



## Exploring EFL Students' Perception on the Use of Artificial Intelligence (AI) in Enhancing English Language Skills

Novita Mulyana<sup>1</sup>, Gek Wulan Novi Utami<sup>2</sup>, I Gede Neil Prajamukti Wardhana<sup>3</sup>

<sup>1,2</sup>Udayana University, Bali, Indonesia

<sup>3</sup>Dhyana Pura University, Bali, Indonesia

Corresponding author email: [novitamulyana@unud.ac.id](mailto:novitamulyana@unud.ac.id)

### Info Article

Received: 07 Nov 2025

Revised: 28 Apr 2026

Accepted: 30 April 2026

Online Version: 15 May 2026

### Abstract

The rapid development of artificial intelligence (AI) is undeniable, including in learning English as a foreign language. However, the use of AI, in English language learning is still quite controversial. Its use sparks pros and cons among researchers and language instructors. This research is a mixed-method case study adopting the Technology Acceptance Model (TAM) that aimed at exploring undergraduate students' perception on the use of AI tools to enhance their English skills. The data of this study were collected in two stages: (1) by using a questionnaire (n=149) and (2) by conducting semi-structured interviews (n=36). The collected data were analysed using a convergent parallel design. The result of the study shows that the participants are familiar with 21 different AI tools, with ChatGPT as the most frequently used AI tool. It is also shown that there is high degree of Perceived Usefulness (PU) and Perceived Ease of Use (PEoU) from the participants towards the use of AI. However, the participants also expressed significant concerns regarding over-reliance and the potential erosion of critical thinking due to the use of AI. As the result, despite the high degree of PU and PEoU, the students prefer to use AI to support their individual learning activities, rather than relying on it to replace classroom instructions. The results of this study provide a deeper understanding of the psychological drivers underlying AI acceptance and offers specific pedagogical recommendations, such as the integration of AI literacy into the EFL syllabus.

Keywords: Artificial intelligence; EFL learning; students' perception.

*This is open access article under the [CC-BY](#) licence*



### INTRODUCTION

Today, artificial intelligence (AI) technology is developing rapidly. Its presence can assist various human activities in almost every sector, including education. Currently, various types of AI are used in education, including chatbots, machine learning, virtual reality (VR), natural language processing (NLP), and others. One specific area in education where these types of AI are beginning to be used as an aid is in the teaching and learning of English as a foreign language (EFL). Learning a foreign language, especially English, is considered essential and mandatory today (Arifatin & Setyaningrum, 2024). However, as a foreign language, learners naturally face various obstacles in the process of mastering it. Therefore, AI is often used to assist the learning process. However, due to its recent development, its effectiveness in enhancing EFL learners' language skills needs to be evaluated.

Several studies have been conducted to analyse and evaluate the effectiveness of the use of AI in improving EFL learners' language skills. In general, AI is claimed to have a positive impact on the language learning process such as offering a personalized and adaptive learning environment and being an effective

instrument for teachers in providing instruction to students (Arifatin & Setyaningrum, 2024; Syabilla et al., 2023). Several studies show that the use of AI was effective and contributed positive impacts to EFL learners' skills. A study conducted by Alzaharani & Alotaibi (2024), with a pure experimental design, found that the use of ChatGPT improved EFL students' writing skill. Mixed-method research conducted by Apriani et al., (2024) also shows that AI-powered chatbots improve EFL learners writing skill, self-regulation as well as the learners' confidence, motivation, and engagement in the learning process. In alignment with these findings, an experimental study conducted by Etaat (2024) shows that the use of AI application could improve EFL students' writing skill as well as accelerating the writing process. Not only for writing skills, the use of AI in EFL learning process is reported to improve EFL learners' speaking and listening skills. Fathi et al., (2024), in their experimental study, report that the implementation of AI-mediated activities could effectively improve the learners' speaking skill which includes fluency, coherence, grammatical range and accuracy, lexicon, pronunciation, as well as the learners' willingness to communicate. Alrasheedi (2025) in his experimental study revealed that the use of Chatbots and Duolingo enhance the EFL learners' listening comprehension. In terms of reading skill, an experiment study conducted by Yousefi & Askari (2024) shows that AI, particularly ChatGPT, positively contributes to EFL learners' reading comprehension. In conclusion, all of these studies have shown that the use of AI tools in EFL learning process could improve EFL learners' language skills.

Despite its positive impact on EFL learners' language skills, the use of AI application in EFL learning process is also reported to have several drawbacks. The very first concern is the excessive use of AI application could result in over-reliance (Marzuki et al., 2023; Phan, 2023). The second is the use of AI application by EFL students without proper review and guidance could result in plagiarism issues (Apriani et al., 2024; Song & Song, 2023). In addition, it could also contribute a negative impact on the learners' creativity and critical thinking skill (Apriani et al., 2024; Rabehi et al., 2024). It is also reported that AI tools, in some cases, provide inaccurate responses or feedback (Phan, 2023; Rabehi et al., 2024). AI's positive and negative impacts towards EFL learning process and the learners' language skills have torn researchers and language instructors into two sides, one side who agrees that it should be implemented and integrated in the learning process and another who does not. In other words, the use of AI in education, particularly language learning, is often considered controversial (Ananda & Salmiah, 2024).

In the language learning process, to achieve desired learning outcomes, teachers must consider various factors, one of which is the students' perceptions. Students' perceptions refer to students' understanding and interpretation of their learning experiences. These perceptions can also be applied to several aspects, including the learning environment, teachers, teaching methods, learning materials, learning media, and others. These perceptions are formed based on students' personal experiences, backgrounds, and learning styles. By understanding student perceptions, teachers can better design learning processes and even identify areas for improvement (Ananda & Salmiah, 2024). Therefore, understanding students' or language learners' perceptions of aspects of the learning process being designed is crucial. When it comes to the use of AI in language learning, learner perceptions are crucial in determining whether AI is appropriate for the learning process. Therefore, it is essential to analyse and explore the EFL learners' perception towards the use of AI in EFL contexts. Yet, very little has been done to explore and examine EFL learners' perception on its use.

This research is conducted as attempt to fill in the gap of knowledge presented above. Not much research has been done to focus on analysing EFL learners' perception on the use of AI in learning process while it is a crucial element on designing the learning process to achieve the learning outcomes. While previous studies have focused more on the effectiveness of specific AI tools such as ChatGPT in enhancing students' certain language skills, very little is known on the ecosystem of AI usage within Indonesian higher education, especially within English literature programs. Unlike previous experimental studies, this research provides a comprehensive picture of real-world AI usage by university students in their academic lives. The issue is even more important due to the fact that each EFL learner is unique and may possess different characteristics. This research, was conducted in English Literature Study Program, Udayana University, Bali-Indonesia, with two research problems formulated as the following:

- 1) What are the AI tools used by the students to enhance their English language skills?

2) How do the students perceive the use of AI tools in enhancing their English language skills?

In alignment with those research problems, this research is aimed (1) to identify the AI tools that are generally used by EFL students to enhance their English skills, and (2) to analyse and explore the students' perception on its use. By involving university students as participants of the study, this research is expected to provide a deeper understanding of the current controversial issue of the use of AI in language learning especially in higher level of education. Furthermore, the results are expected to serve as a consideration for English teachers or instructors in integrating AI to an EFL learning process.

