

EFL Lecturers' Perspectives on Ethical Challenges in AI-Integrated English Language Teaching

Ariq Nafil Toris^{1*}

Imam Santosa²

¹Universitas Esa Unggul, INDONESIA

¹Universitas Esa Unggul, INDONESIA

Abstract

Artificial intelligence (AI) offers adaptive feedback, individualized practice, and instructional support in English as a foreign language (EFL) education, yet its classroom use also raises ethical and pedagogical concerns. This qualitative study examines the challenges experienced by EFL lecturers when integrating AI into teaching and the ways they respond to those challenges. Four lecturers from Universitas Esa Unggul were selected through purposive sampling, and data were generated through semi-structured interviews. The transcripts were analyzed thematically through an iterative process of familiarization, coding, theme development, review, and interpretation, using ATLAS.ti used to organize the data. Five interrelated themes were identified: academic integrity and student misuse of AI, unreliable or inaccurate AI output, privacy and data-protection concerns, reduced human interaction and pedagogical value, and the absence of clear institutional policies. Student misuse referred primarily to undisclosed reliance on AI to produce written or take-home assignments in ways that obscured students' demonstrated language ability. Lecturers responded by comparing submitted work with students' known proficiency, cross-checking AI-generated information, avoiding the upload of sensitive student work, restricting device use in selected classroom activities, and developing local rules for AI use. The study's novelty lies in showing, from lecturers' first-hand experiences in an Indonesian higher-education EFL context, that ethical risks are inseparable from assessment design, language-learning interaction, and institutional governance. The findings support process-oriented assessment, explicit AI literacy instruction, responsible classroom integration, and institution-wide guidance on disclosure, privacy, and acceptable AI use.

Keywords: *academic integrity; AI ethics; EFL lecturers; generative AI; higher education*

1. INTRODUCTION

Artificial intelligence has rapidly become part of higher-education teaching and learning. In language education, AI-supported systems can personalize learning materials, offer immediate feedback, support vocabulary development, and help learners plan and revise written work (Gligorea et al., 2023; Song & Song, 2023; Wang et al., 2024). These affordances are particularly relevant in EFL contexts, where

^{1*}Corresponding author, email imam.santosa@esaunggul.ac.id

students may need additional opportunities to practice language, receive individualized feedback, and regulate their learning beyond limited classroom time. AI can therefore extend instructional support, but it should function as a pedagogical tool rather than a substitute for teachers' professional judgment and relational role (AITwijiri & Alghizzi, 2024; Walter, 2024).

The educational value of AI depends on how it is selected, interpreted, and integrated into teaching. Personalized feedback may increase engagement and reduce anxiety when students have sufficient confidence and AI literacy (Song & Song, 2023; Wei, 2023). AI can also assist lecturers with lesson preparation, material adaptation, and formative feedback. However, the same systems can generate fabricated references, decontextualized explanations, culturally or linguistically biased output, and responses that appear authoritative despite being inaccurate (Celik, 2023; Yan & Liu, 2025). These risks are consequential in EFL teaching because students may treat AI-generated language as a reliable model even when its vocabulary, grammar, register, or cultural assumptions are unsuitable for a particular communicative context.

Ethical concerns are similarly embedded in everyday pedagogical decisions. Generative AI can blur the boundary between legitimate assistance and the substitution of students' own work, especially in writing and take-home assessment. Undisclosed AI-generated submissions may make it difficult for lecturers to determine what students can independently understand and produce. Excessive reliance on AI may also weaken critical engagement when learners accept generated answers without evaluating evidence or constructing their own ideas (Das et al., 2025). At the same time, entering student assignments, theses, assessment records, or personal information into third-party systems raises questions about consent, data retention, and access to sensitive material (Mouta et al., 2024; Seo et al., 2021). Responsible integration therefore requires attention to academic integrity, output reliability, privacy, fairness, and the preservation of meaningful human interaction.

Previous research has documented broad patterns in teachers' and students' perceptions of AI. Survey and mixed-methods studies have identified concerns about plagiarism, academic integrity, teacher readiness, regulation, and the ethical implications of AI-supported language learning (Aljabr & Al-Ahdal, 2024; Benek, 2025; Nguyen et al., 2025). Research on educators has also emphasized the need for ethical competence and professional knowledge to make informed decisions about AI use (Abisheva et al., 2024; Celik, 2023). Although these studies establish the importance of responsible AI integration, much of the evidence reports attitudes across relatively large samples or treats ethical issues as separate categories. Less attention has been given to how lecturers experience the intersection of ethics and pedagogy in actual EFL teaching—for example, how uncertainty about authorship affects assessment, how unreliable language output changes feedback practices, or how AI-supported shortcuts influence classroom interaction.

