



BEYOND EFFECTIVENESS: INVESTIGATING STUDENT SATISFACTION WITH CHATBOT AI IN EFL ACADEMIC WRITING

I Dewa Gede Dimas Satria Udayana¹, Ni Nyoman Padmadewi², I Putu Indra Kusuma³

Universitas Pendidikan Ganesha^{1,2,3}

e-mail: dimas.satria@student.undiksha.ac.id, nym.padmadewi@undiksha.ac.id,
indra.kusuma@undiksha.ac.id

Diterima: 25/07/2026; Direvisi: 07/08/2026; Diterbitkan: 11/08/2026

ABSTRAK

Integrasi kecerdasan buatan dalam pendidikan tinggi telah menjadikan chatbot AI seperti ChatGPT, Gemini, dan Perplexity sebagai alat bantu yang umum digunakan mahasiswa dalam penulisan akademik. Namun penelitian mengenai kepuasan mahasiswa terhadap penggunaannya dalam konteks EFL di Indonesia masih terbatas karena sebagian besar kajian sebelumnya lebih menekankan efektivitas daripada faktor afektif dan pedagogis. Oleh karena itu, penelitian ini berfokus pada kepuasan mahasiswa Pendidikan Bahasa Inggris di Universitas Pendidikan Ganesha (Undiksha) terhadap penggunaan chatbot AI sebagai alat bantu dalam penulisan akademik, serta bagaimana aspek spesifik dari dukungan penulisan berbasis chatbot, yaitu bantuan tata bahasa, pengembangan ide, kualitas umpan balik, dan kemudahan penggunaan, memengaruhi kepuasan tersebut. Penelitian ini menggunakan pendekatan kualitatif dasar dengan melibatkan 10 mahasiswa Program Studi Pendidikan Bahasa Inggris Universitas Pendidikan Ganesha (Undiksha). Partisipan dipilih menggunakan teknik purposive sampling dengan *criterion-based selection* berdasarkan pengalaman mereka dalam menggunakan chatbot AI untuk penulisan akademik. Data dikumpulkan melalui wawancara semi terstruktur dan mendalam terhadap sepuluh mahasiswa yang dipilih menggunakan purposive sampling berbasis kriteria. Rekaman wawancara ditranskripsi secara verbatim, kemudian dianalisis menggunakan analisis tematik hingga menghasilkan tiga tema utama, yaitu kepuasan positif namun bersyarat, dukungan penulisan berbasis chatbot sebagai sumber utama kepuasan, dan kontrol kritis pengguna sebagai batas kepuasan. Hasil penelitian menunjukkan bahwa mahasiswa secara umum merasa puas karena chatbot AI membantu mereka menghasilkan ide, menyusun tulisan, memperbaiki tata bahasa, memperoleh umpan balik, merevisi kalimat, dan mencari referensi secara cepat dan praktis. Namun, kepuasan tersebut bersifat bersyarat karena mahasiswa tetap perlu memverifikasi, merevisi, dan mengontrol keluaran AI yang dapat tidak akurat atau terlalu umum. Penelitian ini menyimpulkan bahwa chatbot AI memfasilitasi penulisan akademik dan meningkatkan kepuasan mahasiswa ketika digunakan secara kritis dan bertanggung jawab sebagai alat pendukung, bukan sebagai pengganti pemikiran dan kemampuan menulis mahasiswa.

