Applied Research on English Language

V. 15 N. 3 2026
pp: 85-108
http://are.ui.ac.ir

DOI: 10.22108/are.2026.148017.2697
Document Type: Research Article

Supervising Students' Final Project Writing Integrated with GenAI in Indonesian Higher Education: Perceived Challenges and Solutions

Nurul Aini [1*], Bambang Yudi Cahyono [2], Yazid Basthomi [3], Nurenzia Yannuar [4], Isyaku Hassan [5]

[1] *Department of English, Faculty of Tarbiyah and Teacher Training, UIN Syekh Wasil Kedin, Indonesia*

[2 3 4] *Department of English, Faculty of Letters, Universitas Negeri Malang, Indonesia*

[3] *Universiti Poly-Tech, Malaysia*

[3 5] *Faculty of Languages and Communication, Universiti Sultan Zainal Abidin, Malaysia*

Received: 2026/01/05 **Accepted: 2026/07/11**

Abstract: This research aimed to measure and chronicle supervisors' perceived challenges and solutions regarding the integration of GenAI in students' final project writing. The study employed an explanatory sequential mixed-method design conducted in Indonesian higher education, comprising 70 public and 105 private institutions, distributed across 8 islands in Indonesia: Java, Sumatra, Sulawesi, Nusa Tenggara, Kalimantan, Bali, Maluku, and Papua. The research participants consisted of 290 supervisors; 10 of them were selected for an interview. The instruments were a questionnaire covering 15 items on a Likert scale with 4 levels of measurement and 4 interview items validated by two experts. The questionnaire was tested on 25 respondents to prove its validity and reliability. The quantitative results revealed that 60% of the respondents have acceptance and high agreement towards the perceived challenges and solutions on the integration of GenAI in students' final project writing. The qualitative data mentioned that supervisors faced perceived challenges related to the issues of authentic checking, plagiarism, overreliance, critical thinking, creativity, content, source accuracy, AI Illiteracy, overoptimism, a lack of writing enjoyment, and a lack of writing self-efficacy. The supervisors mentioned their perceived solutions, namely raising students' self-awareness of mistakes, promoting guidelines, writing an AI disclaimer, and having intensive discussions, as the perceived solutions to the challenges. The study highlights the importance of creating an official guideline as the basic foundation to manage the integration of GenAI in the final project writing.

Keywords: Final Project Writing, Generative Artificial Intelligence, Perceived Challenges, Perceived Solutions.

[*] **Corresponding Author.**

Authors' Email Address:
[1] **Nurul Aini** (florida_aini@uinkediri.ac.id), [2] **Bambang Yudi Cahyono** (bambang.yudi.fs@um.ac.id), [3] **Yazid Basthomi** (ybasthomi@um.ac.id), [4] **Nurenzia Yannuar** (nurenzia.yannuar.fs@um.ac.id), [5] **Isyaku Hassan** (isyakuhassan@unisza.edu.my)

Introduction

The integration of Generative Artificial Intelligence (GenAI) is experiencing significant growth, particularly for EFL students' writing practice. GenAI, as the newest and most advanced type of OpenAI, has been widely used in academic writing due to its significant impact in providing writing assistance (Aini et al., 2025; Aini et al., 2024). However, the integration of GenAI in writing not only brings positive contributions but also poses challenges. Moreover, there are problematic issues that have become international debates recently (Kim et al., 2025). In the Western educational context, where GenAI is created, the integration of GenAI itself has also been a matter of concern among academicians (Cotton et al., 2024). The integration of GenAI has become one of the urgent international concerns because its fast implementation cuts across countries and transforms the practice in the educational context globally. Both developed and developing countries are struggling with the same problems, such as ethical usage and academic integrity (UNESCO, 2023).

The concerns also occur in the Indonesian context, especially faced by Indonesian supervisors. This statement is supported by the data from the Indonesian Ministry of Science and Technology (Diktiristek, 2024), which revealed that the concerns about the integration of GenAI in writing are frequently mentioned and become more serious. One impact is on the validity of the content, which is not always valid (Michel-Villarreal et al., 2023). In addition, GenAI is only a machine learning prediction tool that mimics the human brain; therefore, the validity of the content needs to be further examined (Aini & Basthomi, 2025). The findings of the previous studies are supported by facts from the Indonesian context, which indicate that GenAI raises concerns (Diktiristek, 2024). The issues on the use of GenAI include perceived challenges on threats (UNESCO, 2023), and matters related to academic integrity namely plagiarism (Ghounane et al., 2024), authenticity (Widiati et al., 2023), bias (AlAfnan et al., 2023), reliability, and accuracy of the content and feedback (Zou et al., 2024), validity of fake content (Dai et al., 2023), and lack of students' creativity (Bhimavarapu, 2023), and critical thinking (Li et al., 2024). The findings are strongly in line with the preliminary study.

The challenges of the integration of GenAI in writing are critically serious and cannot be straightforwardly disregarded. Consequently, research on this variable remains increasingly urgent, and further exploration is needed, as recommended by Sekli et al. (2024). Many studies have demonstrated the challenges of integrating GenAI in English academic writing. Unexpectedly, the evidence from the foregoing research does not provide practical, workable solutions to those challenges. In other words, the previous empirical data fail to cover this variable. It leaves the cases unsolved. This becomes the primary gap in the research, as it is an

unexplored territory and has not been observed by previous researchers. As supervisors of the final project, it is essential to propose workable solutions to mitigate perceived challenges while anticipating more severe issues. Workable solutions represent supervisors' practical, implementable strategies to address perceived challenges or optimize the use of GenAI in the context of the final project. Workable solutions include using AI detection tools, AI literacy, and clear guidelines or policies. These solutions aim to promote the practical, ethical, and balanced use of GenAI in writing.

