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Navigating ethics: EFL learners' awareness and use of AI tools in writing classes

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ABSTRACT

The rapid integration of artificial intelligence tools into language teaching has transformed English as a Foreign Language learners' approach to writing skills. Some of these tools scaffold their linguistic accuracy, idea generation, and revisions. However, their use also introduces complex ethical dilemmas regarding authorship, originality, and academic integrity. We investigate the ethical awareness and behavioral patterns of 162 Turkish EFL university learners in relation to AI-assisted writing in this mixed-methods study. Two validated survey instruments and thematic analysis of written open-ended responses are used to examine how they perceive ethical risks, the extent to which they revise or disclose AI-generated content, and how variables such as proficiency level and prior instruction in academic integrity influence ethical decision-making. The quantitative findings indicate that EFL learners generally hold favorable perceptions of the pedagogical benefits offered by AI-assisted writing tools. However, the results also show only moderate levels of ethical awareness. With frequent users, a higher tendency toward nondisclosure and overreliance on AI-generated content was exhibited. Analysis of the open-ended responses showed that many participants expressed uncertainty regarding what constitutes acceptable use of AI tools. Furthermore, several of them also reported feelings of guilt and moral tension about their practices. The results of this study thus demonstrate the significance of integrating explicit instruction on the ethical use of AI tools. This study thus offers timely empirical insight into how EFL students interact with emerging technologies and provides actionable implications for enhancing pedagogical design, institutional policy, and digital literacy initiatives in language education contexts.

Keywords
artificial intelligence in language education,
EFL learners,
academic integrity,
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Introduction

AI in English language teaching contexts has reshaped the case of how learners interact with language, writing, and feedback (Gutiérrez, 2023). This transformation is also embedded into students' writing routines in the domain of EFL writing instruction. AI tools offer dynamic support for drafting, revising, and refining texts in this skill (Othman, 2025; Turingan, 2025). Furthermore, they are capable of producing coherent, contextually appropriate output within seconds. These features enable EFL learners to identify and correct grammatical errors,

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diversify vocabulary, and explore new syntactic and rhetorical structures for learners (Lee & Lee, 2024).

Although current research in applied linguistics and digital education frames AI writing tools as pedagogically beneficial for enhancing learner fluency and confidence (Holmes et al., 2019; Shen et al., 2025), this optimistic perspective critically underestimates the profound ethical quandaries that emerge from their use. The integration of AI into the writing process does not merely introduce challenges; it fundamentally destabilizes established academic constructs of authorship, originality, and intellectual integrity (Kaurov & Oreskes, 2025). Hence, the balance between permissible assistance and academic dishonesty becomes dangerously blurred. This case creates a precarious and ambiguous ethical terrain for learners (Keller & Lee, 2003). The urgent need for policy clarity and enhanced AI literacy (Odri & Yoon, 2023) is therefore undeniable.

However, the concern of how EFL learners themselves interpret the ethical dimensions of AI use has been missed in the current literature. Although technical benefits are well-documented, the moral and academic implications remain underexplored (Huang, 2024; Marzuki et al., 2023). Key questions, such as whether learners perceive AI-generated text as an extension of their own authorship, whether they can distinguish between legitimate support and academic misconduct, and most importantly, whether they are being explicitly taught to engage with these technologies through an ethical lens, remain unanswered (Ateeq, 2024; Darvin, 2025). These inquiries have become even more complex for EFL learners due to varying cultural expectations and limited exposure to formal ethics instruction (Yang et al., 2025).

This gap in learner ethics in AI-assisted writing is especially critical for EFL learners. Recent research has evidenced that many learners rely on AI tools due to language anxiety, limited genre knowledge, or inadequate writing instruction (Shin et al., 2025). However, this dependence may weaken independent writing skills and prevent students from mastering academic conventions (Taye & Mengesha, 2024). More seriously, without proper ethical guidance, learners might unknowingly violate integrity rules, submitting unedited AI text, hiding tool use, or misapplying paraphrasing standards. While not intentional, these actions threaten both their learning and institutional credibility (Goddiksen et al., 2023).

