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EFL Students' Acceptance of AI Tools in English Writing: A Technology Acceptance Model Perspective

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ABSTRACT

The increasing use of Artificial Intelligence (AI) tools has influenced various aspects of education, including English writing. This study aimed to investigate EFL students' acceptance of AI tools in English writing using the Technology Acceptance Model (TAM). A quantitative survey design was employed, involving 151 EFL university students from several universities in Jakarta who had experience using AI tools such as ChatGPT, Gemini, and Grammarly in writing activities. Data were collected through an online questionnaire consisting of four TAM dimensions: Perceived Usefulness, Perceived Ease of Use, Attitude Toward Using AI Tools, and Behavioral Intention. The questionnaire demonstrated satisfactory reliability, with Cronbach's Alpha values ranging from 0.806 to 0.881. The data were analyzed using descriptive statistics. The findings revealed a high level of acceptance of AI tools across all dimensions. Behavioral Intention showed the highest mean score (M = 20.85), followed by Attitude Toward Using AI Tools (M = 20.83), Perceived Ease of Use (M = 20.70), and Perceived Usefulness (M = 20.26). The results indicate that students perceived AI tools as useful, easy to use, and beneficial in supporting various stages of the writing process. Overall, the study suggests that AI tools have been positively accepted by EFL students and may serve as valuable resources for enhancing English writing activities in higher education contexts.

1. INTRODUCTION

English plays an important role as an international language used for communication, education, business, and knowledge exchange worldwide. In the context of English as a Foreign Language (EFL), students are expected to develop four language skills, namely listening, speaking, reading, and writing. Among these skills, writing is often considered the most challenging because it requires learners to generate ideas, organize information logically, apply appropriate grammatical structures, and express ideas clearly. Many EFL students experience difficulties in developing content, selecting suitable vocabulary, maintaining grammatical accuracy, and producing coherent written texts. These challenges may reduce students' confidence and motivation in writing activities. Recent technological developments have introduced Artificial Intelligence (AI) as a promising tool to support language learning. AI-powered applications such as ChatGPT, Gemini, Grammarly, and QuillBot are increasingly used by students to assist various stages of the writing process. These tools provide immediate feedback, generate ideas, suggest vocabulary improvements, identify grammatical errors, and support text revision. As a result, AI has become an important resource for helping students improve the quality of their writing.

Previous studies have reported positive outcomes regarding the use of AI in English writing (Mekheimer, 2025). found that AI-generated feedback enabled learners to revise their writing more effectively through immediate and detailed suggestions. Similarly, (Sari & Han, 2024) reported that AI-based writing feedback increased learners' confidence, autonomy, and writing performance. (Wang, 2025) further revealed that students frequently used generative AI tools for idea development and content generation during writing activities. These findings suggest

that AI tools offer valuable support for EFL learners in improving their writing skills. Despite these benefits, the successful implementation of AI tools depends not only on the technology itself but also on students' willingness to accept and use it. One of the most widely used frameworks for examining technology acceptance is the Technology Acceptance Model (TAM) proposed by (Davis, 1989). TAM explains that users' acceptance of technology is influenced by perceived usefulness, perceived ease of use, attitude toward using, and behavioral intention. The model has been widely applied in educational technology research to explain how users perceive and adopt technological innovations. Although previous studies have explored the use of AI-assisted writing tools and technology acceptance in educational settings, most of them have primarily focused on the effectiveness of AI in improving writing performance or on technology adoption in broader educational contexts. Research examining EFL students' acceptance of AI tools in English writing through the four dimensions of the Technology Acceptance Model (TAM), namely Perceived Usefulness, Perceived Ease of Use, Attitude Toward Using AI Tools, and Behavioral Intention, remains limited. In addition, empirical evidence concerning the acceptance of AI tools among Indonesian EFL university students is still scarce. Therefore, further investigation is needed to provide a more comprehensive understanding of how EFL students perceive and accept AI tools in English writing activities. Therefore, this study aims to investigate EFL students' acceptance of AI tools in English writing using the Technology Acceptance Model (TAM). Specifically, the study examines students' perceptions of perceived usefulness, perceived ease of use, attitude toward using AI tools, and behavioral intention among EFL university students in Jakarta.

2. METHODS

2.1 Research Design

This study employed a quantitative survey design to investigate EFL students' acceptance of AI tools in English writing. A quantitative approach was considered appropriate because it enabled the researcher to collect numerical data regarding students' perceptions and acceptance of AI-assisted writing technologies. The study focused on four constructs of the Technology Acceptance Model (TAM): Perceived Usefulness, Perceived Ease of Use, Attitude Toward Using AI Tools, and Behavioral Intention.