Kata Kunci: *Chatbot AI; Kepuasan Mahasiswa; Pendidikan Bahasa Inggris; Penelitian Kualitatif; Penulisan Akademik.*

ABSTRACT

The integration of artificial intelligence into higher education has made chatbot AI such as ChatGPT, Gemini, and Perplexity common tools used by students in academic writing, yet research on student satisfaction toward their use in the Indonesian EFL context remains limited, as most previous studies emphasized effectiveness rather than affective and pedagogical factors. Therefore, this study focused on the satisfaction of English Language Education students at



Ganesha University of Education (Undiksha) toward the use of chatbot AI as an assistive tool in academic writing, and on how specific aspects of chatbot based writing support, namely grammar assistance, idea development, feedback quality, and ease of use, influenced that satisfaction. This study employed a basic qualitative approach involving 10 students from the English Language Education Study Program at Universitas Pendidikan Ganesha (Undiksha). Participants were selected using purposive sampling with *criterion-based selection* based on their experience in using chatbot AI for academic writing. Data were collected through semi structured, in depth interviews with ten students selected using *criterion-based selection*. The interview recordings were transcribed verbatim and then analyzed using thematic analysis, resulting in three main themes, namely positive but conditional satisfaction, chatbot based writing support as the main source of satisfaction, and critical user control as the boundary of satisfaction. The findings showed that students were generally satisfied because chatbot AI helped them generate ideas, organize writing, correct grammar, obtain feedback, revise sentences, and find references quickly and practically. However, this satisfaction was conditional because students still needed to verify, revise, and control AI output that could be inaccurate or too general. This study concludes that chatbot AI facilitates academic writing and increases student satisfaction when it is used critically and responsibly as a supporting tool, rather than as a replacement for students' own thinking and writing ability.

Keywords: *Academic Writing, Chatbot AI, English Language Education, Student Satisfaction, Qualitative Research*

INTRODUCTION

Artificial Intelligence (AI) has become one of the most transformative developments of the twenty-first century, reshaping various sectors including healthcare, communication, and education (Rashid & Kausik, 2024; Russell & Norvig, 2021). In higher education, AI has changed how students learn and develop academic competencies, offering support such as real-time feedback and personalized learning (Michel-Villarreal et al., 2023; Shofiah et al., 2023). In EFL countries such as Indonesia, these tools are increasingly positioned as a means to bridge proficiency gaps, particularly in academic writing, a skill that remains difficult for EFL students because it demands coherent idea organization, accurate grammar, and appropriate academic register (Khan, 2024; Wulandari, 2022).

To address these challenges, students and educators have turned to chatbot AI writing assistants such as ChatGPT, Gemini, and Perplexity, which combine Natural Language Processing with conversational interaction to offer contextual support for grammar, fluency, coherence, and text organization (Aladini et al., 2025; Lubis et al., 2024; Waziana et al., 2024). Because students can accept, adjust, or ignore these suggestions at will, the pedagogical value of chatbot AI depends heavily on how actively learners engage with the feedback it produces (Yeung, 2025; Polakova & Ivenz, 2024). This is precisely why student satisfaction matters: it reflects whether a tool meets learners' functional needs and academic expectations, and it shapes whether the tool is adopted continuously (Kanwar & Sanjeeva, 2022; Wong & Chapman, 2023).

Yet most existing research stops short of this question. Studies document how chatbots improve grammar (Baidoo-Anu et al., 2024), generate ideas (Polakova & Ivenz, 2024), organize paragraphs (Wiboolyasarini et al., 2025), and provide feedback (Louis et al., 2023), generally reporting favorable experiences (Laili et al., 2024; Yuliyanti et al., 2025), but they treat satisfaction as an implicit byproduct rather than a construct worth investigating directly (Debets et al., 2025). Feeling helped or more confident is not the same as satisfaction in a structured,



multidimensional sense, and few studies isolate which specific supports, grammar assistance, idea development, feedback quality, ease of use, actually produce it (Chairiah et al., 2025).