This study investigates how Turkish university EFL learners view ethical concerns while using AI tools for assisting writing skills. Their perceptions of AI ethics, actual usage behaviors, and how English proficiency, AI usage frequency, and prior ethics training affect their decisions were analyzed. We combine surveys with open-ended written reflections to capture both quantitative patterns and qualitative reasoning behind students' ethical choices. Through a mixed-methods lens, the research offers a multi-dimensional perspective on academic conduct in digitally mediated EFL language learning contexts. Advancing the scholarly understanding of AI ethics in language learning and demonstrating the need for explicit AI literacy training in writing curricula in EFL contexts are the two substantial propositions.

Literature Review

The Emergence of AI in Language Education

Over the past two decades, AI has transitioned from an experimental feature in educational technology to a central mediator in language teaching. Previous implementations largely were based on Intelligent Tutoring Systems and Automated Essay Scoring (AES) technologies such as e-rater, Criterion, PEG, MY Access!, and IntelliMetric, which provided rule-based feedback on grammar, organization, and surface features (Attali & Burstein, 2006; Page, 2003). However, recent advances in LLMs have broadened the scope of the use of AI tools in classrooms (Holmes et al., 2019). Widely varying in functionality, tools such as Grammarly and QuillBot assist learners by offering real-time grammar and style corrections as well as paraphrasing and summarization support (Calma, 2022; Talapngoen & Thuratham, 2025). These tools further assist learners in better understanding the text content structure of the written text. Recently, generative AI models like ChatGPT, Gemini, and DeepSeek have enabled students to draft entire texts, respond to prompts, and simulate conversation partners (Bui & Barrot, 2025; Gao & Md Yunus, 2025; Nguyen, 2025). This uptrend also marks a substantial shift in how writing support is delivered.

Empirical research has revealed that learners obtained improvements in fluency, vocabulary retention, and real-time corrective feedback, benefits that effectively supplement traditional instructor-led instruction (Dodigovic, 2009; Luckin et al., 2016). For hesitant learners or those grappling with grammatical accuracy, AI functions as an accessible, low-pressure writing assistant, fostering experimentation and incremental skill development (Kohnke, 2023; Song & Song, 2023.

Researchers argue that excessive dependence on AI-generated feedback may risk independent problem-solving abilities (Zou & Huang, 2023). This case also causes risk for learners in prioritizing convenience over cognitive effort in drafting and revision (Steiss, 2024). Furthermore, recent research reveals a potential decline in metalinguistic awareness when students passively accept automated corrections without critical evaluation (Barrot, 2021; Koltovskaia, 2020). Thus, while AI tools provide transformative potential in language teaching, their efficacy endures structured pedagogical frameworks that balance technological assistance with deliberate skill cultivation, ensuring that convenience may not come at the expense of competence.

AI-assisted writing in EFL Contexts

The integration of artificial intelligence into writing pedagogy has started a paradigm shift in EFL educational contexts. Contemporary AI-driven writing assistants have transitioned from supplemental assistance to central mediators of the compositional process. They have also altered learners' engagement with their textual productions. These tools now help learners with both surface-level improvements (e.g., grammatical accuracy and lexical paraphrasing) and higher-order cognitive processes (Barrot, 2021; Boudouaia et al., 2024; Su et al., 2023). This rapid advancement of LLMs necessitates a critical reconsideration of core pedagogical

constructs. The redefinition of feedback mechanisms, the negotiation of distributed authorship, and the reconfiguration of learner autonomy within digitally mediated writing ecologies are now under probe by many researchers.

Recent research proves that AI tools' pedagogical assistance improves various dimensions of writing performance. Furthermore, studies report that AI tools enhance grammar accuracy, vocabulary range, and sentence fluency (Guo & Wang, 2024; Hwang et al., 2023). To illustrate, using a pre-test/post-test design, Boudouaia et al. (2024) found statistically significant improvements in coherence, lexical diversity, and task achievement after learners engaged with ChatGPT during revision. Similarly, Fitria (2021) and Alshammari (2023) reported that students hold positive attitudes toward automated written feedback (AWF) tools. According to their results, the participants gained writing confidence and improved revision quality. These tools, therefore, appear to function as scaffolds for the learners who struggle with mechanical accuracy or idea development.