A previous study mentioned that six English teachers in higher education successfully applied workable approaches in EFL teaching by integrating mobile technology (Cahyono et al., 2023). Those approaches were implemented as solutions to traditional English teaching methods. Unfortunately, the previous research does not explore the supervisors' workable solutions to the perceived challenges of GenAI in final project writing. Very few previous researchers have measured and chronicled the supervisors' workable solutions for integrating GenAI into final project writing. As a result, it provides a definite underexplored area to analyze this variable, with limited attention given to further exploration. This area offers a potential space for researchers to investigate expectations for GenAI integration further. This research finally seeks to address notable gaps in the existing literature by proposing the question: How do the supervisors perceive challenges and solutions to the integration of GenAI in undergraduate students' final project writing? Therefore, this research aims to measure and chronicle supervisors' perceived challenges and solutions to the integration of GenAI in students' final project writing in Indonesian higher education.

Review of the Literature

The Challenges of the Integration of GenAI in Writing

The supervisors' challenges refer to the difficulties, constraints, or barriers that supervisors encounter when their supervisees integrate GenAI during the final writing project. The perceived challenges caused by the integration of GenAI have added to the global debate on alignment of policies, ethical governance, and educational preparedness (Tran et al., 2025). International organizations, academia, and policymakers are starting to realize that the integration of GenAI raises concerns. Some previous studies mentioned that there are some challenges caused by the integration of GenAI in writing, one of which is plagiarism. Plagiarism poses the highest challenge to the ethical issue of academic dishonesty (Michel-Villarreal et al., 2023). It was found that the students copied ideas generated by GenAI without paraphrasing, posing a significant threat to academic integrity (Yang et al., 2025).

In educational settings, it disobeys the fundamental values of honesty, trust, and fairness.

Another issue is with content accuracy, as the quality of the content from GenAI remains a problem. Another data finding from the previous study mentioned that GenAI tools contain errors, inconsistencies, or lack coherence, requiring careful review and editing by human writers (Tran et al., 2025). The challenges around dependency, critical thinking, and creativity have also arisen. Excessive use of GenAI in writing may lead to a decline in human creativity (Alzubi et al., 2025) and critical thinking skills (Larson et al., 2024). Excessive reliance on GenAI suggestions may suppress independent thinking and hurt the development of writing skills (Dwivedi et al., 2023).

The Solutions to the Challenges of GenAI Integration in Writing

Solutions refer to practical, effective, and achievable strategies that can be realistically implemented to address specific issues or challenges in integrating GenAI into academic writing. This means that teachers have already implemented the solutions and found them effective (Cahyono et al., 2023). The solutions aim to protect students' writing from potential future problems that may result from the integration of GenAI in writing.

The solutions can relate to AI literacy to raise students' awareness of the negative perceived challenges associated with using GenAI in writing (Diktiristek, 2024). It is important to ensure that GenAI solutions are investigated intensively, as the responsibility lies in preventing misuse and upholding academic ethical conduct. Notably, there has not yet been research specifically addressing this variable of final project writing in the EFL context; therefore, there is a considerable need to fill the gap. In addition, some previous studies recommend conducting future research on perceived solutions to the challenges posed by GenAI integration in academic writing (Barrett & Pack, 2023), and this makes the urgency to conduct the research in the variable of solutions.

Methods

Design

The research employed an explanatory sequential mixed-methods design to connect initial quantitative results with qualitative data. The mixed-methods design in this study was sequential, as the quantitative instrument was administered first (Creswell & Creswell, 2023). After obtaining the results from the quantitative instrument, the researchers analyzed them to select the targeted participants to obtain qualitative results through interviews (Ivankova, 2014).

Participants

This study was conducted across higher education in Indonesia, comprising 70 public and 105 private institutions from 8 islands, including Java, Sumatra, Sulawesi, Nusa Tenggara, Kalimantan, Bali, Maluku, and Papua. The participants in this research are English lecturers with experience in supervising students in writing research proposals and/or theses for EFL undergraduate final projects at Indonesian universities. Additionally, they had students who used GenAI intensively when writing research. A total of 290 respondents participated in the survey. The characteristics of the 290 chosen participants are illustrated in the demographic profile of survey respondents in Table 1.

Table 1. Profile of Survey Respondents (N=290)

Criteria	Characteristics	Total Number	Percentage (%)
Qualifications	Master	194	67
	Doctoral	96	33
Institution Types	Public	136	47
	Private	154	53
Islands	Java	161	56
	Sumatra	59	20
	Sulawesi	31	11
	Nusa Tenggara	20	7
	Kalimantan	10	3
	Bali	4	1
	Maluku	4	1
	Papua	1	1

10 participants from 8 different islands in Indonesia were then purposively selected to strengthen the supervisors' perceived challenges and solutions. The purpose of choosing participants from different islands is to provide a contextual background on higher education in Indonesia (Ivankova, 2014). The summary of the interview participants is outlined in Table 2.

Table 2. Information of Interview Participants

Participants	Islands	Qualifications	Institutions	Types	Provinces
1	Sulawesi	Master	University	Public	West Sulawesi
2	Nusa Tenggara	Doctor	University	Private	North Nusa Tenggara
3	Kalimantan	Doctor	University	Private	North Kalimantan
4	Sumatra	Master	College	Public	North Sumatra
5	Jakarta	Master	University	Private	Jakarta
6	Aceh	Doctor	University	Public	Aceh
7	Bali	Master	University	Public	Bali
8	Papua	Master	University	Private	Southwest Papua
9	Java	Doctor	University	Private	West Java
10	Java	Doctor	University	Public	East Java

Instruments

The research instrument was developed from the concept of responsible AI use in higher education launched by the Indonesian Ministry of Science and Technology (Diktiristek, 2024). The instrument incorporated constructs derived from both academic integrity (Cotton et al., 2024) and supervisory practices (Alasadi et al., 2023) related to the integration of GenAI in the context of EFL higher education.

Questionnaire

A total of 15-item questionnaire was administered using 3 indicators, namely: process and result, awareness, and content checking. The questionnaire applied a 4-point Likert-type scale to gauge respondents' agreement or disagreement on the perceived challenges and solutions to the integration of GenAI. The scales were 1-4, namely Strongly Disagree (SD), Disagree (D), Agree (A), and Strongly Agree (SA). The “neutral” option was omitted to avoid biased choices and uncertainty about the item's result.