In order to provide comprehensive explanations to the above research problems and achieve the purpose of the study, especially in exploring students' perception towards the use of AI, this research adopts the Technology Acceptance Model (TAM) proposed by Davis (1989) as the theoretical foundation. This model, according to Turner et al. (2010), is one of the primary frameworks used to understand the drivers of human behaviour in adopting innovative technologies. It is based on the concept that the usage and adoption of technology can be explained by one's beliefs, attitudes, and intentions. There are four internal variables which are assessed in this model, namely perceived ease of use (PEoU), perceived usefulness (PU), attitude toward use (A), and behavioural intention to use (BI) (Turner et al., 2010). Davis (1989) explains that users adopt a certain technology through a three-stage process, namely external system features that trigger cognitive thoughts on usability and usefulness (PEoU and PU), which results in affective attitudes (A) and intentions (BI), which later drives actual usage behaviour. Therefore, among those four, user's perceived ease of use and perceived usefulness can be considered as key variables to explain the reasons why one rejects or accept a technology (Meiryani et al., 2023). PEoU is defined as the degree to which a user believes that using a certain technology would be free of effort, while PU is the degree to which he believes that using the technology would enhance his performance (Davis et al., 1992). In this research, the two factors are the underlying framework to analyse the students' perception in which PEoU deals with the degree to which the students find AI tools or application easy to navigate, and PU deals with the degree to which the students believe AI can enhance their language skills. By using TAM as theoretical framework, this research is expected to bring more than just descriptive report but an understanding of psychological drivers behind EFL students' engagement with AI.

## RESEARCH METHODS

### *Research Design*

The design of this research is mixed methods case study. Creswell (2014) defines case study as a research method that attempt to provide in-depth examination of a single entity within real-world context. He further explained that a case study enables the researchers to explore a phenomenon in detail and comprehensively. Creswell & Creswell (2015) state that mixed methods case study involves the implementation of one or more core research designs within the framework of a single or multiple case study design. The intention is to develop cases in accordance with qualitative and quantitative results and their integration. One example stated by Creswell & Creswell (2015), in a mixed method case study, a researcher could gather data both by survey to gain qualitative data and qualitative interview at the same time, the produces analysis that can be combined to identify or explore a specific case.

This research was conducted by mainly aiming at exploring university students' perception on the use of AI in EFL learning process. The phenomenon of AI usage in EFL context is happening worldwide. However, this research was specifically designed to explore the phenomena in English Literature Study Program, Udayana University, Bali, to be able to provide an in-depth exploration and explanation of the phenomena in the aforementioned institution. The use of mixed method case study design was considered the most suitable design for this research in accordance with the aims that the study expected to achieve. The following figure represents the design of this research.

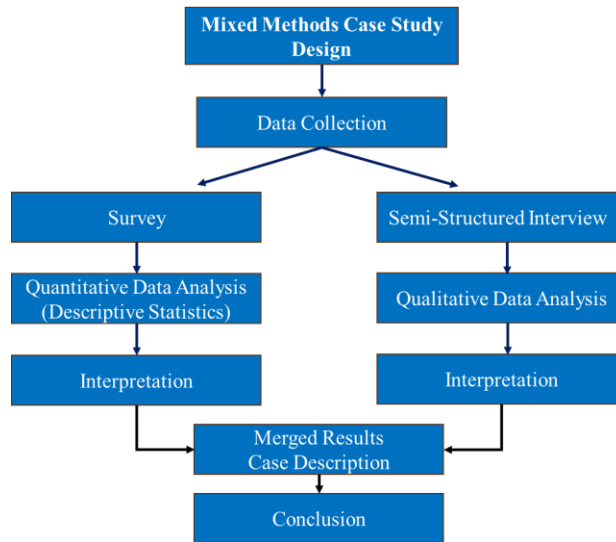


Figure 1. Research Design

As can be seen in the above figure, this research employed two data collection methods: a survey using a questionnaire and a semi-structured interview to explore students' perceptions of the use of AI in learning English as a foreign language. The data gathered from the survey and interview were later analysed, interpreted, and the results of the interpretation were merged to describe the case. In integrating the quantitative and qualitative data, convergent parallel design was employed. According to Sauro (2015), this design is used when data collection for qualitative and quantitative data is done concurrently. In this research, the quantitative data from the survey which use Likert-scale and the qualitative data from the semi-structured interview were collected concurrently which later analysed independently. The results of the analysis were then triangulated in the discussion to identify the convergence or divergence points found in the results. Convergence points are where interview quotes in alignment with or explain statistical trends, while divergence points are shown where students' experiences might contradict the survey results. The research was conducted in the English Literature Study Program, Faculty of Humanities, Udayana University, Bali, in 2025.

### ***Research Target/Subject***

This research was conducted in the English Literature Study Program, Faculty of Humanities, Udayana University, involving 185 students from the 2023/2024 intake, which were divided into six classes. In 2025, when this research was conducted, this cohort of students was in their fourth semester. The reason for selecting this cohort as the research subjects was because, in first to third semesters, students in the English Literature study program, Faculty of Humanities, Udayana University, intensively take courses that specifically hone the four language skills: speaking, writing, listening, and reading. These courses emphasize language practice rather than language theory. Therefore, the students' learning experience during this semester is largely practical, involving exercises and assignments that can improve their language skills. During these three semesters, it is more likely that AI tools are widely used by the students to help them in improving their language skills. Therefore, the fourth-semester students are assumed to be quite familiar with the use of AI during the learning process and are considered the perfect population for the study.

Based on the research design outlined above, there were two phases of data collection: survey and semi-structured interview. The first phase, i.e. survey, was part of the quantitative design that requires calculation on the number of samples needed. The population size of the study is 185 people. Based on the calculation of the number of samples carried out using the Slovin and Cochran formula, with a confidence level of 95% and a margin of error of 5%, the number of samples required with the population size is 126 people. In the survey conducted, 149 out of the population size was obtained. This number exceeded the

required sample size. In other words, the number of responses obtain meet the minimum number of sample size required. In the second phase, namely the semi-structured interview, the selected participants were 36 people, each of which was taken six people from each class and selected randomly. This number meets the number of participants needed based on the qualitative approach taken in the analysis of the interview data.

### ***Research Procedure***

There were several steps taken in the process of collecting the data used in this study as well as in analysing and interpreting the results of the study. As a mixed-method case study, the research was conducted in two phases namely quantitative phase and qualitative phase. The following are the procedure taken in the research:

#### **A. Quantitative phase**

1. Developing the research instruments (questionnaire)
2. Conducting pilot survey by distributing the questionnaire to 35 participants as part of reliability test.
3. Conducting Cronbach-Alpha reliability test on the questionnaire and validity test (content validity by experts).
4. Distributing the questionnaire to the research target.
5. Conducting descriptive statistical test to the data obtained
6. Analysing and interpreting the data.

#### **B. Qualitative phase**

1. Developing the research instruments (open-ended questions in the questionnaire and interview guide)
2. Conducting validity test (content validity by experts)
3. Selecting respondent of the test (random sampling)
4. Conducting the semi-structured interview.
5. Analysing and interpreting the data qualitatively.