This gap carries particular weight at Undiksha's English Language Education program, and for reasons beyond mere prevalence of use. Students here are not simply EFL learners completing assignments; they are training to become English language educators themselves, meaning how they evaluate chatbot AI now will likely inform how they approach, teach with, or restrict such tools in their own future classrooms. At the same time, they face some of the highest-stakes writing tasks in their academic careers, research proposals and undergraduate theses, where accuracy and originality are closely scrutinized, making the question of whether AI reliance produces genuine skill support or merely convenient shortcuts especially consequential. Preliminary observation confirms substantial reliance on chatbot AI throughout this drafting and revision process, yet whether that reliance reflects authentic satisfaction remains unknown. This uncertainty is not merely academic: Undiksha's lecturers currently face a live decision about whether to adopt, regulate, or restrict AI integration in writing instruction, a decision that cannot rest on assumptions of technological convenience and instead requires evidence grounded in students' actual evaluative experiences.

The novelty of this study lies in its qualitative approach. Where prior research has measured AI effectiveness quantitatively, this study investigates the reasoning behind student satisfaction, mapping how chatbot AI's technical features intersect with the psychological and academic realities of Indonesian EFL students specifically. Accordingly, this study systematically investigates the satisfaction of English Education students at Undiksha toward chatbot AI as an assistive writing tool, guided by two questions: (1) how satisfied are students with the use of chatbot AI as an assistive tool in academic writing, and (2) how do specific aspects of chatbot-based writing support, namely grammar assistance, idea development, feedback quality, and ease of use, influence their satisfaction?

METHODS

This study employed a basic qualitative design (Merriam & Tisdell, 2015) to gain an in-depth understanding of how students evaluated their satisfaction with the use of chatbot AI in academic writing. The research was conducted in the English Language Education (ELE) program at Ganesha University of Education (Undiksha), where the researcher acted as the primary instrument for data collection and analysis. The research was conducted from May, 2026 to July, 2026.

Participants were selected through purposive sampling with criterion-based selection, resulting in ten undergraduate students. Three inclusion criteria were applied: (1) having successfully passed the Scientific Writing course, verified through academic transcripts or departmental records; (2) being actively engaged in writing a thesis or research proposal, confirmed through self-report and, where necessary, academic advisors; and (3) being an active user of chatbot AI tools such as ChatGPT, Gemini, or Perplexity in the current writing process, confirmed through a brief screening. This sample size was determined not by a fixed target but by ongoing monitoring of data saturation during data collection. Following each interview, the researcher reviewed emerging codes and themes to assess whether new interviews continued to generate novel evaluative insights or primarily reinforced patterns already identified. By the ninth interview, no substantively new themes emerged regarding students' satisfaction or the specific aspects shaping it, and the tenth interview was conducted to confirm this pattern of redundancy before data collection was concluded. This approach aligns with Merriam and



Tisdell's (2015) argument that purposive sampling should prioritize depth and information richness over numerical breadth: because participants were required to meet strict criteria ensuring direct, sustained experience with both advanced academic writing and chatbot AI use, each interview yielded substantively rich data, allowing saturation to be reached within a comparatively small sample. Students who did not meet the inclusion criteria were excluded to preserve the relevance and depth of the data. Prior to participation, prospective participants were informed of the purpose of the study, the nature and implications of their involvement, and their right to withdraw at any time without penalty. Written informed consent was obtained from all participants, and their identities were kept confidential by replacing their names with codes (P1 to P10) throughout data reporting and analysis to ensure anonymity.

Data were collected through semi-structured, in-depth interviews. Each interview lasted approximately 45 to 60 minutes and was conducted individually at a time and place convenient to the participant. To allow participants to express their evaluative experiences more freely and precisely, the interviews were conducted bilingually, permitting participants to use both English and Indonesian and to code-switch between the two languages when needed. The main instrument was a semi-structured interview guide developed from the two research questions, covering students' perceived satisfaction and the specific aspects that shape it (grammar assistance, idea development, feedback quality, and ease of use). Before use, the guide was reviewed by two independent experts in qualitative research methodology and English Language Education for clarity, relevance, and neutrality of wording, and minor revisions were made based on their feedback. Each interview was recorded and transcribed verbatim using TurboScribe, and the accuracy of all transcripts was verified against the audio recordings. Field notes were also written during and immediately after each interview to document contextual observations and initial analytical impressions.