2.2 Participants

The participants of this study were 151 EFL university students from 30 public and private universities in Jakarta. Participants were selected using purposive sampling based on two criteria: (1) being enrolled in an English-related study program and (2) having prior experience using AI tools, such as ChatGPT, Gemini, Grammarly, or similar applications, in English writing activities. The sample included students from various universities, with the largest proportion coming from Universitas Negeri Jakarta (18.5%), followed by Universitas Kristen Indonesia (9.3%), Universitas Indonesia (7.9%), and Universitas Bina Nusantara (7.3%). Jakarta was selected as the study area because it provided access to EFL students from diverse universities and English-related study programs, allowing the researcher to obtain data from participants with varied educational backgrounds and experiences in using AI tools for English writing.

2.3 Instrument

The instrument used in this study was an online questionnaire distributed through Google Forms. The questionnaire was adapted from the Technology Acceptance Model (TAM) developed by (Davis, 1989) and consisted of 20 items representing four constructs: Perceived Usefulness, Perceived Ease of Use, Attitude Toward Using AI Tools, and Behavioral Intention. Each construct was measured using five items. Responses were rated using a five point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). In addition, three open ended questions were included to

obtain supplementary information regarding students' experiences and perceptions of using AI tools in English writing activities. Prior to data collection, the questionnaire underwent content validation through expert judgment by a lecturer in English Language Education. The expert evaluated the clarity, relevance, and suitability of the questionnaire items with respect to the research objectives and the TAM constructs. Revisions were made based on the expert's feedback before the questionnaire was distributed to participants. Furthermore, the instrument was tested for validity and reliability. The validity test indicated that all questionnaire items were valid, while the reliability test showed that all constructs achieved Cronbach's Alpha values above 0.70, ranging from 0.806 to 0.881, indicating satisfactory reliability.

2.3.1 Data Collection Procedure

Data were collected through an online questionnaire distributed to eligible participants. Before completing the questionnaire, participants were informed about the purpose of the study and were assured that their participation was voluntary. All responses were automatically recorded through Google Forms for further analysis.

2.4 Data Analysis

The collected data were analyzed using descriptive statistics with the assistance of SPSS. Frequencies, percentages, mean scores, and standard deviations were calculated to describe students' acceptance of AI tools in English writing based on the four TAM constructs.

3. RESULTS AND DISCUSSION

RESULTS

3.1 Respondents' Demographic Information

3.1.1 Respondents Based on University

Table 1. Respondents Based on University

4 University	Frequency	Percentage (%)
Universitas Negeri Jakarta (UNJ)	28	18.5
Universitas Kristen Indonesia (UKI)	14	9.3
Universitas Indonesia	12	7.9
Universitas Bina Nusantara	11	7.3
Universitas Muhammadiyah Prof. Dr. Hamka	10	6.6
Universitas Bunda Mulia (UBM)	9	6.0
Universitas Indraprasta PGRI	8	5.3
Universitas Bina Sarana Informatika	6	4.0
UIN Syarif Hidayatullah Jakarta	5	3.3
Universitas Nasional	5	3.3
Universitas Islam As-Syafi'iyah	5	3.3
Universitas Esa Unggul	4	2.6
Universitas Pelita Harapan	4	2.6
Universitas MH Thamrin	4	2.6
Universitas Trisakti	3	2.0
Universitas Mercu Buana	3	2.0
Universitas Pancasila	3	2.0
Universitas Gunadarma	2	1.3
STIBA IEC Jakarta	2	1.3
Universitas Katolik Indonesia Atma Jaya	2	1.3
Jayabaya University	2	1.3
Universitas Krisnadwipayana (UNKRIS)	1	0.7

Universitas Pendidikan Indonesia	1	0.7
Universitas Al Azhar Indonesia (UAI)	1	0.7
Universitas LIA	1	0.7
Muhammadiyah University of Jakarta	1	0.7
Al Azhar Indonesia University	1	0.7
Persada Indonesia YAI University	1	0.7
Pamulang University	1	0.7
Prof. Dr. Moestopo University	1	0.7
Total	**151**	**100.0**

Table 1 indicates that the respondents were recruited from 30 universities. Universitas Negeri Jakarta (UNJ) accounted for the largest proportion of participants (18.5%), followed by Universitas Kristen Indonesia (9.3%), Universitas Indonesia (7.9%), and Universitas Bina Nusantara (7.3%). Respondents from other public and private universities were also represented in the sample. The inclusion of participants from diverse institutional backgrounds enhances the breadth of the data and provides a broader perspective on EFL students' acceptance of AI tools in English writing.