The questionnaire measured two variables: perceived challenges and perceived solutions. 7 items measured supervisors’ perceived challenges that have 1 indicator, namely process and result, with 6 subthemes: plagiarism, overreliance, critical thinking, creativity, content validity, and language use while 8 items measured supervisors’ perceived solutions that have 2 indicators, rising awareness (content validity, plagiarism, and AI Literacy) and content

checking (detection tools, manual paraphrasing, deep supervision, self-ideas development, and manual proofreading).

The questionnaire was tested in the form of pilot testing with 25 respondents. Based on the SPSS results, the R-value score for perceived challenges (0.620-0.793) and solutions (0.719-0.928) is greater than 0.3960. The result of pilot testing was then valid. In addition, an item is considered valid if the significance value (p-value) is < 0.05. In this study, the significance value is 0.001, which is less than 0.05. This indicates that all 15 items in the questionnaire met the criterion and were statistically valid and suitable for data collection. The questionnaire was also tested to assess its reliability, which was calculated using Cronbach's alpha. Based on the calculation of SPSS, the computation of Cronbach's Alpha score was for perceived challenges (0.773-0.814) and solutions (0.947-0.963). The result of Cronbach's Alpha was more than 0.60; therefore, the items proved valid and reliable.

The questionnaire result was also valid with the validation formula: R-values for perceived challenges (0.611-0.802) and solutions (0.712-0.769) > R table 0.115. Moreover, an item is also valid because the significance value (p-value: 0.001) is < 0.05. The reliability was calculated using Cronbach's Alpha for perceived challenges (0.794-0.823) and perceived solutions (0.862-0.867), which was more than 0.60, indicating reliability. In addition, to investigate the construct validity of the questionnaire, an exploratory factor analysis (EFA) was used with Principal Axis Factoring (PAF) and Varimax rotation. Good sampling adequacy was measured using Kaiser-Meyer-Olkin (KMO) with a score of .800, and Bartlett's Test of Sphericity score was significant (0.00 < .001), which is a factor analysis indicator that the data can be used. The analysis obtained three factors with eigenvalues greater than one, and these accounted for the total variance of 51.42%. All factor loadings were between .482 and .782, higher than the .40 recommended minimum. The results indicated that the questionnaire has acceptable construct validity and the items are grouped into meaningful dimensions and not composed of unrelated perceptions.

Interview

The qualitative instrument consisted of a semi-structured interview comprising a total of 4 items validated by 2 experts: a professor in English Language Education with expertise in technology for EFL learners and an English lecturer with 5 years of experience teaching Mobile-Assisted Language Learning and Technology-Enhanced Language Learning courses. The indicators of construct, face, content validity, clarity and readability, logical flow, cultural and contextual appropriateness, feasibility, and timing were all valid. The choice of date and

time was based on the agreement between the researchers and the participants, taking into account their availability. The participants selected interview schedules that did not conflict with their teaching and other work responsibilities, ensuring they were available when needed and reflecting their commitment to focusing entirely on the interview process.

Data Collection

In a quantitative phase, the researchers collected the data from the online survey in Google Forms. A questionnaire was advertised via a WhatsApp group and distributed purposively to EFL university lecturers in the English Department, majoring in English education, linguistics, and/or literature, at higher education institutions in Indonesia. The survey link was made accessible for 4 weeks, from February 1st to 26th, 2025. In the qualitative phase, the researchers interviewed the participants to explore supervisors' perceived challenges and solutions to the integration of GenAI in students' final project writing. Before the interview, the participants were informed about the consent form. The researchers provided the participants with a full explanation of informed consent, assuring them that their data would be entirely anonymous and protected, highlighting the participants' rights to have their data kept private for research only. No psychological, social, or physical harm was imposed on participants, and all procedures were conducted with respect, transparency, and adherence to professional research standards. Data collection was conducted through online interviews via Zoom, lasting 30-40 minutes. Interviews were recorded with the participants' consent to ensure accurate responses for reliable transcription and analysis. Note-taking was employed to highlight key points and capture the details. Data collection with 10 participants was concluded after saturation was reached, indicating that sufficient depth of information had been obtained.

Data Analysis

The results of the questionnaire were processed in SPSS 23 to determine the percentages and the mean score, which was classified into 4 categories based on the framework of Pimentel. The category of level and range percentage was adopted from Pimentel (2019), as shown in Table 3.

Table 3. Pimentel's Category Level

Category Level	Mean Score
High Rejection	1.00-1.75
Rejection	1.76-2.50
Acceptance	2.51-3.25
High Acceptance	3.26-4.00

An independent samples t-test was applied to examine differences in perceived challenges and perceived solutions based on supervisors' academic qualifications, namely master's and doctoral degrees, and types of institutions, namely public and private institutions. In addition, data were analyzed using one-way ANOVA to find the differences between the various demographic regions on the perception of GenAI integration related to challenges and solutions.

The data collected from the qualitative interviews phase with participants were analyzed using thematic analysis with three stages. The first stage was transcription using Google Voice Typing in Google Docs. The second stage of data analysis was coding, which was then processed in a final identification of the fixed themes that fully captured the variables. Throughout this process, the researcher utilized NVivo software as a comprehensive and effective tool for coding. The last stage was interpretation. To enhance validity, the researchers incorporated member checking procedures, considered an essential component of the data verification method. The interview participants were invited to review the transcripts to gain a similar perspective from their point of view. Then, the researcher extensively discussed the results with the interview participants, using terms relevant to the context. The second step involved implementing triangulation through a peer debriefing strategy to achieve the highest level of trustworthiness. The triangulation process, involving two subject-matter experts, significantly supported the validity of the data coding and interpretation. The researcher obtained ethical clearance regarding the participants' rights, confidentiality, and safety, as outlined in Ethical Clearance No. 19.02.04/UN32.14.2.8/LT/2025.

Results

The Supervisors' Perceived Challenges and Solutions on the Integration of GenAI in Students' Final Project Writing

The first finding refers to the perceived challenges supervisors face when their students' final project was written with the integration of GenAI. The items refer to perceived challenges in

the students' writing process and to the final project results. The overall interpretation presents a unique finding that all items received acceptance responses from respondents, and none received rejection responses. This indicates that the respondents accepted or agreed to the statements in the questionnaire. The statistical data are presented in Table 4.