The data were analyzed using the six-phase thematic analysis of Braun and Clarke (2017): data familiarization through repeated reading of the transcripts, generation of initial codes for meaningful segments, searching for themes by grouping conceptually related codes, reviewing and refining themes, defining and naming themes, and producing the report supported by representative participant excerpts. Coding was conducted manually, and satisfaction was interpreted qualitatively based on the intensity, consistency, and depth of evaluative expressions across interviews rather than through numerical measurement.

To ensure trustworthiness, the four criteria of Lincoln and Guba (1985) were applied. Credibility was addressed through member checking, prolonged engagement, and peer debriefing; transferability through thick description and clearly defined purposive sampling; dependability through a detailed audit trail; and confirmability through a confirmability audit and ongoing reflexivity recorded in a research journal. As the researcher was a senior undergraduate student within the same department as the participants, the relationship was collegial rather than hierarchical, and the researcher held no supervisory, teaching, or assessment authority over them. This positionality was reflexively documented to minimize any power imbalance, and participants were assured that their responses would not affect their academic standing in any way, so that their participation remained entirely voluntary.

RESULT AND DISCUSSION

Results

These themes were derived from the coded statements of the ten participants, who shared their experiences of using chatbot AI at various stages of their academic writing.



Although the participants used different platforms and had different levels of experience, their accounts revealed consistent patterns regarding what made them satisfied and what limited that satisfaction. Taken together, the three themes provide a comprehensive picture of how students perceived and evaluated chatbot AI as an assistive tool in academic writing. The complete result of the thematizing and coding process is presented in Table 1.

Table 1. Themes, Subthemes, and Codes of Students' Satisfaction with Chatbot AI

Theme	Subtheme	Code
Students' positive but conditional satisfaction toward chatbot AI	Overall positive but conditional satisfaction	OPCS
Chatbot-based writing support as the main source of satisfaction	Idea development and writing organization	IDWO
	Grammar assistance and language confidence	GALC FQRE EUAE
	Feedback quality for revision and evaluation	
	Ease of use, accessibility, and efficiency	
Critical user control as the boundary of satisfaction	Prompting, verification, and post-editing practices	PVPP RUDA
	Responsible use and dependency awareness	

Positive but Conditional Satisfaction

As shown in Table 1, the first theme addresses the first research question, namely how satisfied students were with chatbot AI. The participants generally felt satisfied because chatbot AI supported various stages of academic writing, including generating ideas, drafting, revising, proofreading, correcting grammar, and receiving feedback. Several participants described the tool as helpful, practical, and easy to access, as P5 stated, "I feel very happy and relieved, because when I have a question or confusion, the AI chatbot is there first to answer questions about writing" (P5).

Nevertheless, this satisfaction was not absolute. Most participants emphasized that they still needed to check, revise, and control the AI output before using it. P1, for instance, felt helped in developing ideas and starting a paragraph but remained doubtful about the validity of the information, noting that "it is quite helpful because it can give writing ideas to start my paragraphs, but on the other hand I am a little doubtful about the validity of what it provides" (P1). P10 summarized the pattern by stating, "Very satisfied, but we ourselves still have to control and fix it" (P10). These accounts indicate that the students' satisfaction was positive but conditional: it increased when the output was relevant, clear, and accurate, and decreased when it was too general or unreliable.



Chatbot-Based Writing Support as the Main Source of Satisfaction

The second theme answers the second research question by identifying four aspects of writing support that shaped satisfaction. First, idea development and writing organization emerged as one of the strongest sources of satisfaction, as chatbot AI helped students who felt stuck to start writing, expand simple ideas, and organize academic content. P6 noted that “developing my title, which is only a few words, can be developed further and deeper by the AI chatbot” (P6). Second, grammar assistance and language confidence contributed to satisfaction because the tool helped students correct grammar, adjust tenses, and improve sentence structure, which in turn increased their confidence before submitting work to supervisors. P2 remarked that “when I submit to my lecturer, I already feel a bit more confident, having revised or checked the grammar in the AI first” (P2). However, this support was not universally accepted. P8 was less satisfied and preferred to analyse the corrections independently, explaining that “if it gives an answer, I usually do not use it directly; I always analyze it again myself” (P8).