3.1.2 Respondent Based on Study Program

Table 2. Respondents Based on Study Program

Study Program	Frequency	Percentage (%)
English Education	68	45.0
English Literature	66	43.7
English Department	7	4.6
English Related Studies	5	3.3
English Language and Culture	4	2.6
Applied Linguistics	1	0.7
Total	**151**	**100.0**

Table 2 shows that English Education students constituted the largest proportion of respondents (45.0%), followed by English Literature students (43.7%). The remaining participants were from English Department, English Related Studies, English Language and Culture, and Applied Linguistics programs. These findings indicate that the respondents had relevant academic backgrounds and were suitable for investigating EFL students' acceptance of AI tools in English writing.

3.2 Instrument Validity and Reliability

3.2.1 Validity Test

Table 3. Validity Test of Perceived Usefulness

Item	r value	Sig.	Interpretation
X1.1	0.780	0.000	Valid
X1.2	0.769	0.000	Valid
X1.3	0.738	0.000	Valid
X1.4	0.790	0.000	Valid
X1.5	0.760	0.000	Valid

Table 3 shows that all items in the Perceived Usefulness construct were valid, as indicated by significance values below 0.05.

Table 4. Validity Test of Perceived Ease of Use

Item	r value	Sig.	Interpretation
X2.1	0.842	0.000	Valid
X2.2	0.804	0.000	Valid
X2.3	0.784	0.000	Valid
X2.4	0.851	0.000	Valid
X2.5	0.824	0.000	Valid

Table 4 indicates that all items in the Perceived Ease of Use construct met the validity criteria

Table 5. Validity Test of Attitude Toward Using AI Tools

Item	r value	Sig.	Interpretation
X3.1	0.812	0.000	Valid
X3.2	0.704	0.000	Valid
X3.3	0.720	0.000	Valid
X3.4	0.775	0.000	Valid
X3.5	0.756	0.000	Valid

As shown in Table 5, all items were found to be valid and suitable for data collection.

Table 6. Validity Test of Behavioral Intention

Item	r value	Sig.	Interpretation
X4.1	0.823	0.000	Valid
X4.2	0.830	0.000	Valid
X4.3	0.717	0.000	Valid
X4.4	0.811	0.000	Valid
X4.5	0.713	0.000	Valid

Table 6 demonstrates that all Behavioral Intention items were valid.

3.2.2 Reliability Test

Table 7. Reliability Analysis Results

Variable	Cronbach's Alpha	Interpretation.
Perceived Usefulness	0.825	Reliable
Perceived Ease of Use	0.881	Highly Reliable
Attitude Toward Using AI Tools	0.806	Reliable
Behavioral Intention	0.837	Reliable

Table 7 shows that all constructs achieved Cronbach's Alpha values above 0.70, indicating satisfactory reliability.

Table 8. Descriptive Statistics of TAM Constructs

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Perceived Usefulness	151	8	24	20.26	3.220
Perceived Ease of Use	151	7	24	20.70	2.592
Attitude Toward Using AI Tools	151	8	24	20.83	2.620

Behavioral Intention	151	8	25	20.85	3.052

Table 8 shows that Behavioral Intention obtained the highest mean score (*M* = 20.85), while Perceived Usefulness had the lowest mean score (*M* = 20.26). Overall, the findings indicate positive acceptance of AI tools among EFL students.

DISCUSSION

Perceived Usefulness

The findings showed that Perceived Usefulness obtained a high mean score (*M* = 20.26), indicating that students perceived AI tools as beneficial for English writing. According to (Davis, 1989), perceived usefulness refers to the extent to which technology is believed to improve users' performance. The results suggest that students viewed AI tools as valuable resources for generating ideas, improving grammar and vocabulary, and enhancing writing efficiency. This finding is consistent with previous studies by (Khalifa & Albadawy, 2024) and (Wang, 2025), which reported that AI tools support content development and writing productivity. Similarly, (Mekheimer, 2025) found that AI-generated feedback facilitates revision, while (Sari & Han, 2024) highlighted its role in promoting learner autonomy and confidence. Therefore, AI tools can be considered useful resources that support various aspects of English writing among EFL students.