After the data obtained from both qualitative and quantitative phases were analysed and interpreted, the results were merged to answer the research questions formulated in this study as well as to draw conclusion.

### ***Instruments, and Data Collection Techniques***

As have been aforementioned, the research used a mixed-method approach, employing two data collection methods: a survey using a questionnaire and a semi-structured interview. Documentation and note-taking techniques were also employed. Using these two methods, two research instruments were used: a questionnaire and an interview guide.

#### **Questionnaire**

The questionnaire used in this study consisted of twenty-one closed-ended questions with a Likert scale and three open-ended questions. The Likert scale used consisted of five value ranges:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree

The questions in the questionnaire were designed to measure several aspects related to perception, namely (1) knowledge of AI, (2) experience using AI, (3) attitudes toward the use of AI, (4) benefits of AI in English learning, (5) challenges and concerns, and (6) preferences regarding the use of AI.

Before being used as a research instrument, the questionnaire was tested for validity and reliability. The validity test was conducted by conducting a content validity test with two expert validators who are experts in the field of teaching and learning English as a foreign language. In the validation test carried out, the draft questionnaire questions received recommendations and several revisions from the validators before finally being declared valid and suitable to be used as a research instrument. After being declared valid and suitable, the instrument was tested for reliability through a pilot test, which was distributed to thirty-five respondents, and the results were tested for reliability using the Cronbach Alpha test, calculated using the formula:

$$r_{11} = \left( \frac{k}{k-1} \right) \left( 1 - \frac{\sum \sigma b^2}{\sigma t^2} \right)$$

Description:

$r_{11}$  = instrument reliability

$k$  = number of statement items

$\sum \sigma b^2$  = total item variance

$\sigma t^2$  = total variance

Based on the calculations performed using the Microsoft Excel application, the questionnaire's Cronbach's Alpha value was 0.9243, with a general threshold value of >0.7. It can be concluded that the questionnaire used as the data collection instrument for this study is a reliable instrument.

### **Interview Guide**

In addition to questionnaires, data collection in this study was also conducted using semi-structured interviews. Creswell (2021) states that in semi-structured interviews, researchers can use an interview guide but also freely dig deeper by asking questions outside the guide, giving interviewees the opportunity to provide broader answers. This method aims to gain a deeper understanding of the research topic, namely students' perceptions of the use of AI in learning English as a foreign language. Referring to the definition provided by Creswell (2021), this study also used an interview guide as a research instrument.

In line with the questionnaire that was prepared, an interview guide was prepared to dig deeper information from the participants regarding several aspects related to perception, namely (1) knowledge about AI, (2) experience of using AI in English learning, (3) attitude and perceptions on the benefits of AI, (4) challenges and concerns, and (5) preferences. The interview guide had been validated previously through a content validation test involving expert validators in the field of language teaching and learning.

### ***Data analysis technique***

This research is a mixed-methods approach and based on the research design described above, this study uses quantitative and qualitative methods in the form of thematic analysis in conducting data analysis. Braun & Clarke (2006) defines thematic analysis as a method for identifying, analysing, and reporting patterns in data. The quantitative method in the form of descriptive statistical analysis was carried out on the questionnaire results obtained, especially on questionnaires that use closed questions with a Likert scale. Descriptive statistical tests were carried out with the help of Ms. Excel. Thematic analysis was then carried out to analyse the qualitative data obtained, namely in the form of statements or information from participants regarding their perceptions of the use of AI in the process of learning English as a foreign language which were obtained both from the open-ended questions from the questionnaire and the semi-structured interview.

## RESULTS AND DISCUSSION

### *AI tools Used by the EFL Learners to Enhance Their Language Skills*

AI is said to have great potential in improving the language learning process due to its ability to provide adaptive and personalized learning experiences (Zakaria & Ningrum, 2023). In the context of language learning, several types of AI tools can be used to assist the learning process, including:

- a. Personalized language learning applications, which use AI algorithms to adapt learning materials to the user's abilities and learning style, for example, Duolingo, Babbel, and others.
- b. Chatbots, which are AI-based applications that can understand and respond to user input, for example, ChatGPT, Gemini, and others.
- c. Pronunciation analysis tools, which are applications specifically designed to improve a user's accent and pronunciation, such as ELSA Speak.
- d. Writing assistants and grammar checkers, which are AI tools that function like assistants and assist users in writing and correct grammar, word choice, and other aspects to improve the quality of their writing. Examples include Grammarly and Quill Bot.
- e. Translator applications, which are AI-based applications that can help users translate text from one language to another, for example Google Translate and the DeepL application.

Based on the analysis of data obtained from the open-ended questionnaire and interviews with participants, several types of AI tools are frequently used by students of the 2023/2024 intake in the English Literature study program, Faculty of Humanities, Udayana University. Twenty-one AI tools were mentioned by respondents in the open-ended questionnaire, and these applications fall into the five AI application categories mentioned above. Some respondents mentioned more than one application that they frequently use. The following table shows the names of the AI tools that respondents mentioned frequently using in the language learning process, along with the number of respondents who used them.

Table 1. AI Application Used by the Respondents

No	AI Apps	Number of Respondents
1	ChatGPT	128
2	Grammarly	43
3	Duolingo	43
4	Gemini	43
5	Perplexity	32
6	Deepseek	19
7	Quillbot	13
8	DeepL	12
9	Blackbox AI	9
10	Google Translate	4
11	Copilot	3
12	ELSA Speak	2
13	Grok AI	2
14	Claude AI	2
15	Cake AI	1
16	Janitor AI	1
17	Promova	1
18	Hello Talk	1

No	AI Apps	Number of Respondents
19	Character AI	1
20	Bing Chat	1
21	Meta AI	1

Based on the data obtained, as shown in the table above, the AI application most frequently used by respondents is ChatGPT, with 128 users, or 88% of the total respondents. This is followed by Grammarly, Duolingo, and Gemini, each used by 43 respondents, or 30% of the total. Perplexity, used by 22% of respondents, and several other AI tools with less than 15% of respondents.

In interviews with the 36 participants, the aforementioned applications were also frequently mentioned by participants in language learning across various contexts. The table below shows excerpts from some participants regarding the AI tools they use in learning English as a foreign language.