Third, feedback quality for revision and evaluation influenced satisfaction when the feedback was clear, specific, and actionable. Participants valued the ability to obtain immediate, round-the-clock feedback, and P2 explained that assigning the AI a role produced more specific feedback, stating that “I use point of view, for example, You are my supervising lecturer and I am a student in consultation, so the AI can position itself and give me very specific feedback” (P2). At the same time, the participants did not regard AI feedback as a complete replacement for lecturer or peer feedback, which they considered more reliable and contextual. Fourth, ease of use, accessibility, and efficiency made the tool convenient, as it could be accessed through mobile phones, used at any time, and relied upon under deadline pressure. P5 stated, “Very easy, because AI can be used through the phone we carry everywhere; overall it is very easy, you could say 10 out of 10” (P5). Across these four aspects, the participants consistently stressed that the benefits were not automatic and still required clear instructions and checking.

Critical User Control as the Boundary of Satisfaction

The third theme explains the limits of satisfaction through the control practices that students applied. The participants did not use chatbot AI passively; instead, they gave specific prompts, verified the output, re-prompted when necessary, and edited the result before use. Prompting quality was seen as decisive, as P10 stressed that “we have to very specifically direct this AI chatbot to run as we want; if the prompt is wrong, it will be disruptive and off-target” (P10). Verification was commonly carried out by comparing AI responses with journals, Google Scholar, or lecturers’ explanations, because students were aware that the tool could produce inaccurate information or unsupported references, as P1 noted after double-checking that “the answer didn’t match the data on the internet” (P1). Finally, the participants expressed responsible use and dependency awareness, voicing concerns about over-reliance, direct copy-pasting, plagiarism, AI detection, and reduced independent thinking, and therefore positioned chatbot AI as an assistant rather than a replacement for their own academic work.

Discussion

The first finding indicates that students were generally satisfied with the use of chatbot AI as an assistive tool in academic writing, although their satisfaction was conditional rather than absolute. This satisfaction can be explained through perceived usefulness in the Technology Acceptance Model (Davis, 1989), since students felt satisfied when chatbot AI was



useful for generating ideas, correcting grammar, and completing writing tasks, but became less satisfied when the output was inaccurate or unsuitable for the academic context. This pattern is also consistent with Expectation-Confirmation Theory (Bhattacharjee, 2001), in which satisfaction depends on the match between expectation and actual performance. The result supports previous studies reporting positive student satisfaction with AI tools for academic purposes (Hardiantini et al., 2025; Kartini & Ganesha, 2025; Santosa, 2025), yet a closer reading of the interview data suggests these models, on their own, describe satisfaction as something that happens to a passive recipient of technology. What the present findings show instead is that satisfaction was actively produced: students did not simply receive chatbot output and rate it, they interrogated it, cross-checked it against journals and lecturer explanations, and revised their prompts until the response matched their academic purpose. Satisfaction, in other words, was not a fixed property of the tool but an outcome of an ongoing negotiation between student and system. This reframes what "conditional satisfaction" means: the condition was not merely accuracy of output, but whether the student's own critical labor was rewarded with a usable result. This extends findings that students value AI feedback while remaining wary of its accuracy and authenticity (Baidoo-Anu et al., 2024; Giray et al., 2026) by identifying the specific mechanism, prompting and verification skill, through which that wariness gets converted into functional satisfaction rather than simple distrust.