This gap is both empirical and conceptual. Empirically, context-specific qualitative accounts from Indonesian higher education remain limited, particularly accounts centered on lecturers' first-hand experiences rather than general acceptance of technology. Conceptually, ethical risks are often discussed as matters

of compliance, while their direct consequences for language assessment, learner autonomy, interaction, and teacher decision-making remain underexplored. In EFL education, these dimensions cannot be separated: written and spoken language are simultaneously learning processes, communicative products, and evidence of proficiency. A concern about undisclosed AI use is therefore not only an integrity issue; it is also a problem of assessment validity and instructional diagnosis.

The present study addresses this gap by exploring how EFL lecturers interpret ethical and pedagogical challenges arising from AI-integrated teaching at one Indonesian university. Its contribution lies in connecting five commonly discussed risks—academic integrity, output reliability, privacy, reduced interaction, and institutional policy—to the concrete pedagogical work of evaluating language ability, designing tasks, sustaining classroom dialogue, and guiding responsible AI use. The study is guided by two research questions: (1) What ethical and pedagogical challenges do EFL lecturers experience when integrating AI into their teaching? and (2) How do lecturers interpret and respond to these challenges in their classroom practices?

2. METHOD

Research Design and Setting

This study employed an exploratory qualitative design to understand how lecturers interpreted ethical and pedagogical challenges in AI-integrated EFL teaching. A qualitative approach was appropriate because the study sought detailed accounts of lecturers' experiences, concerns, and classroom responses rather than statistical estimates or causal effects (Leavy, 2017). The study was conducted at Universitas Esa Unggul, Jakarta, Indonesia. The site was selected purposively because it provided access to EFL lecturers who had direct experience using AI tools or responding to students' AI use in teaching, learning, and assessment.

Participants and Sampling

Purposive sampling was used to recruit four lecturers who could provide information directly relevant to the research questions. The inclusion criteria were: (a) currently teaching English as a foreign language at the tertiary level; (b) having experience using AI tools or encountering students' AI use in lesson preparation, classroom activities, feedback, or assessment; and (c) being willing to discuss ethical and pedagogical concerns. All participants taught EFL at the same private university. They were selected because their experiences provided information-rich accounts of AI-related issues in assessment, material preparation, classroom interaction, data privacy, and course-level decision making. To reduce the risk of deductive identification in this small, single-institution sample, participants are reported using the pseudonyms L1–L4, and exact faculty affiliation, course titles, and years of service are not disclosed. Participant profiles are presented in Table 1.

Table 1

Participant Characteristics

Participant	Role and institutional context	Relevant AI-related experience	Main issues represented
-------------	--------------------------------	--------------------------------	-------------------------

L1	EFL lecturer at a private university in Jakarta	Encountered AI use in assessment and classroom practice	Academic integrity, output reliability, privacy, interaction, and institutional policy
L2	EFL lecturer and AI user at the same university	Familiar with AI-generated language and course-level AI rules	Academic integrity and institutional guidance
L3	EFL lecturer at the same university	Encountered privacy concerns and AI-mediated classroom behavior	Data protection and reduced classroom discussion
L4	EFL lecturer at the same university	Evaluates AI-generated information and prompt quality	Contextual accuracy and cross-checking

Note. L1–L4 are pseudonyms. Exact faculty affiliation, course titles, and years of service are withheld to reduce identification risk in a four-participant, single-institution study. The profiles are limited to information directly relevant to the analysis.

Data Collection

Data were collected through individual semi-structured, in-depth interviews. The interviews followed an open-ended protocol that invited participants to describe their experiences with AI in EFL teaching, perceived benefits, student use and misuse of AI, assignment authenticity, output accuracy, privacy and data protection, classroom interaction, institutional guidance, and strategies for responsible use. Follow-up questions were used to obtain concrete examples and clarify participants' classroom decisions. The interview responses were documented as transcripts, which served as the primary dataset for analysis. Quotations were selected from the transcripts and attributed only to the pseudonyms L1–L4. The available study records did not contain verifiable information about the exact interview dates, duration, mode, language, recording procedure, or interviewer–participant relationship; therefore, these details are not claimed in the present article.