Table 2. Interview Excerpts on AI tools Used by the Participants

Data Number	Excerpts
(1-1)	“I’ve used AI since my first semester, for speaking and listening. ChatGPT, Gemini, and Speaking & Listening AI. It can be used to check grammar while speaking and listening. ChatGPT is the most frequently used. (P24)
(1-2)	“Since the beginning of my studies, the AI I used is ChatGPT, I also use Gemini, has been predominantly used ChatGPT. I use it for reading, summarizing and finding key points. For writing, I use it for grammar and sentence development.” (P25)
(1-3)	“I’ve used Blackbox AI, ChatGPT, and Gemini since the beginning of my study. I often use Blackbox AI for writing.” (P29)
(1-4)	“I use DeepL translation to translate. I use Grammarly to improve my grammar. I use ChatGPT voice notes for speaking and listening practice.” (P30)
(1-5)	“Yes, I’ve been using AI since the end of my first semester. I wasn’t familiar with AI at the beginning of the first semester. Now I use Gemini, mostly. I search on Google, and the first thing that comes up is Gemini. I use ChatGPT, but only for grammar checks or DeepL.” (P31)
(1-6)	“I used AI at the beginning of the first semester, ChatGPT+, and I also subscribe to Grammarly. I use it to check grammar. I also use it to study journal articles. If I don’t understand something, I can ask ChatGPT to explain it again, especially for reading comprehension. And for midterm and final exam preparation quizzes. I don’t use it at all for speaking and listening, but I sometimes use it for writing and reading. I ask them to summarize the reading.” (P32)

Looking at the interview excerpts above, all interviewees stated that they had used AI tools in their English learning process, and most began using them at the beginning of their studies, i.e. the first semester. In the context of honing language skills, most interviewees used AI tools to improve their writing skills. For example, they used ChatGPT to help organize ideas when writing, Grammarly to check grammar, as in Data (1-4) and (1-6), ChatGPT and Blackbox AI are used to help the participants develop sentences in writing, and DeepL is used to translate text. Furthermore, several informants used AI tools to improve their speaking and listening skills, such as Data (1-1), who used the voice note feature in ChatGPT to hone these two skills.

The finding of the research shows that the most commonly used AI tools among the respondent is ChatGPT. This finding aligns with several previous studies. Waziana et al. (2024) report that ChatGPT is one of the most frequently used AI chatbot by undergraduate EFL students in Indonesia. Based on their

research, ChatGPT was frequently used to help the students' writing skills, particularly in determining lexical choices and correcting the students' grammar. Another research that presented similar result is the one conducted by Song & Song (2023) which reported that ChatGPT could be a writing assistant that can improve the students' writing skills by providing feedback on lexical choices, grammar, organization of ideas, etc.

In terms of reading skill, the finding of this study shows that the participants also use AI tools to help them comprehend a certain text. AI tools such as ChatGPT and Gemini, according to the participants, are capable of simplifying complicated or long text that make it easier for the participants to understand. This finding was supported by Çelik et al. (2024), whom in their experimental research participated by undergraduate EFL learners in Türkiye, found that reading comprehension skill of the participants was improved due to positive impact of using ChatGPT to simplify authentic text that make it easier for the participants to understand the text. Çelik et al. (2024) further explained the reason, that is by simplifying authentic or complicated text, AI tools like ChatGPT provide simplified version of the text with simpler lexical choices and less complicated grammatical structures. Therefore, it is easier for the EFL learners to comprehend the meaning of the text. Lestari et al. (2022) also report that there is a significant correlation between the use of AI tool with EFL learners' reading comprehension skill. In their experimental research conducted in a university in Kalimantan, Indonesia, they found out that the use of AI tool can significantly improve the EFL learners reading skill. Not only in terms of reading comprehension, a significant improvement on reading accuracy, vocabulary retention, critical thinking, and confidence, were also reported occurring on EFL students who were exposed to the use of AI tool in EFL learning process (Erkinovna, 2025).

Unlike writing skills, speaking and listening skills were not heavily highlighted by the participants of the interview when were asked about the language skills they try to improve with the help of AI tools. Nevertheless, some of the participants also stated that AI tools such as ChatGPT with its voice-note feature, and Duolingo, can also improve their speaking and listening skills. The participants' statement in this study is in alignment with findings of other previous studies. Gilea et al. (2025) claimed that AI tools or tools can significantly contribute to EFL learners' accuracy in pronunciation, fluency and listening comprehension. Raza et al. (2024) also stated that integration of AI tool in classrooms could promote the EFL learners' listening comprehension as well as critical thinking. Qassrawi et al. (2024), in their mixed-methods research, found that the use of AI tool, in this case Google Assistant, significantly improve the EFL learners speaking skill and its subskills such as fluency, accuracy, relevancy, content, vocabularies, as wells as the students' overall speaking performance.

Based on the result of the survey and the interview, a convergence point can be drawn. The survey results shows that there are 21 AI tools used by the respondents, with ChatGPT as AI tool dominantly used by 88% of the respondents. This result is supported by the interview quotes in which the participants stated to use various AI tool to help them in learning English. The excerpts also reveal the participants used those AI tools for multi purposes which indirectly indicates participants perceived usefulness (PU) of AI tools. Meiryani et al. (2023) stated that in TAM, a high degree of individual perceived usefulness of technology will result in high actual use of the technology. It can be concluded that the high use of various AI tools found in this study is driven by the high degree of the participants perceived usefulness (PU) towards AI as they perceived it to be useful in honing their language skill.

### ***EFL Students' Perception on the Use of AI in Enhancing Language Skills***

Walgito (2010) defines perception as an internal process induced by the one's sensory organs and followed by the brain's interpretation to those stimuli into a meaningful response. In language learning, Brown (2007) defines perception as part of learner's attitude and it is a cluster of belief that dictates student's motivation to engage with a particular method in the learning process. In addition, Qiong (2017) stated that perception is a three-stage cognitive process which includes selection, organization and interpretation. This study defines perceptions in alignment of the three aforementioned definitions, that is the cognitive process through which EFL students select, organize, and interpret information regarding AI

tools. In addition, to evaluate the outcomes of this perceptual process, this study adopts the Tricomponent Attitude Model proposed by Schiffman & Kanuk (2007) which categorizes attitude into three parts, namely cognitive, affective and conative. The first deals with knowledge and perception of someone in regards to certain object. The second is one's feeling about the object, and the last one is the tendency of performing actions or behave in particular way towards the object. This integrated approach provides a robust base for TAM framework by efficiently aligning students' perception with the variables of the framework, namely perceived ease of use (PEoU) and perceived usefulness (PU).

Student perceptions in this study were measured through quantitative data processing obtained from the results of closed questionnaires and qualitative processing from the results of interviews conducted. As previously explained, the questionnaire distributed to respondents in the survey consisted of 21 closed questions covering 6 aspects related to perception in accordance with the above theoretical frameworks. Those aspects are (1) knowledge of AI, (2) experience in using AI, (3) attitudes towards the use of AI, (4) benefits of AI in learning English, (5) challenges and concerns, and (6) preferences towards the use of AI. The following table shows the percentage of respondents' answers to each question in the survey conducted.

