaching 49.3% and 50.23%, respectively. Finally, regarding the acceptance and recommendation of GAI, the sum of respondents' agreement and strong agreement exceeds 90%, reaching 94.37% and 92.96%, respectively. On the whole, respondents' acceptance of GAI is very high.

Through continuous processing of the results and continuous analysis, more useful information can be obtained. This survey mainly targets college students, and the questions mainly focus on the acceptance degree of GAI among college students. According to the analysis of the results of six questions related to the acceptance of GAI by college students, the acceptance of GAI by college students is generally good. For all questions, the survey results show that the average acceptance of GAI among college students is at a high level, and the acceptance of GAI among students is already very high. However, there are still a small number of people who have not yet integrated GAI into their daily lives, which is the direction of future research efforts, and how to better apply GAI to students' daily language learning processes should be explored. According to Baytak (2023), the study's review of the literature shows that GAIs have been accepted in education but remain in doubt, and despite the incredible interest generated in these GAIs, there is still scepticism about their reliability. This idea coincides with the results of this survey. Although students' acceptance of GAI has been more comprehensive, there are still some attitudes that do not accept GAI. Therefore, it is necessary to conduct specific planning and research on the methods and rules of GAI in the future, so that GAI can better serve students and society.

V. CONCLUSION

This study set out to examine how most students of non-language majors perceive the usefulness, ease-of-use, and acceptance of Generative AI (GAI) in language learning. Overall, the survey results for non-English major IEC

students highlight the positive perception and wide acceptance of GAI in language learning. In the survey on the usefulness of GAI, 60.09% of the students strongly agree that GAI helps them complete tasks faster, and 56.34% of the students think that GAI improves their classroom performance, which indicates that GAI is beneficial and improves their foreign language learning efficiency to some extent. At the same time, in terms of ease of use in GAI language learning, students strongly agree with ease of use, believing that their interaction with GAI is clear and easy to understand, with an overall average of 3.42. Nevertheless, despite the overall positivity, it is noted that 10.88% of respondents disagree with the acceptance of GAI in language learning. More emphatically, among all the negative results of the survey questions, the proportion of people who disagree that use GAI every day in language learning reaches its peak, accounting for 26.29%. It can be inferred that the application of GAI in language learning has not reached a universally applicable level, which also reminds relevant fields that it is necessary to conduct specific research and development on the application methods and rules of GAI in language learning in the future so as to better serve students.

Altogether, this study identified that GAI has become an indispensable part of students' language learning because it does help them seek out the information they want more efficiently and promote their effectiveness in daily learning. However, although GAI is convenient and useful in the learning process, this study points out that further studies are still needed to consider whether students can rely on its help in continued and in-depth learning, depending on whether it can indeed improve their foreign language proficiency.

VI. RECOMMENDATION

Drawing upon the survey results and analysis, this paper presents the following recommendations to enhance and optimize the application of GAI in language learning from three perspectives: students, teachers, and other educational professionals, as well as software developers.

First of all, it is necessary for students to adapt to and accept the development of GAI in the age of information. At the same time, according to the survey of IEC students' acceptance of GAI's ease of use, this paper suggests that students should take the initiative to understand and learn how to use generative AI and carefully read its use tutorial so as to better apply it in language learning and improve the efficiency and effectiveness of learning.

In addition, teachers and related education experts should have a good understanding of the advantages and disadvantages of GAI, master its use methods, and systematically teach students to use it rationally. It is suggested that teachers can combine generative AI in the teaching process to explain interesting knowledge, such as how to use GAI to polish the expression of writing language, so that students can master language knowledge in practice and improve their learning enthusiasm.

Finally, it is recommended that software developers develop and optimize language learning-related functions in a targeted manner and provide specific instructions for learners to utilize. Particularly, the personalized learning experience necessitates further enhancement. Relevant corporate departments should consistently implement the feedback system and promptly collect user suggestions for timely adjustments and optimization.

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