Table 4. Item Scores of Supervisors' Perceived Challenges

Item	SD (%)	D (%)	A (%)	SA (%)	Mean Score	Interpretation
1. My students copy and paste the content generated by GenAI without critically paraphrasing it.	5.9	10.3	49.3	34.5	3.12	Acceptance
2. I found that my students' final project writing, which resulted from GenAI, has a plagiarism issue.	1.4	15.5	49.0	34.1	3.16	Acceptance
3. My students have an over-reliance on the use of GenAI in their final project writing.	5.9	32.4	41.7	20.0	2.76	Acceptance
4. My students have less critical thinking due to the integration of GenAI in the final project writing.	3.4	22.8	41.7	32.1	3.02	Acceptance
5. My students are less creative due to the integration of GenAI in their final project writing.	3.1	27.9	42.8	26.2	2.92	Acceptance
6. I found that my students' use of content from GenAI for the final project is not always accurate.	1.0	16.6	56.9	25.5	3.07	Acceptance
7. I have found that my students' use of language from GenAI is not always appropriate.	2.1	17.2	56.2	24.5	3.03	Acceptance

The second variable in the research refers to the supervisors' perceived solutions to the perceived challenges of GenAI integration in students' final project writing. The perceived solutions focus on two key aspects: raising students' awareness and checking the students' final

project writing content, which is integrated by GenAI. Interestingly, all the items received high acceptance from the supervisors, indicating that they agree and accept each statement on the questionnaire as solutions. The statistical results are summarized in Table 5.

Table 5. Item Scores of Supervisors' Perceived Solutions

Item	SD (%)	D (%)	A (%)	SA (%)	Mean Score	Interpretation
8. I encourage my students to have more awareness that the content generated by GenAI for their final project is not always accurate.	0.7	2.4	30.7	66.2	3.62	High Acceptance
9. I encourage my students to be aware of the negative perceived challenges associated with the use of GenAI in final project writing, such as plagiarism.	1.0	2.8	31.0	65.2	3.60	High Acceptance
10. To increase my students' awareness of the negative impact of GenAI on their final project writing, I provide them with explanations related to AI literacy.	0.3	4.8	44.5	50.3	3.45	High Acceptance
11. To prevent plagiarism caused by GenAI in my students' final project writing, I have asked them to utilise detection tools extensively.	1.0	5.5	36.2	57.2	3.50	High Acceptance
12. To avoid plagiarism resulting from the use of GenAI in my students' final project writing, I require them to paraphrase the sentences they write manually.	0.7	3.8	37.2	58.3	3.53	High Acceptance
13. To maintain my students' critical thinking during supervision, I ask them questions related to the content	0.3	3.4	39.0	57.2	3.53	High Acceptance

Item	SD (%)	D (%)	A (%)	SA (%)	Mean Score	Interpretation
they write, using GenAI assistance, intensively.						
14. To enhance my students' creativity during the final project writing, I encourage them to use their own ideas rather than simply copying content from GenAI.	1.4	1.0	30.7	66.9	3.63	High Acceptance
15. To avoid overreliance on the use of GenAI in my students' final project writing, I actively encourage them to proofread their writing manually.	0.3	5.5	37.6	56.6	3.50	High Acceptance

In addition to descriptive statistics, inferential analyses were also applied to measure possible differences between the demographic groups. Independent samples t-tests were used to compare supervisors' perceptions of challenges and solutions based on the academic qualifications and institution types, and one-way ANOVA was used to explore the differences based on region category. The detailed statistical results are summarized in Tables 6 and 7.

Table 6. The Results of the Independent-Samples T-Test

Variables	T-test						
	Qualification						
	Mean		SD		t	df	Sig. (2-tailed)
	Master	Doctor	Master	Doctor			
Challenge	3.035	2.965	0.552	0.545	1.013	288	0.312
Solutions	3.557	3.523	0.405	0.512	0.613	288	0.541
	Institutions						
	Mean		SD		t	Sig.	Sig. (2-tailed)
	Public	Private	Public	Private			
Challenge	3.013	3.011	0.573	0.530	0.039	288	0.969
Solutions	3.567	3.527	0.464	0.423	0.757	288	0.450

The statistical results indicated no statistically significant difference in the perceived challenges (p = 0.312>0.05) and the perceived solutions (p=0.541>0.05) between supervisors holding master's and doctoral degrees. The statistical data also showed no significant difference in the perceived challenges (p = 0.450>0.05) and the perceived solutions (p=0.969>0.05) between public and private institutions. This indicates that academic qualifications and types of institutions do not significantly influence the supervisors' perceptions of the challenges and solutions on the integration of GenAI in the students' final project writing. In other words, the supervisors from both academic qualification levels and institutional types shared comparable views regarding the challenges and solutions of GenAI integration in higher education.

Table 7. The Result of One-Way ANOVA

One-Way ANOVA				
Variables	df1	df2	F	P (Sig.)
Challenges	7	282	0.841	0.554
Solutions	7	282	1.139	0.339

Results showed that there were no statistically significant differences in perceived challenges, F (7, 282) = 0.841, p = 0.554 > 0.05. Likewise, there were no statistically significant differences for perceived solutions, F (7,282) = 1.139, p = 0.339 > 0.05. The results indicate that the supervisors' perspectives on the challenges and solutions concerning GenAI integration in the students' final project writing, across different regions represented in different islands, were fairly comparable.

This statistical result is then further strengthened by the interview results. The first question asks about the supervisors' perceived challenges when their supervisees integrate GenAI during final project writing. Their responses to the perceived challenges are categorized into 11 themes: authentic checking, issues in critical thinking, plagiarism, overreliance, content accuracy, AI illiteracy, source accuracy, coherence, overpositivism towards AI, lack of writing enjoyment, and lack of writing self-efficacy. Among all the perceived challenges, there are 5 most frequently perceived challenges mentioned by the supervisors. The supervisors reported that the biggest perceived challenges when students integrate GenAI into their processes and final projects are that supervisors often struggle to assess the students' writing content resulting from the integration of GenAI. It is difficult to distinguish students' original work from content generated by GenAI, as shown in Excerpt (1).