Data Analysis

The data were analyzed using reflexive thematic analysis, while ATLAS.ti was used as a data-management tool rather than as the analytical method. The analysis followed the phases proposed by Braun and Clarke (2006): familiarization with the transcripts, generation of initial codes, development of candidate themes, review of themes against the coded data and full dataset, definition and naming of themes, and production of the analytic account. Each transcript was read repeatedly, and segments related to ethical concerns, pedagogical consequences, and lecturers' responses were coded. Initial coding produced eight recurrent categories, including academic integrity, output reliability, privacy, human interaction, institutional policy, overdependence, digital readiness, and algorithmic bias. These codes were reviewed iteratively for conceptual overlap and relevance to the research questions, leading to five central themes. Theme boundaries and labels were checked against the transcripts, and representative quotations were retained to show the connection between the interpretations and participants' accounts. Frequencies, where mentioned, refer to coded references across transcripts and are not treated as quantitative measures of importance.

Ethical Considerations

Participants received information about the study and provided informed consent before the interviews. Pseudonyms L1–L4 are used throughout the article to

protect identity. The interview data were stored on a password-protected device and used only for research purposes. Participation was voluntary, and participants could decline to answer questions or withdraw before the completion of data analysis. No formal institutional ethics approval number was reported in the available study documentation. Accordingly, the article transparently reports the safeguards that were documented: informed consent, anonymization, confidentiality, voluntary participation, and secure data storage.

3. FINDINGS

The analysis identified five interrelated themes: (1) academic integrity and student misuse of AI, (2) AI output reliability and accuracy, (3) privacy and data protection, (4) reduced human interaction and pedagogical value, and (5) the lack of clear institutional policies. The themes answer the first research question by identifying the challenges lecturers experienced and the second by showing how they interpreted and managed those challenges. Table 2 summarizes the analytic focus and the principal responses reported by the lecturers.

Table 2

Themes, Pedagogical Consequences, and Lecturer Responses

Theme	Pedagogical consequence	Reported lecturer response
Academic integrity and AI misuse	Uncertainty about whether submitted language represented students' independent proficiency	Compare writing with known ability; question students about process; redesign assessment
Output reliability and accuracy	Risk of fabricated sources, decontextualized content, and unsuitable language models	Cross-check sources; refine prompts; use professional judgment
Privacy and data protection	Possible exposure of student work, theses, and personal data to third-party systems	Avoid uploading sensitive work; minimize personal data; seek clearer guidance
Reduced interaction and pedagogical value	Less discussion, critical thinking, and spontaneous language use when students seek instant answers	Restrict devices in selected tasks; prioritize dialogue and collaborative work
Lack of clear institutional policies	Inconsistent expectations and lecturer-by-lecturer rules	Develop temporary course rules; call for institution-wide policy and training

Note. The table summarizes themes developed from the interview transcripts; it does not represent statistical prevalence.

Academic Integrity and Student Misuse of AI

Academic integrity was the most prominent concern in the lecturers' accounts. In this study, AI misuse referred primarily to students' undisclosed use of generative AI to produce written or take-home assignments in ways that could replace rather than support their own language production. The concern was therefore not simply that students used AI, but that the submitted text could obscure their actual vocabulary, grammar, organization, and ability to explain the content independently. Lecturers described noticing sudden differences between students' familiar classroom performance and the sophistication of submitted work. Because the study relied on

lecturers' perceptions, these observations indicate suspicion of misuse rather than independently verified misconduct.

L2: *"Definitely. I can tell from the writing style. I also use AI, so I am familiar with common patterns in AI-generated language."*

L1: *"It is often visible in written or take-home assignments. The writing style, word choice, or sentence structure can be very different from the student's usual ability."*

The lecturers responded by comparing assignments with students' known proficiency and by asking follow-up questions about the submitted work. Their accounts show that the central pedagogical problem was assessment validity: when AI produces most of the language, the assignment offers limited evidence of what the student can do independently. At the same time, the lecturers did not report using a validated detection procedure, which indicates the need for assessment designs that make students' learning processes more visible instead of relying only on stylistic suspicion.