Perceived Ease of Use

The findings revealed that Perceived Ease of Use achieved a high mean score (*M* = 20.70), indicating that respondents generally perceived AI tools as easy to use in English writing activities. This result suggests that students encountered few difficulties when using applications such as ChatGPT, Grammarly, and Gemini to support their writing tasks. The accessibility and user-friendly features of these tools may have contributed to students' positive perceptions. This finding supports the Technology Acceptance Model proposed by (Davis, 1989), which states that technologies perceived as easy to use are more likely to be accepted by users. The result is also consistent with (Zhao et al., 2024) and (Zhang et al., 2023), who reported that ease of use is an important factor influencing users' acceptance of AI technologies. The relatively low standard deviation (*SD* = 2.59) further indicates that respondents shared similar perceptions regarding the usability of AI tools. Overall, the findings suggest that EFL students viewed AI tools as accessible and practical resources for supporting English writing activities.

Attitude Toward Using AI Tools

The findings revealed that Attitude Toward Using AI Tools obtained a high mean score (*M* = 20.83), indicating that respondents generally held positive attitudes toward the use of AI tools in English writing activities. This result suggests that students viewed AI tools as beneficial resources that supported their writing process and learning experiences. According to (Davis, 1989) attitude toward using reflects users' positive or negative evaluations of a particular technology. The high mean score obtained in this study indicates that respondents generally held favorable attitudes toward the use of AI tools in English writing activities. The findings were further supported by students' responses, which indicated that AI tools helped increase their confidence in writing and assisted them in identifying and correcting errors more effectively. Several participants also reported that AI-generated feedback reduced difficulties encountered during the writing process. Similar findings were reported by (Sari & Han, 2024), who found that AI-based feedback can enhance learners' confidence and support independent revision. Overall, the results suggest that EFL students perceived AI tools positively and considered them valuable resources for supporting English writing activities.

Behavioral Intention

Among the four Technology Acceptance Model (TAM) constructs, Behavioral Intention obtained the highest mean score among the four TAM constructs. This finding indicates that respondents demonstrated a strong intention to continue using AI tools in future English writing activities. Although Perceived Usefulness, Perceived Ease of Use, and Attitude Toward Using AI Tools also showed high mean scores, the present study did not examine the structural relationships among these constructs. According to (Davis, 1989), behavioral intention is an important predictor of actual technology use. The high mean score obtained in this study suggests that respondents demonstrated a strong willingness to continue using AI tools in future English writing activities. This finding is consistent with (Lin & Yu, 2023), who reported that positive perceptions of educational technologies contribute to users' willingness to adopt and continue using such technologies. Students' responses further revealed that AI tools were considered helpful for improving writing quality, generating ideas, and increasing efficiency during the writing process. Overall, the findings indicate that EFL students demonstrated a strong intention to continue using AI tools and viewed them as valuable resources for supporting future English writing activities.

4. CONCLUSION

This study explored EFL students' acceptance of AI tools in English writing through the framework of the Technology Acceptance Model (TAM). The findings indicate that students demonstrated positive acceptance across all four TAM constructs, namely Perceived Usefulness, Perceived Ease of Use, Attitude Toward Using AI Tools, and Behavioral Intention. The results suggest that students generally viewed AI tools as beneficial resources that support various aspects of English writing, including idea generation, language improvement, and revision. Among the four constructs, Behavioral Intention recorded the highest mean score, indicating a strong willingness among students to continue using AI tools in future writing activities. In addition, the high scores obtained for Perceived Usefulness, Perceived Ease of Use, and Attitude Toward Using AI Tools reflect students' favorable perceptions of AI-assisted writing technologies. Overall, the findings suggest that AI tools have considerable potential to support English writing practices among EFL learners and may contribute positively to language learning in higher education contexts. The findings of this study provide practical implications for the integration of AI technologies into English language teaching and learning. Educators may consider incorporating AI tools into writing instruction to support students' writing development while promoting responsible and ethical use of such technologies. Despite its contributions, this study has several limitations. The participants were selected through purposive sampling, which may limit the generalizability of the findings. In addition, the data were collected through self-reported responses, making them susceptible to potential response bias. Furthermore, the study focused exclusively on the use of AI tools in English writing and did not examine their application in other language skills. Accordingly, the findings should be interpreted within the scope and context of the present study. Furthermore, future research is recommended to involve participants from different educational contexts and investigate the use of AI tools in other language skills. Additional studies employing different research designs may also provide a deeper understanding of students' acceptance of AI technologies and their impact on language learning outcomes.

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