1) P2: "The biggest challenge is we need to identify whether or not the writing is

original. Not only focusing on the content, but there is additional work as supervisors."

The second perceived challenge is related to the students' critical thinking, which does not exist, although their writing looks perfect already. The supervisors reported that their supervisees do not truly understand the content of what they wrote. As a result, this becomes an issue of critical thinking because students accept the content uncritically, leading to writing that lacks depth, originality, and critical engagement. The supervisor commented as shown in excerpt (2).

2) P3: "His writing is smooth, good. Well, he does not even know the basics. I tried asking him, there is one, just one sentence, and what does it mean? No, he does not know."

The third perceived challenge deals with the issue of plagiarism. The supervisors mentioned that students often copy and paste information they receive from GenAI without their intervention in modifying or validating the content, and this is the act of plagiarism. Based on the supervisors' observations during the question-and-answer session with their supervisees, they acknowledge that during the writing process, they directly retrieve methodological content from GenAI. The worst case is that the supervisors found the students' final project writing contains more than 60% plagiarism, which indicates a serious issue of academic dishonesty. The supervisor commented as written in Excerpt (3).

3) P4: "The plagiarism is above 30, some are even above 50, 60. There was a case of 70%, the student was then indeed called by the head of the study program."

The fourth perceived challenge refers to the students' overreliance on GenAI. The supervisors mentioned that the intensity of students' use of GenAI is undeniably high, which makes the risk of overreliance even greater. The students use GenAI as a shortcut because it is time-efficient, and they tend to directly access GenAI, where the answers are readily available. However, this easy, quick flow makes students less interested in reading more valid content from other trusted websites, as they rely too much on GenAI. The supervisor explained as shown in Excerpt (4).

4) P7: "They always want to validate everything with GenAI. They do not read articles from other websites; instead, they use GenAI. So, there is an excessive dependence."

The next perceived challenge is the issue of content accuracy. The supervisors mentioned three

areas: fabrication, mismatched terms (word choice), and theoretical mismatch. Those areas lead the students to fabrication or misleading information due to unclear or invalid content; therefore, the supervisors need to ensure that the students' writing content is accurate. One of the participants mentioned this, as described in Excerpt (5).

5) P8: "I am concerned with the accuracy of the content generated by GenAI. Whether it is right or wrong, the accuracy must be checked because GenAI is just a machine. And after checking, I found that some data presented is not totally valid. "

Interview item 2 focused on the supervisors' perceived solutions as stated in a question, "To raise your students' awareness, how do you train your students to be more aware of the importance of AI literacy skills?" The answer to the question is categorized into 3 themes: enhancing AI literacy, raising self-awareness of mistakes, and promoting guidelines. The supervisors focus on helping students understand, use, evaluate, and interact with GenAI. The first practical solution is to enhance the students' AI literacy by explaining the benefits of using GenAI ethically and critically, while also recognizing its limitations. The example supervisor's statement is described in Excerpt (6).

6) P1: "I direct what students can and cannot do with AI. I usually set limits on generating an outline, brainstorming, paraphrasing, and grammar checking, together with their limitations and the impacts on the ethical use of GenAI."

The second perceived solution is to raise the students' self-awareness in identifying their own mistakes. This is the act of showing which GenAI content is true and not true. The supervisors also show the students that references from GenAI are not always accurate. By showing the mistake directly to the students, it builds the students' ability to select and analyze which one is valid or invalid. The supervisor's explanation is quoted in Excerpt (7).

7) P6: "We directly show which one is the mistake then provide direction and demonstrate the ways to solve it. I said, the AI detection of your introduction part is 60% plagiarized from GenAI. You should not do that."

Another supervisor's perceived solution to mitigate this challenge is to conduct comprehensive, regular socialization as part of AI literacy campaigns on the ethical use of GenAI. Socialization occurs during supervision and when teaching academic writing, research methodology, and other related subjects. The supervisor's comment is shown in Excerpt (8).

8) P5: “The first coincided with socializing the guidelines, right at the beginning and during the supervision process. We need to socialize it through seminars, research methods, and other courses.”

Interview item 3 focuses on checking students’ final project writing for plagiarism with the question, “What solutions do you have if you find your students have an issue with plagiarism due to the impact of GenAI integration in final project writing?” The supervisors have proposed 2 strategies to address students' plagiarism issues: manually paraphrasing and including an AI disclaimer. The supervisors explained the exact solution for manually paraphrasing in cases of AI plagiarism, achieving results under 20%. In this part, students need to use their academic writing skills, specifically their ability to paraphrase manually, utilizing their vocabulary mastery and lexical resources to produce effective paraphrases. The supervisor’s statement is shown in Excerpt (9).

9) P10: “So, we do not accept writing that's completely AI-generated because it does not reflect the students’ original ideas, how they think. They paraphrase under 20% is ok.”

To avoid concerns about plagiarism, one solution is to write a disclaimer. A disclaimer serves as a boundary to claim that the content written is not the result of GenAI intervention. The supervisor's statement is shown in Excerpt (10).

10) P9: “I have found an article that uses GenAI. I direct the student to include a disclaimer stating that the article was AI-based to avoid potential conflict.

Interview item number 4 refers to how the supervisors check the students’ critical thinking with the question, “How do you check your students’ critical thinking from their final project writing with the use of GenAI?” All the supervisors agreed that the only way to deal with the students’ critical thinking is by having intensive discussions with the supervisees during supervision. The supervisors described that there was always a deep discussion between them and their supervisees by asking some questions. The questions consist of asking the critical reasons for choosing the variables in the title, the content of the introduction parts, including finding and stating the gap and novelty, the way to formulate the research questions, the theory or framework used in the literature review, and the interrelation between the variables chosen and the theory being used. The supervisor comments as described in Excerpt (11).

11) P1: "I ask what theory they used. What method did you use? Did you ask AI? How did you analyze the data? Are the references real, not fake? Have you checked?"