The second finding shows that students' satisfaction was influenced by specific aspects of chatbot-based writing support, namely idea development, grammar assistance, feedback quality, and ease of use. These aspects reflect perceived usefulness and perceived ease of use in the Technology Acceptance Model (Davis, 1989), as well as the information quality, system quality, and service quality dimensions of the DeLone and McLean (2003) model. Idea development and grammar assistance increased satisfaction by supporting the writing process and building students' confidence; feedback quality helped them revise and evaluate their work; and ease of use made the tool practical and accessible, consistent with prior studies on the benefits of AI feedback in academic writing (Polakova & Ivenz, 2024; Silitonga et al., 2025; Yeung, 2025; Zahari et al., 2025). Where this study departs from that literature is in showing that these four aspects were not independently satisfying features a student could simply access, but were each mediated by the same underlying variable: how deliberately the student directed the tool. A student who prompted vaguely and accepted output uncritically experienced the same four features very differently from one who prompted with a defined role and verified every claim, to the point that two students using an identical tool for an identical task could report divergent satisfaction. This finding pushes back against treating grammar assistance, feedback quality, and the rest as fixed inputs whose presence predicts satisfaction; instead, they function as conditional affordances, whose value is co-produced by the student's own prompting literacy and verification habits (Mohebbi, 2025). The theoretical contribution here is that TAM and DeLone-McLean, built for tools with relatively stable and predictable output, may need revision when applied to generative AI, where the artifact each user evaluates is itself partly authored by the user. Practically, this reframes AI literacy not as an optional skill layered on top of chatbot use, but as the mechanism that determines whether any of the four support dimensions translate into satisfaction at all.

CONCLUSION

This study set out to understand not merely whether English Education students at Undiksha were satisfied with chatbot AI as an assistive writing tool, but what that satisfaction



actually means. Drawing on ten participants interviewed until saturation was reached, the findings show that student satisfaction is best understood as positive but conditional, a negotiated outcome rather than a fixed property of the technology. Students were satisfied not simply because chatbot AI existed or produced fast answers, but because its usefulness, feedback, and accessibility, spanning idea development, grammar assistance, feedback quality, and ease of use, aligned with their academic needs at particular moments. That alignment held only within the boundary of the students' own critical agency: satisfaction contracted when output was inaccurate, overly general, or unsupported by real references, and it was sustained through active prompting, verification, and post-editing rather than passive acceptance. Chatbot AI, in this sense, functioned as a supportive partner rather than a substitute for students' own thinking, and its value grew precisely as students exercised more, not less, control over its use.

These findings should be read within the boundaries of the study's design. The interview guide was structured around four sensitizing concepts tied to the second research question, so the prominence of these aspects in the data reflects the instrument as much as participants' spontaneous emphasis, and some questions were framed in ways that presupposed a degree of satisfaction, which may have subtly encouraged affirmative responses. The study also relied entirely on students' self-reported accounts from a single program at one university, translated from Bahasa Indonesia into English, without triangulation against students' actual writing samples or classroom observation, so the findings are context-bound rather than statistically generalizable. Future research can address these boundaries directly: by using more open-ended, neutrally worded questions to let unanticipated dimensions of satisfaction emerge inductively, by triangulating self-reported satisfaction with analysis of students' actual writing or classroom observation, by extending the sample across more participants, programs, and institutions, by comparing specific chatbot platforms rather than treating chatbot AI as a single category, and by examining whether higher satisfaction with chatbot AI corresponds to measurable improvements in writing quality. Pursued along these lines, chatbot AI can be positioned not as a shortcut around academic effort, but as a tool that, used critically, strengthens both writing competence and learner autonomy.