Table 3. EFL Students' Perception on the Use of AI in EFL Learning Process

No	Question	Percentage of Responses				
		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
Q1	I know what AI is (including its meaning/definition, uses, and other aspects).	0,7%	1,3%	13,4%	36,9%	47,7%
Q2	I know that AI can be used to assist in learning English.	0,7%	0,7%	10,7%	39,6%	48,3%
Q3	I know that several AI tools can be used to improve English language skills (such as ChatGPT, Grammarly, Duolingo, etc.).	1,3%	0,7%	7,4%	42,3%	48,3%
Q4	I have used AI tools to improve my English language skills.	2%	0,7%	16,1%	40,9%	40,3%
Q5	I use AI to improve my English writing skills (correcting grammar, spelling, writing essays, summarising literature reviews, etc.).	2%	0,7%	17,4%	47,7%	32,2%
Q6	I use AI to improve my English-speaking skills (improving pronunciation, accuracy, responding to speech, etc.).	3,4%	6%	36,9%	34,2%	19,5%
Q7	I use AI to improve my English reading skills (understanding texts, difficult words, etc.).	2,7%	4%	25,5%	43,6%	24,2%
Q8	I use AI to improve my listening skills in English (understanding conversations, pronunciation, etc.).	5,4%	4%	38,9%	34,2%	17,4%
Q9	I use AI to help me complete assignments from my lecturers (making handouts, summarising lecture material, etc.).	1,3%	2,7%	26,9%	43%	16,1%

No	Question	Percentage of Responses				
		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
Q10	I feel that the use/application of AI in learning English is a positive thing.	1,3%	3,4%	22,8%	47,7%	24,8%
Q11	I feel comfortable using AI in the English language learning process.	1,3%	2%	30,2%	45,6%	20,8%
Q12	I believe that by AI, I can learn and improve my English language skills better and more effectively.	1,3%	3,4%	37,6%	44,3%	13,4%
Q13	AI can help improve my English language skills.	2,7%	2,7%	31,5%	45,6%	17,4%
Q14	With AI, I feel more confident using English in my learning process and everyday communication.	4%	11,4%	45%	29,5%	10,1%
Q15	AI can help me learn independently without always having to rely on lecturers.	8,7%	18,8%	34,9%	26,8%	10,7%
Q16	I am concerned that relying too much on AI may reduce my learning capacity and abilities, including my ability to be creative and think critically.	2,7%	5,4%	18,8%	36,2%	36,9%
Q17	I feel that AI sometimes provides inaccurate answers.	0%	6,7%	14,8%	36,2%	42,3%
Q18	I am concerned about the quality of learning materials or answers provided by AI.	0,7%	3,4%	28,9%	43,6%	23,5%
Q19	I hope lecturers can integrate the use of AI into the English teaching and learning process in the classroom.	3,4%	2,7%	45,6%	35,6%	12,8%
Q20	I am more interested in learning English with the help of AI than conventional methods.	10,7%	24,2%	53%	10,7%	1,3%
Q21	I am interested in learning more about how to apply AI to improve my English language skills.	0,7%	6,7%	32,9%	42,3%	17,4%

Based on the above percentage calculations, respondents' answers to all questions are spread across the five scales provided, except for question no. 17, where no respondents gave a score of 1 or strongly disagree to the question. Question 17 specifically indicates the concerns of students or respondents regarding the answers provided by AI tools. The absence of respondents who chose scale 1 (strongly disagree) indicates that no respondents were completely confident in the accuracy of the answers provided by AI tools. To analyse and conclude the respondents' answers to each item and aspect that is the focus of the study, a descriptive statistical test of the questionnaire results is required, both per question item and

per question aspect. The following table shows the results of the descriptive statistical test conducted on the respondents' answers to each question item.

Table 4. Results of Descriptive Statistical Tests on Questionnaire Responses per Item

<b>Item</b>	<b>Mean</b>	<b>Median</b>	<b>Std Dev</b>	<b>Result</b>
Q1	4.30	4.00	0.80	Agree
Q2	4.34	4.00	0.75	Agree
Q3	4.36	4.00	0.76	Agree
Q4	4.17	4.00	0.87	Agree
Q5	4.07	4.00	0.84	Agree
Q6	3.60	4.00	0.98	Agree
Q7	3.83	4.00	0.94	Agree
Q8	3.54	4.00	1.00	Agree
Q9	3.70	4.00	0.82	Agree
Q10	3.91	4.00	0.85	Agree
Q11	3.83	4.00	0.83	Agree
Q12	3.65	4.00	0.80	Agree
Q13	3.72	4.00	0.88	Agree
Q14	3.30	3.00	0.94	Neutral
Q15	3.12	3.00	1.11	Neutral
Q16	3.99	4.00	1.01	Agree
Q17	4.14	4.00	0.91	Agree
Q18	3.86	4.00	0.84	Agree
Q19	3.52	3.00	0.87	Agree
Q20	2.68	3.00	0.86	Neutral
Q21	3.69	4.00	0.86	Agree

Based on the statistical tests conducted and shown in the table above, it can be seen that the average responses of respondents were in the range of agree (4) and neutral (3). In general, respondents agreed with questions Q1 – Q13, Q16 – Q19, and Q21. Neutral responses were concluded for questions Q14, Q15, and Q20. In addition to the responses to each question, descriptive statistical tests were also conducted on each aspect of the questions, and the test results are shown in the table below.

Table 5. Statistical Test on Questionnaire Responses per Aspect

<b>Aspect</b>	<b>Mean</b>	<b>Result</b>
Knowledge	4.33	Agree
Experience	3.82	Agree
Attitude	3.80	Agree
Benefits	3.38	Neutral
Challenges	4.00	Agree
Preferences	3.30	Neutral

The table above shows that in terms of knowledge, experience, attitude, and challenges, the average respondent score was 4 or agree, while in terms of benefits and preferences, the average score was 3 or neutral. In terms of knowledge, based on the percentage distribution of responses and statistical tests conducted, it appears that the respondents have knowledge of the use of AI tools in the language learning process. Similarly, in terms of experience, most respondents have used AI tools in the process of learning English as a foreign language, although there are respondents, less than 10%, who stated that they have never used or do not rely on the use of AI tools in the process of learning English as a foreign language. In terms of attitude, the respondents also showed a positive attitude towards the use of AI tools in the English language learning process, although they also agreed that there were concerns about its use, as shown by

the average score in the challenge aspect. In the aspect of benefits and preferences, the respondents were on average neutral.

The interpretation of the questionnaire data was reinforced by the results of interviews conducted with 36 participants. In terms of knowledge and experience, all participants were able to demonstrate their knowledge of AI both in general and specifically in English language learning as well as explaining their experience in using AI in EFL context, as shown in the following data:

**Table 6. Interview Excerpts on Participants' Knowledge, Experience, Attitudes and Benefits in Using AI**

<b>Aspect</b>	<b>Data Number</b>	<b>Interview Excerpts</b>
Knowledge	(1-7)	"AI is a technology that can mimic human abilities and human thought patterns." (P17)
	(1-8)	"Artificial intelligence was originally created for technological purposes, but because it is accessible to the public, it can become a new benchmark for human life, performing our tasks, and only requiring instructions, making human tasks easier, whether in writing problems, coding, or other tasks. AI has been around since 2017, starting with voice assistants such as Siri and others. It used to be a system, but now it may be starting to be on par with humans." (P18)
Experience	(1-9)	"I started using AI in my second semester. On average, I use ChatGPT, Perplexity, Gemini, most often, and Grammarly. I use it more often to check grammar and to help me write assignments. I only use it as a guide for writing. For the other three skills, I rarely use them, only for writing, frequently." (P15)
	(1-10)	"I have been using Duolingo since high school. When I was in university, I often use ChatGPT to help with assignments, check grammar, and find ideas for writing. On a scale of 1-10, I use it 9 out of 10, so I use it very often, especially to find ideas and references. When writing essays, I ask AI to help with the essay structure." (P19)
Attitudes and Benefits	(1-11)	"AI tools can easily tell me which one is wrong or right. It is efficient in terms of time, so I do not have to ask the lecturer or anyone else if there's anything I want to ask. While I don't use it 100%, I believe it brings more positive impacts as it makes learning process easier in several aspects." (P4)
	(1-12)	"It can give us answers about something instantly. It can also give great help in organizing ideas in writing. In addition, if we want to understanding something deeper, AI tools can help us with that. It makes it easier, just ask or give a detail prompt to it, or ask it to explain something in a simpler way. It is just the relevancy of the answer that we have to re-check." (P7)

Based on the answers of the participants in the interview, as shown in data (1-7) and (1-8) above, most informants agreed that AI is part of technology developed to help humans perform various tasks, including in their daily lives. According to the participants, AI is capable of thinking like humans so that it can be used to perform various tasks, including in the process of learning English as a foreign language, which they have been doing.