Discussion

The quantitative results showed that the respondents agreed with and accepted the questionnaire items of perceived challenges on the integration of GenAI in students' final project writing, namely: plagiarism, overreliance, reduction in critical thinking and creativity, and the validity of content and language use. The quantitative data supported by the results of the interview aligned with the theme mentioned in the questionnaire items and further elaborated on an additional challenge, namely authentic checking. The issues of the integration of GenAI are inseparable and deeply intertwined with each other.

Among all the perceived challenges, the issue of plagiarism that has been mentioned has become the central issue, as it has an essential impact caused by other issues that have been raised. It is also in line with the previous research found by Tran et al. (2025) that plagiarism becomes the major issue. Plagiarizing content from GenAI stands out as the primary and most central issue, and as a cause of why the supervisors have difficulties in authentically checking the validity. When the supervisors do not carefully check the validity of the students' final project writing, the issue of plagiarism occurs, as the supervisors stated in the interview results.

In addition, the supervisors reported that the integration of GenAI reduces the students' critical thinking. The supervisors perceived that the students lack a clear understanding of the literature review. Moreover, the supervisors perceived that there is an imbalance between what has been written by the students and what has been explained about the flow of the research methodology. In addition, based on the supervisors' perceptions, the students also showed a lack of writing self-efficacy and writing enjoyment. Similarly, the findings are also in line with the previous research that excessive use of GenAI in writing may lead to a decline in human creativity (Alzubi et al., 2025) and critical thinking skills (Larson et al., 2024). Excessive reliance on GenAI suggestions may suppress independent thinking and hurt the development of writing skills (Dwivedi et al., 2023). The data from the current research strengthens the results of the previous studies.

However, there have also been some previous studies that show contrasting findings that the integration of GenAI enhances students' critical thinking (Chen et al., 2025), improves students' writing self-efficacy (Zhu et al., 2022), and enjoyment (Jin, 2023). This current

research, however, reveals the reverse: the integration of GenAI in the students' final project writing in the university context decreases the students' writing self-efficacy and enjoyment. The current findings add to the uniqueness and diversity of the present findings.

The supervisors' perception related to the students' AI illiteracy also becomes a concern. AI illiteracy is interpreted as students' lack of digital literacy regarding their attitudes towards GenAI, the regulations, and the effects of using GenAI on their writing (Gümüş & Kara, 2025). The theme of AI literacy has been studied previously, but has not been the result of the research findings addressing a supervisor's perceived challenge. Rather, the previous study mainly concentrated on developing the framework of the Generative AI Literacy for Learning Scale (GenAI-LLS). Therefore, the current finding related to AI illiteracy as a supervisor's perceived challenge on the integration of GenAI in students' final project writing adds to the diversity and novelty of the existing previous study.

Another supervisor's perceived challenge is source accuracy, specifically the validity of citations and references generated by students using GenAI. The coherence issue in students' final project writing also presents a challenge based on the supervisors' perceptions. It describes how the students' writing content is fragmented and disorganized in terms of sentence transitions, logical order, and sentence connections. The themes of citation validity and reference validity represent fresh findings since they have not yet been found by prior research, especially when the themes become the supervisors' perceived challenges in the integration of GenAI in the students' final project writing in higher education contexts.

Regarding the perceived solutions on the integration of GenAI in students' final project writing, based on the quantitative data, most supervisors had a high acceptance of the statements stated in the questionnaire items, namely raising awareness on content validity, plagiarism, and AI literacy, checking the content by using detection tools, manual paraphrasing, having deep supervision, using self-idea development, and applying manual proofreading. Interestingly, the quantitative data supported by the results of the interview were consistent with the perceived solutions that were already mentioned in the questionnaire items, with additional solutions on raising students' self-awareness of mistakes, promoting guidelines, writing an AI disclaimer, and having intensive discussions with the supervisees during supervision.

One of the interesting findings related to the supervisors' perceived solutions on content checking is the use of manual paraphrasing. Some previous studies have examined the use of paraphrasing with digital or AI-based tools (Kurniati & Fithriani, 2022; Muneer, 2025);

however, few have addressed the core nature of manual paraphrasing. Manual paraphrasing promotes the ethical writing practices of authorship recognition and correct citation, as seen through an academic integrity approach.

Another interesting solution perceived by supervisors for students' plagiarism is showing students their own mistakes in the content results when the final project writing is affected by the integration of GenAI. Self-awareness is the ability of students to reflect consciously on themselves, including their cognitive functioning, emotional state, and behavioural patterns (Othman, 2025). Raising self-awareness can create a sense of autonomy, motivation, and control over the learning process, improving academic performance and self-development (Sohail & Akram, 2025). The supervisors perceived that by showing the students their own mistakes, they assisted them in becoming more conscious of their own mistakes.

Another perceived solution is promoting guidelines, which is in line with what the Indonesian Ministry of Science and Technology mentioned that the necessity to promote guidelines is becoming more pressing to avoid the problem of student plagiarism and other unwanted academic practices (Diktiristek, 2024). Guidelines can be viewed as preventative measures and not punitive controls by stating the ways GenAI can be integrated. Without institutional or program-level guidance, supervisors might be at a loss on how to assess GenAI-assisted work and respond to possible cases of plagiarism at all times.

Another interesting supervisors' perceived solution is the use of an AI disclaimer. Past research studies have investigated the use of AI disclaimers in research, but in the computer science domain (Henestrosa & Kimmerle, 2025). The supervisors stated that the students should demonstrate their ethical responsibility and honesty by expressly admitting the use of AI tools. By writing an AI disclaimer, based on the supervisors' experiences, the students have the opportunity to mention honesty and academic integrity by explicitly mentioning that part of the final project writing is aided by GenAI. Instead of hiding the use of GenAI, the supervisors perceived that the GenAI disclaimer related to its integration in the students' final project writing is a matter of self-awareness of academic honesty.