Beyond performance gains, a growing number of studies explore how learners perceive and engage with AI-generated feedback. Research indicates that many EFL students view AI tools as nonjudgmental, readily available alternatives to teacher feedback (Escalante et al., 2023; Zou et al., 2025). According to Kurt and Kurt (2023), learners favored the immediacy and consistency of ChatGPT feedback. This case further ensured reduced writing anxiety and encouraged experimentation with rhetorical form in their writings. However, some researchers do not widely support this positive view. Particularly when institutional guidelines regarding ethical AI use are absent or ambiguous, these researchers report criticism about accepting AI feedback uncritically (Balalle & Pannilage, 2025; Carlson et al., 2023; Padillah, 2023; Zhao, 2024).

The use of AI tools on learners' feedback practices emphasizes the importance of feedback quality. For instance, Su et al. (2023) found that AI-generated feedback that was contextualized to the text encouraged learners to make more substantive revisions. This feedback modality was particularly related to higher-order writing issues, including argument structure and cohesion. In contrast, generic feedback resulted in superficial changes. Similar patterns were reported by Rahimi et al. (2025), who indicate that automated and task-specific feedback can deepen learners' cognitive engagement during the revision process. This case is also contingent upon their ability to effectively interpret and apply the feedback. As Pourdana (2021) and Warschauer et al. (2023) suggest, whether feedback takes a metalinguistic, directive, or dialogic form influences how, and whether, it is taken up during the writing process. These studies show that the impact of AI-mediated feedback depends less on the presence of automation itself and more on the richness of the feedback, yielding learners' depth of engagement and the quality of their revisions.

Two distinct views in theoretical stance regarding the use of AI tools emerge in literature. Some researchers adopt a cognitive view, framing AI tools as cognitive apprentices that support learner autonomy, self-regulation, and reflective thinking (Barrot, 2023; Wilson & Roscoe, 2019). On the other hand, some contend that overreliance on AI may lead to skill atrophy. This is especially true when learners substitute authentic writing processes with AI-generated content, thereby avoiding crucial developmental stages in skill acquisition (Steiss et al., 2024). This epistemological divergence is substantiated by empirical findings from Bui and

Barrot (2025), whose comparative analysis revealed significant discrepancies between learners' uncritical acceptance of ChatGPT-generated feedback and its actual alignment with human-delivered feedback.

Ethical dimensions of AI-supported writing

The ethical dimensions of AI-generated writing problematize traditional conceptions of authorship. This is a construct historically rooted in human intentionality, scholarly accountability, and epistemic contribution (Hyland, 2016). The emergent capabilities of LLMs to generate discourse that provides surface-level academic standards have precipitated what might be termed an ontological destabilization of authorship. In their study, Li and Wilson (2025) argue that AI tools scaffold cognitive processes. However, they additionally highlight that the absence of conscious intent, the inability to assume responsibility, and the lack of genuine epistemic agency are some of the delimitations of AI tools that are attributed to human authorship.

This ontological distinction has material consequences for academic practice. Organizations like COPE and Elsevier mention these concerns in their editorial and author guidelines. They also warn against attributing authorship to non-sentient entities. Learners' perceptions of authorship are more ambivalent. Yang et al. (2025) found that many undergraduate learners regard ChatGPT as a writing companion. This convergence is observed especially when its suggestions are integrated without substantial revision. In practice, hybrid texts where human and machine contributions are interwoven result in a phenomenon that challenges both pedagogical assessment norms and institutional policies on originality.

Paraphrasing in academic writing has become one of the most controversial issues. AI tools like Grammarly, QuillBot, and Paraphraser.io are widely used by academicians and learners for various purposes. Academicians and learners use these tools for refinement, circumventing authorship altogether and transforming AI into a proxy for originality (Hysaj et al., 2025). These tools may bypass conventional plagiarism detection systems. This case creates an "ethical grey zone" (Goddiksen et al., 2023) wherein technically non-plagiarized outputs nevertheless ethically undermine the spirit of independent academic work.