REFERENCES

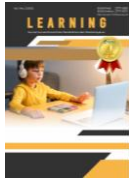
- Aladini, A., Ismail, S. M., Ahmad Saleem Khasawneh, M., & Shakibaei, G. (2025). Self-directed writing development across computer/AI-based tasks: Unraveling the traces on L2 writing outcomes, growth mindfulness, and grammatical knowledge. *Computers in Human Behavior Reports*, 17, 100566. <https://doi.org/10.1016/j.chbr.2024.100566>
- Baidoo-Anu, D., Asamoah, D., Amoako, I., & Mahama, I. (2024). Exploring student perspectives on generative artificial intelligence in higher education learning. *Discover Education*, 3(1). <https://doi.org/10.1007/s44217-024-00173-z>
- Bhattacharjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. *MIS Quarterly*, 25(3), 351–370. <https://doi.org/10.2307/3250921>
- Braun, V., & Clarke, V. (2017). Thematic analysis. *Journal of Positive Psychology*, 12(3), 297–298. <https://doi.org/10.1080/17439760.2016.1262613>
- Chairiah, A. M., Edi, W., & Yana, D. (2025). University students' perception of using ChatGPT toward their writing skills. *Celtic: A Journal of Culture, English Language Teaching*,



- Literature and Linguistics, 12(2), 948–971.
<https://doi.org/10.22219/celtic.v12i2.42797>
- 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/10.2307/249008>
- Debets, T., Kazem, S., Brinke, J., Vos, T. E. J., Maillette de Buy Wenniger, G., & Camp, G. (2025). Chatbots in education: A systematic review of objectives, underlying technology and theory, evaluation criteria, and impacts. *Computers & Education*, 234, 105323. <https://doi.org/10.1016/j.compedu.2025.105323>
- DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, 19(4), 9–30. <https://doi.org/10.1080/07421222.2003.11045748>
- Giray, L., Islam, M. E., & Glo, J. A. (2026). AI hallucinations in academic writing: implications for research integrity. *Naunyn-Schmiedeberg's Archives of Pharmacology*, 1-13.
<https://doi.org/10.1007/s00210-026-05494-4>
- Kanwar, A., & Sanjeeva, M. (2022). Student satisfaction survey: A key for quality improvement in the higher education institution. *Journal of Innovation and Entrepreneurship*, 11, 27.
<https://doi.org/10.1186/s13731-022-00196-6>
- Kartini, M. M., & Ganesha, U. P. (2025). Students' acceptance and enjoyment of ChatGPT in English language learning. *Journal of Educational Study*, 5(2), 171–186.
<https://doi.org/10.36663/joes.v5i2.1100>
- Khan, A. L., Hasan, M. M., Islam, M. N., & Uddin, M. S. (2024). Artificial intelligence tools in developing English writing skills: Bangladeshi university EFL students' perceptions. *English Education: Jurnal Tadris Bahasa Inggris*, 17(2), 345-371.
<https://doi.org/10.24042/ee-jtbi.v17i2.24369>
- Laili, R. N., Wirawati, W. A., Nashir, M., Banyuwangi, S., & Naskah, H. (2024). Student's perception on the use of artificial intelligence (AI) ChatGPT in English language learning: Benefits and challenges in higher education. *Edu Cendikia: Jurnal Ilmiah Kependidikan*, 4(3), 1389-1403. <https://doi.org/10.47709/educendikia.v4i03>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications Inc.
- Louis, N., Rakotoarizaka, P., Musa, H. G., & Geneina, E. (2023). The effect of perceived usefulness and perceived easy to use on student satisfaction: The mediating role of attitude to use online learning. *APMBA (Asia Pacific Management and Business Application)*, 11(3), 323–336. <https://doi.org/10.21776/ub.apmba.2023.011.03.5>
- Lubis, C. U., Ichsanda, B., Hz, R., & Lubis, U. (2024). Perplexity AI on the writing efficiency of EFL students in higher education: Students' insights. *Academic Journal of English Language and Education*, 8(1), 167–178. <https://doi.org/10.29240/ef.v8i1>
- Merriam, S. B., & Tisdell, E. J. (2015). *Qualitative research: A guide to design and implementation* (4th ed.). John Wiley & Sons.