The last solution perceived by the supervisors is to have intensive discussions with the supervisees during the supervision process. It is in line with the function of supervision stated by the previous researcher that frequent and significant contact enables supervisors to identify theoretical and methodological ambiguities, receive constructive criticism, and refine their academic arguments (Dai et al., 2023). Intensive discussions foster the students' intellectual engagement through cognitive processes (Adamson et al., 2019). By facilitating the students with intensive discussions, they have the opportunity to clarify their answers, structure their

arguments, and develop their analytical reasoning in response to each question raised by the supervisors (Yang, 2022).

Finally, the perceived solutions of manual paraphrasing, self-awareness of mistakes, promoting guidelines, writing an AI disclaimer, and having intensive discussions offer a unique contribution to the field because previous research has not mentioned them as potential solutions to the perceived challenges caused by the integration of GenAI in the students' final project writing, especially in the EFL higher education context.

Conclusion

Overall, the quantitative results revealed that 60% of the respondents have an acceptance of the perceived challenges and a high acceptance of the perceived solutions regarding the integration of GenAI in students' final project writing. The qualitative data revealed that supervisors faced perceived challenges related to the issues of authentic checking, plagiarism, overreliance, critical thinking, creativity, content, source accuracy, AI Illiteracy, overoptimism regarding AI, a lack of writing enjoyment, and a lack of writing self-efficacy. The supervisors then agreed on the perceived solutions to tackle the challenges, namely, raising students' awareness and their self-efficacy, addressing the issue of plagiarism, and establishing and promoting AI literacy. Finally, the data answered the research questions of measuring and chronicling supervisors' perceived challenges and solutions on the integration of GenAI in students' final project writing.

The research findings are enriching; however, they are limited in some ways. The study has not included observational data and document analysis, which may limit the ability to capture behaviors directly. In addition, the reliance only on the supervisors' reported data, while valuable, still needs to be supported by the students' perspectives, thereby constraining the diversity of views represented. From a practical standpoint, the current findings offer significant recommendations. For academic purposes, supervisors are highly encouraged to develop best practices for solutions based on the cases to address the perceived challenges and create a framework for a valid assessment of the students' final project writing integrated with GenAI. In addition, supervisors are recommended to conduct events such as seminars on AI literacy to raise students' awareness of the critical integration of GenAI in writing. Other recommendations are strongly addressed to institutions by establishing a clear policy in the form of official written guidelines as the basic foundation to manage the integration of GenAI in the final project writing. The last recommendations are intended for future researchers. A case study is recommended to explore stronger cases and to strengthen empirical robustness

from participants' experiences.

References

Adamson, J. L., Coulson, D., & Fujimoto-Adamson, N. (2019). Supervisory practices in English-medium undergraduate and postgraduate applied linguistics thesis writing: Insights from Japan-based tutors. *The Asian Journal of Applied Linguistics, 6*(1), 14-27. https://caes.hku.hk/ajal/index.php/ajal/article/view/594

Aini, N., & Basthomi, Y. (2025). Integration of Artificial Intelligence (AI) in learning English writing in higher education. *Journal of Learning for Development, 12*(2), 364-371. https://doi.org/10.56059/jl4d.v12i2.1596

Aini, N., Basthomi, Y., Suryati, N., & Kurniarahman, I. (2025). Indonesian students' perceived usefulness of the integration of TED Talks for English language learning: The Technology Acceptance Model (TAM) framework. *PASAA Journal, 70*(1), 411-442. http://doi.org/10.58837/CHULA.PASAA.70.13

Aini, N., Kurniarahman, I., Widiati, U., Cahyono, B. Y., & Basthomi, Y. (2024). Indonesian university students' perspectives on integrating AIEd into English language learning. *Issues in Educational Research, 34*(3), 803-824. https://www.iier.org.au/iier34/aini-abs.html

AlAfnan, M. A., Dishari, S., Jovic, M., & Lomidze, K. (2023). ChatGPT as an educational tool: Opportunities, challenges, and recommendations for communication, business writing, and composition courses. *Journal of Artificial Intelligence and Technology, 3*(2), 60–68. https://doi.org/10.37965/jait.2023.0184

Alasadi, E. A., & Baiz, C. R. (2023). Generative AI in education and research: Opportunities, concerns, and solutions. *Journal of Chemical Education*, *100*(8), 2965–2971. https://doi.org/10.1021/acs.jchemed.3c00323

Alzubi, A. A. F., Nazim, M., & Alyami, N. (2025). Do AI-generative tools kill or nurture creativity in EFL teaching and learning?. *Education and Information Technologies*, *30*, 5147–15184. https://doi.org/10.1007/s10639-025-13409-8

Barrett, A., & Pack, A. (2023). Not quite eye to AI: Student and teacher perspectives on the use of generative artificial intelligence in the writing process. *International Journal of Educational Technology in Higher Education, 20*(59), 1-24. http://doi.org/10.1186/s41239-023-00427-0

Bhimavarapu, V. (2023). The impact of generative AI on human productivity in creative writing. *Journal of Student Research, 12*(3), 1-9. https://doi.org/10.47611/

jsrhs.v12i3.4780

Cahyono, B. Y., Khotimah, K., & Batunan, D. A. (2023). Perceived approaches in EFL teaching mediated by mobile technology during the pandemic and post-pandemic: Indonesian EFL teachers' experiences and expectations. *Computer Assisted Language Learning*, *24*(1), 138-159. https://B2n.ir/ty5113

Chen, J., Huang, K., Lai, C., & Jin, T. (2025). The impact of GenAI-based collaborative inquiry on critical thinking in argumentation: A case study of blended argumentative writing pedagogy. *TESOL Quarterly, 10*, 1-28. https://doi.org/10.1002/tesq.3407

Cotton, D. R., Cotton, P. A., & Shipway, J. R. (2024). Chatting and cheating: Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International, 61*(2), 228-239. https://doi.org/10.1080/14703297.2023.2190148

Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

Dai, Y., Lai, S., Lim, C. P., & Liu, A. (2023). ChatGPT and its impact on research supervision: Insights from Australian postgraduate research students. *Australasian Journal of Educational Technology, 39*(4), 74-88. https://doi.org/10.14742/ajet.8843