Recent literature has reported how learners rationalize using AI tools. Zhang et al. (2025) found that nearly 60% admitted to using AI paraphrasing tools to avoid similarity index penalties in a survey, even though they were aware that the ideas originated from external sources. These practices were more prevalent among learners with limited proficiency and less exposure to academic writing conventions. Chan (2025) argues that this case might stem from the fact that both linguistic insecurity and lack of ethical literacy facilitate unethical use of AI tools in academic writing.

Another fraught usage of AI tools is the submission of AI-generated output text as original work by learners. Unlike support-oriented tools such as Grammarly or QuillBot, which are primarily intended to enhance linguistic clarity and stylistic refinement, LLMs like ChatGPT afford users the capacity to fully outsource the cognitive and rhetorical demands of academic writing. Carlson (2023) found that nearly one-third of participating undergraduate learners admitted to submitting AI-composed assignments with minimal, if any, human

intervention. Although the underlying motivations vary, from academic pressure and time scarcity to uncertainty about writing conventions, the educational ramifications are far-reaching.

Transparent ethical guidelines regarding the use of AI tools are an emerging and alarming ethical concern in the academic writing landscape. Although publishers and institutions have begun using guidelines on disclosing AI-generated assistance, such policies still remain insufficient in EFL contexts. While awareness of AI tools was widespread among learners and instructors, Neff et al. (2024) noted a lack of formal institutional guidance on their ethical use in their study. In light of these findings, the university involved in the study amended its academic integrity policy to address AI use more explicitly, following internal discussions and faculty-led initiatives. Ethical concerns of AI-assisted writing are also shaped by sociocultural factors. The use of AI tools is regarded as misconduct in one academic culture, whereas this case may be seen as acceptable assistance in another. Kessler (2020) and Tanaka (2023) report that learners from collectivist cultures may not perceive co-authoring with AI as ethically problematic. This cultural relativity complicates the development of universally accepted norms for responsible usage of AI tools.

The pedagogical advantages of embedding AI tools into EFL writing have been evidenced in literature (Alharbi, 2023; Söğüt, 2024; Wale & Kassahun, 2024). However, this integration remains a shortfall with ethical concerns in these contexts. A pronounced empirical gap exists regarding the interplay between learner variables, such as linguistic proficiency, prior ethics education, and patterns of tool usage, and their consequent impact on ethical decision-making. This gap justifies the need for a mixed-methods approach. Quantitative data can identify trends and associations between learner characteristics and ethical awareness, while qualitative insights can uncover how students interpret and justify their choices. This study investigates to contribute a more nuanced understanding of academic writing in the age of AI by examining what learners do and how they think about the use of AI tools.

Methodology

Research design

This study employed a convergent mixed-methods design to investigate EFL learners' ethical awareness, perceptions, and behaviors in relation to AI-supported academic writing. A convergent mixed-methods design is a specific type of mixed-methods research approach in which quantitative and qualitative data are collected (Johnson & Onwuegbuzie, 2004). Separately but simultaneously collected, qualitative data and quantitative data are analyzed independently and then merged or compared during the interpretation phase (Creswell & Clark, 2018). Quantitative data were gathered through two structured Likert-scale questionnaires. Qualitative data, on the other hand, were obtained from open-ended responses embedded in the same instruments. The integration of both data-gathering types and analysis allowed us for a triangulated investigation of learners' attitudes, ethical reasoning, and usage patterns. This probe also provided both breadth and depth of understanding. The rationale for this design stems from the complexity of the research problem, which involves not only measurable

constructs (e.g., frequency of AI use, self-reported ethical behavior) but also personal, context-sensitive interpretations of academic integrity.

Participants

The participants of this study were 162 university-level EFL learners enrolled in preparatory writing courses at a state university in Türkiye during the spring 2025 academic term. All participants were undergraduates majoring in programs such as tourism guidance, aviation and electronic engineering. They were already enrolled in my writing courses during the semester in which data were collected. This case enabled recruitment practical and non-disruptive. Since they were actively completing AI-supported writing tasks as part of the existing curriculum, they formed a naturally available participant group without requiring additional coordination or sampling. Therefore, the participants were selected through convenience sampling (McKinley & Rose 2020). This sampling strategy thus aligned with our study's exploratory focus on authentic EFL classroom contexts. The demographic distribution of the participants was a homogenous group of young adult learners with an age range of 18 to 22 years.