In terms of experience in using AI, all interview participants stated that they had used such tools and, on average, had started using them since in their first semester studying in the university. Data (1-9) and (1-10) above show that the participants have experience in using AI in the language learning process. The experience of learning using AI is used to hone the language skills of participants and assist them in completing assignments from lecturers. All participants also stated that during the learning process they

obtained in lectures, especially in courses that hone language skills, they used AI tools in independent learning.

The participants also agree that AI tools give them several advantages in learning English, as can be seen from data (1-11) and (1-12). Both P4 and P7 expressed that using AI tools are efficient as it can save time. P7's answer in data (1-12) also indicates that AI tools are easy to use, as the users only have to give prompts to the AI tools based on their needs. The participants also agree that AI tools are useful as it brings many positive impacts and it can make learning process easier which also reflects the participants' positive attitude towards the use of AI tools.

The result of quantitative analysis in the aspect of knowledge (mean score: 4.33) and experience (mean score: 3.82) indicate a strong positive perception of AI's usefulness, such as Q4 which shows 40.9% of the respondents agree and 40.3% of the respondents strongly agree to have use AI tools to enhance their language skills. This statistical trend is validated by the qualitative testimonies (as shown in Table 6), in which participants such as P18 described AI as "benchmark for human life" that make task easier. In addition, quantitative result on the aspect of attitude (mean score: 3.80) and benefits (mean score: 3.30), especially Q11 which indicates the respondents' perception on the ease of use of AI tools in which 45.6% of the respondents agree that they feel comfortable using AI in the English language learning process, shows a convergence point with the qualitative testimonies given by the participants such as in Data (1-11) and (1-12). Another validation in this aspect can be seen in quantitative result of Q12 and Q13 which emphasis the respondents' perception on the usefulness of AI tools in learning English, 44.3% respondents agree that by AI, they can learn and improve their English language skills better and more effectively as well as 45.6% of them believes that AI can help improve their English language skills. These two quantitative results can be explained by the interview results in which participants express the reason why they think AI tools is useful, like P7 in data (1-12) who stated that AI tools give him great help in organizing ideas or make it easier for him in understanding difficult material by explaining it in simpler ways.

In terms of using AI tools to enhance language skills, there is a clear alignment between the survey data and the participants' interviews for writing and reading skills. As for writing skills, the result of the survey showed high agreement from the respondents (Q5, mean score = 4.07). This result was triangulated by participants P15, P19 and P32, who stated to use AI tools such as ChatGPT and Grammarly for grammar checks and sentence development. Similarly, in reading skills, the statistical result indicated high agreement from the respondents (Q7, mean score = 3.83). This result aligns with qualitative testimonies from the participants that use AI tools to understand difficult materials, summarize, and find key points in difficult reading text, like P7 and P25. Interestingly, while quantitative results for speaking (Q6, mean score = 3.60) and listening (Q8, mean score = 3.54) were positive, the results were significantly lower than writing. The interview excerpts explained this divergence, as several students, such as P7, P15, P19 and P32 admitted that they use AI tools dominantly for writing and do not really use it for speaking and listening, preferring human interaction or conventional methods for these specific skills.

It can be concluded that, in terms of boosting the language skill, the participants of the study agree that using AI can help them in organizing ideas, checking grammar, choosing vocabularies, simplifying text, practicing pronunciation and listening comprehension, etc. Due to this reason, the participants show positive attitude towards the use of AI for the benefits it provides them in honing their language skill. Similar to this finding, a study conducted by Alammar & Amin (2023) found that the EFL students view AI application as useful tools that can help improving their writing process significantly. Ananda & Salmiah (2024) also found similar result, in which EFL students found AI tools, particularly Gemini, are helpful and having many features that can help them in writing. Arifatin & Setyaningrum (2024) also highlight EFL learners' positive attitude towards the use of AI application in EFL context because they realize the benefits that AI application provides. EFL students are also claimed to view AI application, such as Duolingo and Elsa Speak as a great AI application to enhance their speaking and listening skills (Azzahra et al., 2024).

By utilizing the TAM model as a lens, the high use of AI tools, as indicated by the high score on students' experience in using it and students' testimonies provided in table 6, driven by the students' perceptions of AI tools to have high degree of ease of use (PEoU) due to their easy accessibility and

efficiency and high degree of usefulness (PU) as their ability to help the students to enhance their language skills or solving any given tasks.

In order to provide a comprehension exploration and evaluation of the students' perception on the use of AI in EFL contexts, the interview conducted also covers aspects of challenges in using AI and students' preferences in using it. The following table displays several interviews excerpts on these aspects.

Table 7. Interview Excerpts on Challenges and Preferences in Using AI

Aspect	Data Number	Excerpts
Challenges	(1-13)	"The learning process has become easier in some aspects, but I don't use it 100%. There are more positive impacts. Regarding concerns, I am very worried because in general, many students rely 100% on AI and do not check their work results with AI. What if all students rely on AI? The role of lecturers in class will fade and students will become lazy to think." (P4)
	(1-14)	"AI makes the learning process easier. If AI is used frequently, I think students will become lazier in thinking critically. Sometimes AI is not on target with what we need, which may happen when I am unclear in providing questions or prompts to AI." (P14)
	(1-15)	"Initially, I was worried because I would become lazy in thinking and my thinking skills would decline, so I reduced its use." (P21)
	(1-16)	"Sometimes I think, before AI existed, I could think for myself, but now I ask AI frequently. To prevent that, I use AI only as a learning tool, I am learning to use AI more wisely." (P22)
Preferences	(1-17)	"AI cannot replace the role of lecturers. For example, for speaking skills, we are more helped by the role of lecturers, as well as explanations in class. Lecturers are very helpful, so AI cannot replace lecturers." (P14)
	(1-18)	"AI cannot necessarily replace the role of lecturers, even though it can make things easier, but the material from AI cannot necessarily replace the role of lecturers." (P15)
	(1-19)	"Lecturers play many roles in learning, in providing guidance, experience, and assessment. AI only answers our questions. Lecturers are more interactive. The role of lecturers is still very important." (R24)
	(1-20)	"I prefer face-to-face lessons with lecturers. AI cannot replace teachers/lecturers." (P31)

Qualitative data in table 7 above indicate that most participants feel worried that the speed and ease provided by AI could lead to dependence, which would then have an impact on reducing their creativity and critical thinking skills. Interestingly, in terms of preferences for the use of AI in the learning process, despite recognising the benefits of AI, most participants believe that AI should only be used as a means of independent learning rather than being integrated into the formal learning process in the classroom. According to them, lecturers or teachers cannot and should not be replaced by AI.