AI Output Reliability and Accuracy

The second theme concerned the reliability of AI-generated information. Lecturers reported that AI could provide an answer even when it could not access the cited source, combine information from unrelated disciplinary contexts, or produce language that sounded convincing but required verification. In EFL teaching, unreliable output created a dual risk: students could learn inaccurate content and could also imitate inappropriate language, terminology, or register. Lecturers therefore emphasized that AI output should be treated as a draft or suggestion rather than as an authoritative source.

L1: *"AI still provides an answer even when it cannot actually access the source, and that can produce incorrect information."*

L4: *"Sometimes information from another field is used in the language field even though the context is different. We have to give careful prompts and still cross-check the result."*

Cross-checking was the principal response to this challenge. Lecturers compared AI-generated claims with books or other sources, revised prompts, and used their disciplinary knowledge to judge whether the output suited the intended EFL context. These practices suggest that effective AI integration depends not only on technical prompting but also on information literacy and pedagogical content knowledge.

Privacy and Data Protection

Privacy and data protection emerged from uncertainty about how AI platforms collect, retain, process, and reuse information entered through prompts. Lecturers were particularly cautious about uploading student assignments, theses, or identifiable academic records. Their concern reflected limited transparency about whether such material might be stored, detected elsewhere, or used beyond the immediate interaction. The theme therefore involved both personal discomfort and professional responsibility for protecting student data.

L3: *“When we use AI, we cannot simply trust it. I feel uncertain about how the system collects and processes the data that we enter through prompts.”*

L1: *“I avoid entering student work or theses because I do not know how the data are processed, stored, or possibly reused.”*

The lecturers' main protective strategy was data minimization: they avoided entering complete student work or sensitive information into AI systems. However, individual caution could not resolve broader questions about consent, approved platforms, data retention, and institutional responsibility. The findings indicate that privacy protection requires formal guidance rather than reliance on each lecturer's personal judgment.

Reduced Human Interaction and Pedagogical Value

Lecturers also perceived that habitual reliance on AI could reduce classroom discussion and students' willingness to think through a problem before seeking an answer. Students sometimes opened their phones immediately when a question was posed rather than attempting to formulate an explanation, negotiate meaning, or discuss alternatives with peers. This pattern was especially important in EFL education because interaction is not merely a way to obtain an answer; it is itself an opportunity to practice language, receive feedback, and develop communicative confidence.

L1: *“Because students are becoming accustomed to AI, the processes of thinking and classroom discussion can be reduced.”*

L3: *“When students are asked a question, many now open their phones first to search for an answer instead of thinking or discussing it.”*

To preserve pedagogical value, some lecturers restricted smartphone use during selected activities and encouraged students to attempt an answer before consulting AI. Their responses did not reject AI completely; rather, they sought to control the timing and purpose of its use. AI was considered more appropriate as support before or after interaction than as a replacement for spontaneous discussion, peer collaboration, or teacher feedback.

Lack of Clear Institutional Policies

The final theme was the absence of clear institutional rules governing acceptable AI use. Lecturers reported that no specific policy defined when AI could be used, what forms of disclosure were required, which data could be entered into AI systems, or how AI-supported assignments should be evaluated. As a result, lecturers developed course-level rules according to their own teaching needs.

L1: *“There are no specific institutional rules yet, so the decision returns to each lecturer.”*

L2: *“I make my own rules according to the needs of the course.”*

Local flexibility allowed lecturers to respond quickly, but it also created inconsistency across courses. A practice considered acceptable in one class could be prohibited in another, leaving students uncertain and increasing the burden on individual lecturers. Participants therefore interpreted institutional guidance and

professional development as necessary conditions for fair and responsible AI integration.

Synthesis of Lecturer Responses

Across the five themes, lecturers relied on provisional, individual strategies: recognizing discrepancies between AI-like writing and known student ability, cross-checking generated information, limiting sensitive data input, restricting devices during interaction-focused tasks, and creating course-specific rules. These strategies helped manage immediate classroom problems but did not fully address assessment validity, privacy governance, or consistency across programs. The findings therefore position lecturers as active ethical decision-makers while also showing the limits of asking individual teachers to manage institution-wide technological risks alone.

4. DISCUSSION

The study shows that EFL lecturers experienced AI-related ethics as a set of interconnected pedagogical problems rather than as abstract principles. Academic integrity, output reliability, privacy, reduced interaction, and unclear policy shaped how lecturers evaluated student work, selected learning activities, protected data, and maintained meaningful communication. This extends previous studies that identify ethical concerns in broad surveys (Aljabr & Al-Ahdal, 2024; Benek, 2025) by illustrating how those concerns become visible in everyday EFL practice and how lecturers respond when formal institutional guidance is limited.