The participants were enrolled in the same institutional writing course; however, their actual proficiency levels varied considerably within that cohort. I therefore used self-reported proficiency to capture this internal variation more accurately and reflect their perceived writing competence or the confidence that shapes their ethical decision-making when using AI tools. The preparatory writing courses followed a process-oriented academic writing approach with genre-based instruction, in line with the curriculum of the university's English preparatory program. Students were taught paragraph and short-essay genres (e.g., descriptive, opinion, cause–effect paragraphs) through staged drafting, feedback, and revision cycles, which provided a pedagogical foundation for examining their use of AI-supported writing tools.

When considering their English proficiency levels, the participants' self-reported English proficiency levels were pre-intermediate (52%) and intermediate (41%). On the other hand, a small number (7%) reported beginner-level proficiency. Therefore, this subgroup was excluded from inferential analyses due to its limited size and potential for skewed variance. The vast majority of participants (89%) stated that they had prior experience with at least one AI-supported writing tool. Informed consent was obtained digitally prior to survey administration, and the participation was voluntary. The sample size was sufficient for both descriptive and inferential statistical procedures.

Instruments

The AI-Supported Writing Survey and the Ethical Awareness in AI-Assisted Writing Questionnaire were used as the primary data collection instruments in this study. To elicit the insights of EFL learners' ethical orientations, usage patterns, and evaluative stances toward AI-assisted academic writing, both instruments were systematically constructed to reflect the study's overarching aims. Therefore, attention was paid to capturing both behavioral dispositions and attitudinal orientations in relation to their interaction with generative AI tools. An integrative reading of recent literature was also performed to ensure conceptual alignment

with emergent concerns in AI-mediated pedagogical contexts (Abuadas & Albikawi, 2025). This process ensured conceptual alignment with emergent concerns in AI-mediated pedagogical contexts (e.g., Aljabr & Al-Ahdal, 2024; Balalle & Pannilage, 2025; Cotton et al., 2023; Shen et al., 2025; Tsai et al., 2024; UNESCO, 2023).

AI-Supported Writing Survey

To investigate learners' perceptions, pedagogical evaluations, and actual usage patterns of AI-based tools in writing tasks, the AI-Supported Writing Survey was developed and validated for the context of academic EFL instruction. The final instrument consisted of 28 items, and each item is rated on a 5-point Likert scale (1 = Strongly Disagree to 5 = Agree). This survey was designed to reflect two theoretically grounded latent constructs drawn from prior research. These constructs were AI Integration and Writing Skill Development. Exploratory Factor Analysis (EFA) using Principal Component Analysis (PCA) with Varimax rotation was used to establish construct validity and reveal underlying factor structures. The factor analysis resulted in robust two-factor solution. The first factor, AI integration, accounted for 51.24% of the total variance and comprised items targeting learners' evaluations of AI tools' overall usefulness, the quality and personalization of feedback they provide, and the alignment of such tools with institutional or ethical norms.

Writing Skill Development as the second factor included the items 15–16, 18–22, and 24–28. This factor explained an additional 45.30% of the variance. These items assessed the learners' perceptions of how AI tools improve various aspects of writing proficiency. These aspects included sentence-level fluency, paragraph coherence, grammatical accuracy, and overall confidence in composing texts. "AI tools help me improve sentence fluency," and "My writing becomes more coherent after using AI support" were some of the illustrative statements that were included in these items. The factor structure was statistically confirmed through a Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (KMO = .842), and Bartlett's Test of Sphericity was significant ($\chi^2(300) = 1418.88$, $p < .001$), confirming that the dataset was appropriate for factor analysis.