- 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>
- Mohebbi, A. (2025). Enabling learner independence and self-regulation in language education using AI tools: A systematic review. *Cogent Education*, 12(1). <https://doi.org/10.1080/2331186X.2024.2433814>
- Polakova, P., & Ivenz, P. (2024). The impact of ChatGPT feedback on the development of EFL students' writing skills. *Cogent Education*, 11(1). <https://doi.org/10.1080/2331186X.2024.2410101>
- Rashid, A. Bin, & Kausik, M. A. K. (2024). AI revolutionizing industries worldwide: A comprehensive overview of its diverse applications. *Hybrid Advances*, 7, 100277. <https://doi.org/10.1016/j.hybadv.2024.100277>
- Hardiantini, L. R., Ratminingsih, N. M., Utami, I. G. A. L. P., & Santosa, M. H. (2025). The assistance of Quillbot in powering academic writing for higher students: A systematic literature review. *Jurnal Dimensi Pendidikan dan Pembelajaran*, 13(2), 266-279. <https://doi.org/10.24269/dpp.v13i2.11074>
- Russell, S., & Norvig, P. (2021). *Artificial intelligence: A modern approach* (4th ed., Global ed.).
- Santosa, M. H. (2025). Investigating university students' and lecturers' anxiety in the AI-laden English online learning. *Jurnal Pendidikan dan Pengajaran*, 58(2), 416-427. <https://doi.org/10.23887/jpp.v58i2.90847>
- Shofiah, N., Putera, Z. F., & Solichah, N. (2023). Challenges and opportunities in the use of artificial intelligence in education for academic writing: A scoping review. In *Proceedings of the Conference Psychology and Flourishing Humanity (PFH 2023)*. Atlantis Press. https://doi.org/10.2991/978-2-38476-188-3_20
- Silitonga, J. Z., Fikri, M. S., Sujiyani, E., & Lestari, T. P. (2025). The use of writing assistance tools in writing assignments: Students' perspectives. *Journal of English Language Teaching and Cultural Studies*, 8(2), 91–108. <https://doi.org/10.48181/jelts.v8i2.33691>
- Waziana, W., Andewi, W., & Hastomo, T. (2024). Students' perceptions of the impact of AI chatbots on vocabulary and grammar in EFL writing. *Register Journal*, 17(02), 352–382. <https://doi.org/10.18326/rgt.v17i2.352-382>
- Wiboolyasarini, W., Wiboolyasarini, K., & Tiranant, P. (2025). AI-driven chatbots in second language education: A systematic review of their efficacy and pedagogical implications. *Ampersand*, 14, 100224. <https://doi.org/10.1016/j.amper.2025.100224>
- Wong, W. H., & Chapman, E. (2023). Student satisfaction and interaction in higher education. *Higher Education*, 85(5), 957–978. <https://doi.org/10.1007/s10734-022-00874-0>
- Wulandari, Y. (2022). Effective feedback to improve students' writing skills. *Educalitra: English Education, Linguistics, and Literature Journal*, 1(1), 10-17. <https://doi.org/10.5281/zenodo.12795486>



- Yeung, S. (2025). University students' engagement with generative AI-supported automated writing evaluation (AWE) feedback. *Journal of Second Language Writing*, 68, 101203. <https://doi.org/10.1016/j.jslw.2025.101203>
- Yuliyanti, N. (2025). Emerging technologies in English writing: AI chatbots' benefits, challenges, and implications. *Multiple: Journal of Global and Multidisciplinary*, 3(1), 4553–4562. <https://journal.institercom-edu.org/index.php/multiple/article/view/869/>
- Zahari, M., Marini, A., Safitri, D., Dewiyani, L., & Muawanah, U. (2025). Optimizing student writing performance in higher education: A quantitative study of teacher feedback and classroom environment. *Social Sciences & Humanities Open*, 11, 101286. <https://doi.org/10.1016/j.ssaho.2025.101286>