The connection between academic integrity and assessment validity is particularly important. Previous research has associated generative AI with plagiarism, undisclosed assistance, and threats to academic authenticity (Khalida et al., 2025; Putra Barus et al., 2025). The present findings add an EFL-specific explanation: a written assignment is not only a product to be graded but also evidence of a learner's developing linguistic competence. When AI generates vocabulary, syntax, organization, or argumentation beyond a student's demonstrated ability, lecturers lose information needed to diagnose learning and plan feedback. The problem cannot be solved reliably by recognizing an "AI writing style," especially because detection tools and intuitive judgments may be inaccurate (Gotoman et al., 2025). A more defensible response is to redesign assessment so that learning processes are visible through staged drafts, in-class components, reflective commentaries, version histories, oral explanations, and transparent disclosure of AI assistance.

Output reliability created a related epistemic challenge. AI-generated responses may be fluent enough to appear trustworthy while containing fabricated sources, contextual errors, or unsuitable disciplinary language. This confirms concerns that AI systems can reproduce bias or generate inaccurate information (Celik, 2023; Yan & Liu, 2025). The issue may be especially evident in EFL classrooms because learners can have difficulty evaluating both the factual content and the linguistic appropriateness of an answer. A grammatically polished response may be accepted as correct even when its register, terminology, or cultural framing does not fit the task. Lecturers' practice of cross-checking sources and revising

prompts is therefore valuable, but prompt engineering alone is insufficient. Responsible use also requires source evaluation, disciplinary knowledge, and explicit instruction that AI output is provisional (Knoth et al., 2024; Walter, 2024).

Privacy concerns demonstrate that ethical AI use cannot depend solely on individual digital literacy. The lecturers' reluctance to upload student work aligns with research identifying data opacity and uncertain consent as major issues in AI-supported education (Mouta et al., 2024; Seo et al., 2021). Their caution is professionally appropriate, yet it leaves unresolved questions about approved platforms, anonymization, retention, and institutional accountability. The absence of policy transfers responsibility to individual lecturers, who may adopt different rules and risk unequal treatment of students. Institutions should therefore establish clear guidance on prohibited data, disclosure and consent, approved tools, retention practices, and procedures for responding to suspected misuse. Such guidance should be developed with lecturers rather than imposed as a purely technical policy.

The reduction of interaction is also central to EFL education. Language learning depends on producing meaning, responding to others, negotiating misunderstanding, and receiving human feedback. When students consult AI before attempting to think or speak, they may obtain a quick answer but lose an opportunity to practice these processes. This finding complements research on learner–instructor interaction by showing that the key question is not whether AI is present, but when and for what purpose it is used (Seo et al., 2021; Zhang, 2025). Human-centered integration can use AI to prepare vocabulary, generate examples, or support revision while reserving classroom time for discussion, peer response, oral explanation, and teacher mediation.

The practical contribution of the study is a shift from prohibition toward responsible instructional design. First, assessment tasks should be redesigned to value process, reasoning, and accountable language production rather than only a polished final product. Second, AI literacy should be taught explicitly, including prompt construction, source verification, recognition of limitations, privacy protection, and disclosure of assistance (Ng et al., 2021; Pinski & Benlian, 2024). Third, AI should be integrated into courses through structured activities that require students to evaluate, revise, and explain generated output rather than copy it. Finally, institutional policies should define acceptable and unacceptable uses while preserving lecturers' ability to adapt guidance to different language skills and learning outcomes.

The study also offers a conceptual contribution: ethical AI integration in EFL should be understood as pedagogical governance. Integrity concerns affect the validity of assessment; accuracy concerns affect the quality of language input and feedback; privacy concerns affect professional duty of care; and interaction concerns affect the communicative conditions through which language is learned. Treating these as separate technical problems may produce fragmented solutions. A coherent framework should instead connect ethical principles with task design, feedback, assessment, learner autonomy, and institutional responsibility.

Several limitations should be considered. The study involved only four lecturers from one university, so the findings provide a context-specific account rather than a basis for statistical generalization. The data were self-reported and were not

triangulated with classroom observations, student interviews, assignment samples, or institutional documents. The participants' relationship with the interviewer may also have influenced what they were willing to disclose, particularly if they were colleagues. Future research should include multiple institutions, varied EFL courses, and participants with different levels of AI experience. It should also combine interviews with classroom observation, assessment artifacts, and policy analysis to examine whether reported concerns correspond with actual practices and how interventions such as process-based assessment or AI-literacy instruction influence student learning.