These qualitative data explain the most significant point of triangulation that lies in the challenges aspect (mean score = 4.00). Despite the positive attitude, for instance as shown in Q10 for having high mean score (3.91), there was a high agreement from the respondents that AI provides inaccurate answers (Q17, mean score = 4.14) and concerns about reduced critical thinking (Q16, mean score = 3.99). Data (1-14) is one example of how the participants show positive attitude towards the use of AI, yet still having concern on its reliability and possibility on reducing critical thinking.

The data also explain the average neutral mean score of respondents' preferences (mean score = 3.30). In spite of the high mean score of knowledge and experience aspects which indicate the respondents' high use of AI tools in learning English, there is a tendency that the respondents still prefer conventional

method to learn the language in classroom setting, as shown by quantitative result of Q20 (mean score = 2.68), in which 53% of respondents expressed neutrality, followed by 24.2% of respondents expressed disagreement towards the issue. This phenomenon is convergent by the qualitative statements as in data (1-17) to (1-20), in which the participants perceived that AI tools could not replace the role of teachers or lecturers.

The concerns expressed by the participants on the use of AI tools in language learning were also reported by several previous studies. Song & Song (2023) expressed their concern on the use of ChatGPT as writing assistant, as according to their studies, frequently using ChatGPT to generate text could dull the writing skills of EFL learners. Apriani et al. (2024) also reported that the excessive usage of AI tools could lead to plagiarism issue as well as reduce the students' creativity. Phan (2023), similar to the participants' testimonies, also found that AI tools could give inaccurate feedback.

From the perspective of TAM, it can be concluded that the respondents acknowledge the ease of use (PEoU) and usefulness (PU) of AI tools in enhancing their language skills. The high degree of PEoU and PU corresponds directly to respondents' positive attitude (A) and the high frequency of actual use of AI tools among the respondents. However, the synthesis conducted in this study also revealed that the respondents, students of English Literature Study Program, Udayana University, can be considered as critical adopters as they use AI tools for its ease of use and usefulness yet still deeply sceptical of its reliability and long-term impact that it may cause to their cognitive skills. This scepticism becomes an underlying reason for the respondents' preference of using AI only as additional aid or assistant in independent learning activities.

### ***Pedagogical and Policy Implications***

Using AI tools in EFL context is inevitable (Mulyana, 2025) and based on the findings of this study which indicate the high use of AI tools among students in EFL context, it is important for EFL lecturers or teachers, to formulate pedagogical approach that could accommodate the integration of AI into the learning process. For instance, as have been explained earlier, it was found that AI tools are highly used for writing (Q5, mean score = 4.07) and the respondents' concern regarding the accuracy of AI's answers or feedback suggests that pedagogy should evolve. Language teachers or lecturers should consider AI tools as a collaborative partner instead of students' study guide (Meniado, 2024). One activity that language teachers can do by considering students' concern on the inaccuracies of AI, is to implement tasks where students are asked to generate an AI response and then evaluate the response for verification. By doing this, the students can foster their critical thinking as well as enhance their knowledge and skills as the evaluation process would require adequate knowledge or skill.

Another implication raised by the findings of this study is address to higher education institution or the policy maker. The diversity of 21 AI tools identified in this study indicates that the students are operating in unguided AI ecosystem. Therefore, it is considered necessary for higher education institution to create policies that is open for AI ecosystem yet cautious to its possible negative drawbacks. One way to do so is by integrating AI literacy into the formal syllabus. This would include teaching the students prompt engineering or the ability to compose accurate instructions to improve the quality of feedback given by AI tools. This can be done while at the same time educating the students on ethical boundaries of using AI. Moreover, based on the findings of this study, especially on Q21 in which the respondents show high agreement on interest of learning more about how to apply AI to improve their English language skills, teaching prompt engineering would be considered beneficial by the students. However, to be able to implement this policy, it is also essential for the institution to ensure the teacher's ability and skills to do so, for instance by conducting workshops for teachers periodically.

### **CONCLUSION**

Based on the research conducted, it can be concluded that students enrolled in the 2023/2024 academic year in the English Literature Study Programme at the Faculty of Humanities, Udayana University, have knowledge and experience in using AI in the process of learning English as a foreign language. The AI tools that are often used by students include (1) ChatGPT, (2) Grammarly, (3) Duolingo,

(4) Perplexity, (5) Gemini, and various other tools used for various contexts, such as improving writing quality, finding ideas, understanding texts, improving pronunciation, listening practice, and others. Based on the results of the study, it was found that students also had a positive perception of the use of AI because of their ease, speed, and efficiency in helping them in the learning process. However, the respondents were also aware of and concerned about the negative impacts that could arise, including dependence, plagiarism issues, and a decline in creativity and critical thinking skills.

This research is still very limited to students' perceptions of the use of AI in the process of learning English as a foreign language, particularly in the process of independent learning. Therefore, further research emphasising the exploration of the integration of AI in the language learning process in classroom setting in innovative and creative ways needs to be carried out in order to provide a deeper understanding of this topic.

## ACKNOWLEDGMENTS

This research activity was funded by the Udayana University PNB Fund for the 2025 fiscal year. On this occasion, we, the research team, would like to express our gratitude to various parties who have provided assistance in terms of funding, ideas, energy, time, and motivation so that this research activity could run smoothly without encountering any significant obstacles. Our gratitude goes to (1) The Rector of Udayana University; (2) The Head of the Institute for Research and Community Service at Udayana University; (3) The Dean of the Faculty of Humanities at Udayana University. We, the research team, realise that the results of this research are not yet perfect, but we sincerely hope that this research can enrich the field of research, particularly in the area of English language learning and teaching as foreign language.

## REFERENCES

- Alammar, A., & Amin, E. A.-R. (2023). EFL Students' Perception of Using AI Paraphrasing Tools in English Language Research Projects. *Arab World English Journal*, 14(3), 166–181. <https://doi.org/10.24093/awej/vol14no3.11>
- Alrasheedi, S. (2025). The Effect of Using AI Applications to Develop EFL Listening Comprehension Skills Among University Students. *Conhecimento & Diversidade*, 16(44), 601–637. <https://doi.org/10.18316/rcd.v16i44.12346>
- Alzahrani, F. K. J., & Alotaibi, H. H. (2024). The Impact of Artificial Intelligence on Enhancing EFL Writing Skills among High School Students. *Journal of Educational and Human Sciences*, 34, 226–240. <https://doi.org/10.33193/JEAHS.34.2024.482>
- Ananda, D. R., & Salmiah, M. (2024). Students' Perceptions on AI Technology: Gemini as a Writing Assistant Tool. *Linguistics and ELT Journal* 12(1). <https://doi.org/10.31764/leltj.v12i1.24393>
- Apriani, E., Cardoso, L., Obaid, A. J., Muthmainnah, Wijayanti, E., Esmianti, F., & Supardan, D. (2024). Impact of AI-Powered ChatBots on EFL Students' Writing Skills, Self-Efficacy, and Self-Regulation: A Mixed-Methods Study. *Global Educational Research Review*, 1(2), 57–72. <https://doi.org/10.71380/GERR-08-2024-8>
- Arifatin, F. W., & Setyaningrum, R. R. (2024). Students' Perception on the Use of AI in English Language Learning. *TELL-US Journal* 10(2), 474–487. <https://doi.org/10.22202/tus.2024.v10i2.8188>
- Azzahra, N., Tri Widiastuti, P., Sopyani, N., Luthfiyyah, R., & Dwiniasih. (2024). A Study on English Students' Perception Regarding the AI Implementation on Listening and Speaking Skills. *Indonesian Journal of Innovation and Applied Sciences (IJIAS)*, 4(2), 113–120. <https://doi.org/10.47540/ijias.v4i2.1466>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>