Diktiristek, D. (2024). *Panduan Penggunaan Generative Artificial Intelligence (GenAI) pada Pembelajaran di Perguruan Tinggi (Guidelines for using Generative Artificial Intelligence (GenAI) in Higher Education learning).* Direktorat Jenderal Pendidikan Tinggi, Riset dan Teknologi. https://dikti.kemdikbud.go.id/epustaka/122191/

Dwivedi, Y. K., Kshetri, N., Hughes, L., Slade, E. L., Jeyaraj, A., Kar, A. K., … Wright, R. (2023). "So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy. International *Journal of Information Management*, *71*, 102642. https://doi.org/10.1016/j.ijinfomgt.2023.102642

Ghounane, N., Al-Zubaidi, K., & Rahmani, A. (2024). Exploring Algerian EFL master's students' attitudes toward AI-giarism. *Indonesian Journal of Social Science Research, 5*(2), 444–459. https://doi.org/10.11594/ijssr.05.02.07

Gümüş, M. M., & Kara, M. (2025). Development and validation of the Generative AI Literacy for Learning Scale (GenAI-LLs). *Australasian Journal of Educational Technology, 41*(4), 1-16. https://doi.org/10.14742/ajet.10236

Henestrosa, A. L., & Kimmerle, J. (2025). "Always check important information!"-The role of disclaimers in the perception of AI-generated content. *Computers in Human Behavior: Artificial Humans, 4*(8) 100142. https://doi.org/10.1016/ j.chbah.2025.100142

Ivankova, N. V. (2014). Implementing quality criteria in designing and conducting a sequential QUAN→ QUAL mixed methods study of student engagement with learning applied research methods online. *Journal of Mixed Methods Research, 8*(1), 25-51. https://doi.org/10.1177/1558689813487945

Jin, Y. (2023). The development and validation of the English writing enjoyment scale. *Perceptual and Motor Skills, 130*(1), 555-575. https://doi.org/10.1177/00315125221137649

Kim, J., Yu, S., Detrick, R., & Li, N. (2025). Exploring students' perspectives on Generative AI-assisted academic writing. *Education and Information Technologies, 30*(1), 1265-1300. http://doi.org/10.1007/s10639-024-12878-7

Kurniati, E. Y., & Fithriani, R. (2022). Post-graduate students' perceptions of Quillbot utilization in English academic writing class. *Journal of English Language Teaching and Linguistics*, *7*(3), 437–451. https://doi.org/10.2991/978238476054-128

Larson, B. Z., Moser, C., Caza, A., Muehlfeld, K., & Colombo, L. A. (2024). Critical thinking in the age of generative AI. *Academy of Management Learning & Education, 23*(3), 373-378. https://doi.org/10.5465/amle.2024.0338

Li, Z., Liang, C., Peng, J., & Yin, M. (2024). *The value, benefits, and concerns of generative AI-powered assistance in writing.* In Proceedings of the CHI Conference on Human Factors in Computing Systems (pp. 1-25). https://doi.org/10.1145/3613904.3642625

Michel-Villarreal, R., Vilalta-Perdomo, E., Salinas-Navarro, D. E., Thierry-Aguilera, R., & Gerardou, F. S. (2023). Challenges and opportunities of generative AI for higher education as explained by ChatGPT. *Education Sciences, 13*(9), 856. https://doi.org/10.3390/educsci13090856

Muneer, I., Shehzadi, A., Ashraf, M. A., & Nawab, R. M. A. (2025). Has machine paraphrasing skills approached humans? Detecting automatically and manually generated paraphrased cases. *Big Data Research, 39*, 100507. https://doi.org/ 10.1016/j.bdr.2025.100507

Othman, N. S., Ahmad, N., Nasir, N. N. A., Yusof, N. A. M., Roslan, M. H., & Mustapha, R. (2025). Awareness of plagiarism among diploma students: A study in UiTM Pahang Branch Jengka campus. *International Journal of Research and Innovation in Social Science, 9*(1), 3097-3103. https://doi.org/10.47772/IJRISS.2025.9010251

Pimentel, J. L. (2019). Some biases in Likert scaling usage and its correction. *International Journal of Science: Basic and Applied Research 45*(1), 183-191. https://www.gssrr.org/index.php/JournalOfBasicAndApplied/article/view/9874

Sekli, G. M., Godo, A., & Véliz, J. C. (2024). Generative AI solutions for faculty and students:

A review of literature and roadmap for future research. *Journal of Information Technology Education: Research, 23,* 1-23. https://doi.org/10.28945/5304

Sohail, A., & Akram, H. (2025). The role of self-awareness and reflection in academic achievement: A psychological and bayesian analysis. *Pedagogical Research, 10*(1), 1-8. https://doi.org/10.29333/pr/15682

Tran, H. N., Le, T. T. N., & Tran, V. B. U. (2025). AI tools in learning academic writing: Benefits and challenges for MA students in the English language studies at the Industrial University of Ho Chi Minh City. *International Journal of AI in Language Education, 2*(1), 74-91. http://doi.org/10.54855/ijaile.25215

UNESCO. (2023). Ministerial roundtable on generative AI in education. https://www.unesco.org/en/articles/ministerial-roundtable-generative-ai-education

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), 1-17. http://doi.org/10.1080/2331186X.2023.2236469

Yang, L. (2022). Focus and interaction in writing conferences for EFL writers. *Sage Open*, *12*(1), 1-20. https://doi.org/10.1177/21582440211058200

Yang, W., Lu, Y., Yeom, S., & Herbert, D. (2025). Adapting GenAI strategies: Understanding models, aims, and challenges in different targeted data and domains. *IEEE Access*, 1-20. https://doi.org/10.1109/ACCESS.2025.3622002

Zhu, X., Guan, Y., & Yao, Y. (2022). Transfer of ideal L1 and L2 writing selves and their impacts on L2 writing enjoyment and integrated writing performance. *Assessing Writing*, *54,* 100674. https://doi.org/10.1016/j.asw.2022.100674

Zou, S., Guo, K., Wang, J., & Liu, Y. (2024). Investigating students' uptake of teacher-and ChatGPT-generated feedback in EFL writing: A comparison study. *Computer Assisted Language Learning*, 1-30. https://doi.org/10.1080/09588221.2024.2447279