5. CONCLUSION

This study examined the ethical and pedagogical challenges experienced by four EFL lecturers when integrating AI into higher-education teaching and the responses they developed in practice. The findings answer the research questions by identifying five interrelated challenges: uncertainty about academic integrity and student misuse, unreliable or inaccurate AI output, privacy and data-protection concerns, reduced human interaction and pedagogical value, and the lack of clear institutional policies. Lecturers responded through professional judgment and provisional classroom strategies, including comparing submitted work with students' known proficiency, cross-checking generated information, avoiding the upload of sensitive student data, limiting device use during interaction-focused activities, and establishing course-level rules. These findings matter for EFL education because language tasks serve simultaneously as learning activities, communicative practice, and evidence of proficiency. Responsible AI integration therefore requires more than technical skill. It requires assessment redesign, explicit instruction in critical and ethical AI literacy, structured uses of AI that preserve student reasoning and interaction, and institution-wide guidance on disclosure, privacy, and acceptable practice. Larger multi-site studies should examine how these recommendations operate across different language skills and institutional contexts, using interviews alongside observations, student perspectives, assessment artifacts, and policy documents.

REFERENCES

- Abisheva, C., Koldasbaeva, Z., Nossiyeva, N., Ibrayeva, N., Aipova, A., Doldinova, S., Smoilov, S., Aykenova, R., Umirzakova, L., & Idrissova, M. (2024). Formation of ethical competences for AI use in English foreign language teaching. *Qubahan Academic Journal*, 4(4), 191–205. <https://doi.org/10.48161/qaj.v4n4a1256>
- Akbulut, Y. (2025). Beyond self-reports: Addressing bias and improving data quality in educational research. *Journal of Measurement and Evaluation in Education and Psychology*, 16(2), 115–123. <https://doi.org/10.21031/epod.1630477>
- Aljabr, F. S., & Al-Ahdal, A. A. M. H. (2024). Ethical and pedagogical implications of AI in language education: An empirical study at Ha'il University. *Acta Psychologica*, 251, 104605. <https://doi.org/10.1016/j.actpsy.2024.104605>
- Aljabr, F., Zakarneh, B., Annamalai, N., & Al Said, N. (2025). Integrating AI: Challenges and opportunities in teaching English writing skills. *World Journal of English Language*, 15(5), 371–382. <https://doi.org/10.5430/wjel.v15n5p371>
- AlTwijri, L., & Alghizzi, T. M. (2024). Investigating the integration of artificial intelligence in English as foreign language classes for enhancing learners' affective factors: A