- Brown, H. D. (2007). *Principles of Language Learning and Teaching* (5th ed.). Pearson Longman.
- Çelik, F., Yangın Ersanlı, C., & Arslanbay, G. (2024). Does AI Simplification of Authentic Blog Texts Improve Reading Comprehension, Inferencing, and Anxiety? A One-Shot Intervention in Turkish EFL Context. *The International Review of Research in Open and Distributed Learning*, 25(3), 287–303. <https://doi.org/10.19173/irrodl.v25i3.7779>
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). Sage.
- Creswell, J. W. (2021). *Concise Introduction to Mixed Method Research* (2nd ed.). Sage.
- Creswell, J. W., & Creswell, J. D. (2015). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/20249008>
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace. *Journal of Applied Social Psychology*, 22(14), 1111–1132. <https://doi.org/10.1111/j.1559-1816.1992.tb00945.x>
- Erkinovna, F. G. (2025). The Transformative Role of Artificial Intelligence in Enhancing English Reading Proficiency Among Uzbek EFL Learners: A Comprehensive Study. *International Multidisciplinary Journal for Research & Development*, 12(5), 110–199.
- Etaat, F. (2024). *The Effect of AI-Based Applications on EFL Writing Skill Development*. The Arctic University of Norway.
- Fathi, J., Rahimi, M., & Derakhsan, A. (2024). Improving EFL learners' speaking skills and willingness to communicate via artificial intelligence-mediated interactions. *System*, 121. <https://doi.org/10.1016/j.system.2024.103254>
- Gilea, A. A., Katerina V. Melnova, & Gyuzelya K. Temirgaliyeva. (2025). The Role of Artificial Intelligence in Enhancing English Speaking and Listening Skills in Higher Education. *Proceeding of International Conference on Social Science and Humanity*, 2(3), 870–879. <https://doi.org/10.61796/icossh.v2i3.142>
- Lestari, S., Usadiati, W., & Misrita, M. (2022). The Correlation Between Students' Artificial Intelligence and Their English Reading Skills Achievement. *Bahasa: Jurnal Keilmuan Pendidikan Bahasa Dan Sastra Indonesia*, 3(2), 103–111. <https://doi.org/10.26499/bahasa.v3i2.110>
- Marzuki, Widiati, U., Rusdin, D., Darwin, & Indrawati, I. (2023). The impact of AI writing tools on the content and organization of students' writing: EFL teachers' perspective. *Cogent Education*, 10(2), 2236469. <https://doi.org/10.1080/2331186X.2023.2236469>
- Meiryani, M., Tunggono, A. F., & Erlan, R. T. (2023). *The New Era of Banking: Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT)*. ICSLT 2023 9th International Conference on e-Society, e-Learning and e-Technologies. <https://doi.org/10.1145/3613944.3613955>
- Meniado, J. (2024). Human–Machine Collaboration in Language Education in the Age of Artificial Intelligence. *RELC Journal*, 55(3), 291–295. <https://doi.org/10.1177/00336882241266629>
- Mulyana, N. (2025). Exploring the Use of Artificial Intelligence as Writing Assistant in EFL Classroom: A Systematic Literature Review. *Linguistika*, 32(1), 10–21.

- Phan, T. N. L. (2023). Students' Perceptions of the AI Technology Application in English Writing Classes. *Proceedings of the AsiaCALL International Conference*, 4, 45–62. <https://doi.org/10.54855/paic.2344>
- Qiong, O. (2017). A Brief Introduction to Perception. *Studies in Literature and Language*, 15(4), 18–28. <https://doi.org/10.3968/1005>
- Rabehi, I., Hadfi, S., & Benzoukh, H. (2024). *The Case of Fourth Year Students of English at Teachers' Training School (ENS) -Ouargla -Algeria*. University of Ouargla.
- Rania Muhammad Qassrawi, Aya ElMashharawi, Mahmoud Itmeizeh, & Mohammed H. M. Tamimi. (2024). AI-Powered Applications for Improving EFL Students' Speaking Proficiency in Higher Education. *Forum for Linguistic Studies*, 6(5), 535–549. <https://doi.org/10.30564/fls.v6i5.6966>
- Raza, M. A., Khan, H., & Bukhari, S. (2024). Transforming EFL Listening Skills: The Power of AI Integration in Classrooms. *Social Science Review Archives*, 2(2), 2284–2295. <https://doi.org/10.70670/sra.v2i2.485>
- Sauro, J. (2015, April 29). *3 Ways to Combine Quantitative and Qualitative Research*. Measuring U. <https://measuringu.com/mixing-methods/>
- Schiffman, L. G., & Kanuk, L. L. (2007). *Consumer behavior*. Upper Saddle River.
- Song, C., & Song, Y. (2023). Enhancing academic writing skills and motivation: Assessing the efficacy of ChatGPT in AI-assisted language learning for EFL students. *Frontiers in Psychology*, 14, 1260843. <https://doi.org/10.3389/fpsyg.2023.1260843>
- Syabilla, Z. F., Romadhon, M. G. E., & Mustofa, M. (2023). Are You Creative? What College English Language Learners Think of AI Writing Assistants. *Voices of Language Education Society*, 7(3), 456–470. <https://doi.org/10.29408/veles.v7i3.21209>
- Turner, M., Kitchenham, B., Brereton, P., Charters, S., & Budgen, D. (2010). Does the technology acceptance model predict actual use? A systematic literature review. *Information and Software Technology*, 52(5), 63–479. <https://doi.org/10.1016/j.infsof.2009.11.005>
- Walgito, B. (2010). *Pengantar Psikologi Umum*. CV Andi Offset.
- Waziana, W., Andewi, W., Hastomo, T., & Hasbi, M. (2024). Students' Perceptions of the Impact of AI Chatbots on Vocabulary and Grammar in EFL Writing. *Register Journal*, 17(2), 352–382. <http://dx.doi.org/10.18326/rgt.v17i2.352-382>
- Yousefi, M., & Askari, M. I. (2024). Exploring the Effectiveness of Artificial Intelligence (AI) on Reading Comprehension among Iranian EFL Learners [Application/pdf]. *Journal of New Trends in English Language Learning (JNTELL)*, 3(5). <https://doi.org/10.71528/2024.202406221123351>
- Zakaria, & Ningrum, S. (2023). ChatGPT's Impact: The AI Revolution in EFL Writing. *Borneo Engineering & Advanced Multidisciplinary International Journal (BEAM)*, 2, 32–37. <https://beam.pmu.edu.my/index.php/beam/article/view/109>