- systematic review. *Heliyon*, 10(10), e31053.
<https://doi.org/10.1016/j.heliyon.2024.e31053>
- Benek, K. (2025). EFL learners' and teachers' perceptions of AI-powered language learning technologies: Benefits and challenges. *International Journal of Instruction*, 18(2), 103–120. <https://doi.org/10.29333/iji.2025.1827a>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Celik, I. (2023). Towards intelligent-TPACK: An empirical study on teachers' professional knowledge to ethically integrate artificial intelligence (AI)-based tools into education. *Computers in Human Behavior*, 138, 107468.
<https://doi.org/10.1016/j.chb.2022.107468>
- Das, A., Chaudhery, U., & Yadav Das, N. (2025). Augmenting learning with artificial intelligence: An empirical examination of generative-AI tools and student outcomes in higher education. *International Journal of Research and Innovation in Social Science*. <https://doi.org/10.47772/IJRISS>
- Gligorea, I., Cioca, M., Oancea, R., Gorski, A. T., Gorski, H., & Tudorache, P. (2023). Adaptive learning using artificial intelligence in e-learning: A literature review. *Education Sciences*, 13(12), 1216. <https://doi.org/10.3390/educsci13121216>
- Gotoman, J. E. J., Luna, H. L. T., Sangria, J. C. S., Santiago, C. S., Jr., & Barbuco, D. D. (2025). Accuracy and reliability of AI-generated text detection tools: A literature review. *American Journal of IR 4.0 and Beyond*, 4(1), 1–9.
<https://doi.org/10.54536/ajirb.v4i1.3795>
- Khalida, R., Rahmandri, A., Matilda Magren, S. A., & Nurmianti, E. (2025). Etika teknologi informasi dalam dunia pendidikan: Tinjauan literatur atas penggunaan AI dan isu plagiarisme akademik. *Jurnal SAINTEKOM*, 15(2), 222–234.
<https://doi.org/10.33020/saintekom.v15i2.928>
- Knoth, N., Tolzin, A., Janson, A., & Leimeister, J. M. (2024). AI literacy and its implications for prompt engineering strategies. *Computers and Education: Artificial Intelligence*, 6, 100225. <https://doi.org/10.1016/j.caeai.2024.100225>
- Leavy, P. (2017). Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches. *Guilford Press*.
- Mouta, A., Pinto-Llorente, A. M., & Torrecilla-Sánchez, E. M. (2024). Uncovering blind spots in education ethics: Insights from a systematic literature review on artificial intelligence in education. *International Journal of Artificial Intelligence in Education*, 34(3), 1166–1205. <https://doi.org/10.1007/s40593-023-00384-9>
- Ng, D. T. K., Leung, J. K. L., Chu, S. K. W., & Qiao, M. S. (2021). Conceptualizing AI literacy: An exploratory review. *Computers and Education: Artificial Intelligence*, 2, 100041. <https://doi.org/10.1016/j.caeai.2021.100041>
- Nguyen, L. T. H., Dinh, H., Dao, T. B. N., & Tran, N. G. (2025). Teachers' perceptions and students' strategies in using AI-mediated informal digital learning for career ESL writing. *Education Sciences*, 15(10), 1414. <https://doi.org/10.3390/educsci15101414>
- Pinski, M., & Benlian, A. (2024). AI literacy for users: A comprehensive review and future research directions of learning methods, components, and effects. *Computers in Human Behavior: Artificial Humans*, 2(1), 100062.
<https://doi.org/10.1016/j.chbah.2024.100062>
- Putra Barus, O., Hidayanto, A. N., & Eitiveni, I. (2025). Mapping generative AI's ethical issues in higher education: A FELT-guided systematic review. *Jurnal Pendidikan Indonesia*, 21(2), 159–196. <https://doi.org/10.1966/pji.v21i2.10020>
- Seo, K., Tang, J., Roll, I., Fels, S., & Yoon, D. (2021). The impact of artificial intelligence on learner–instructor interaction in online learning. *International Journal of Educational Technology in Higher Education*, 18(1), 54. <https://doi.org/10.1186/s41239-021-00292-9>
- Song, C., & Song, Y. (2023). Enhancing academic writing skills and motivation: Assessing the efficacy of ChatGPT in AI-assisted language learning for EFL students. *Frontiers in Psychology*, 14, 1260843. <https://doi.org/10.3389/fpsyg.2023.1260843>

- Vasileiou, K., Barnett, J., Thorpe, S., & Young, T. (2018). Characterising and justifying sample size sufficiency in interview-based studies: Systematic analysis of qualitative health research over a 15-year period. *BMC Medical Research Methodology*, 18(1), 148. <https://doi.org/10.1186/s12874-018-0594-7>
- Walter, Y. (2024). Embracing the future of artificial intelligence in the classroom: The relevance of AI literacy, prompt engineering, and critical thinking in modern education. *International Journal of Educational Technology in Higher Education*, 21(1), 15. <https://doi.org/10.1186/s41239-024-00448-3>
- Wang, Y., Wu, J., Chen, F., Wang, Z., Li, J., & Wang, L. (2024). Empirical assessment of AI-powered tools for vocabulary acquisition in EFL instruction. *IEEE Access*, 12, 131892–131905. <https://doi.org/10.1109/ACCESS.2024.3446657>
- Wei, L. (2023). Artificial intelligence in language instruction: Impact on English learning achievement, L2 motivation, and self-regulated learning. *Frontiers in Psychology*, 14, 1261955. <https://doi.org/10.3389/fpsyg.2023.1261955>
- Yan, Y., & Liu, H. (2025). Ethical framework for AI education based on large language models. *Education and Information Technologies*, 30(8), 10891–10909. <https://doi.org/10.1007/s10639-024-13241-6>
- Zhang, J. (2025). Ethics of artificial intelligence in education: Balancing automation and human-centered learning. *Applied Mathematics and Nonlinear Sciences*, 10(1). <https://doi.org/10.2478/amns-2025-0843>