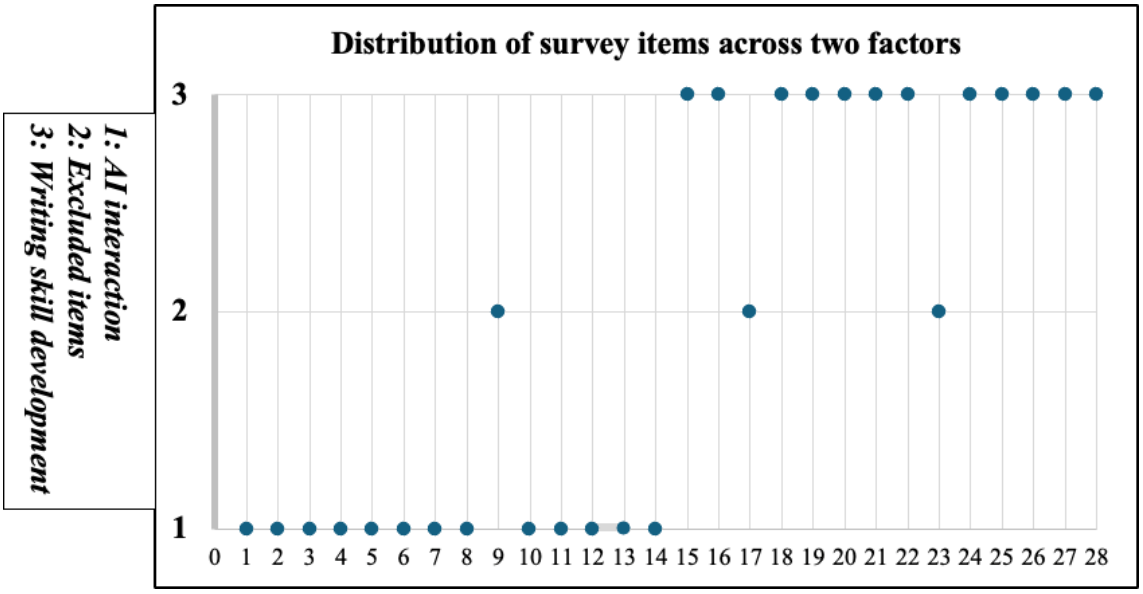


Figure 1. Factor structure of AI-supported writing survey

Three items (9, 17, and 23) were excluded from the final model. Compromising the clarity and coherence of the factor structure, these excluded items showed either insufficient factor loadings or problematic cross-loadings. Their removal enhanced the overall construct validity and internal consistency of the instrument (see Figure 1).

3.3.2. Ethical Awareness Questionnaire

The second instrument, the Ethical Awareness in AI-Assisted Writing Questionnaire, was The Ethical Awareness in AI-Assisted Writing Questionnaire, as the second instrument, was developed to investigate EFL learners' ethical orientations, conceptual frameworks, and decision-making processes regarding their use of AI-generated content. The instrument contained 18 items in total. These were constructed to obtain a deeper understanding of various aspects of EFL learners' ethical engagement in their writing skill development. The instrument included 10 closed-ended items focusing on behavioral indicators, including authorship attribution, disclosure, and revision processes, as well as 5 attitudinal statements measuring attitudes regarding responsible AI utilization. In Table 1, the item distribution and factor structure that emerged during instrument validation was presented.

Table 1. *Distribution and Factor Structure of the Ethical Awareness in AI-assisted Writing Questionnaire*

Factor 1: Ethical Behavior	**Factor 2: Ethical Beliefs**	**Excluded Items**
Items 1–5 (Behavioral patterns: revision, disclosure, authorship	Items 6–10 (Attitudes toward responsible AI use)	Items 11–14 (Cross–loaded or low factor loadings)
Items 16–18 (Open-ended responses: contextual ethical reasoning		

Furthermore, three open-ended prompts were included to elicit reflective and context-specific opinions of learners. These questions aimed to unveil how and what they think about ethical dilemmas and suggest responsible academic behavior. The construction of these items was grounded in existing scholarly work on academic dishonesty, plagiarism awareness, the ambiguity of AI authorship, and culturally situated perceptions of ethics in digital learning (Lipson, 2023; Tanaka, 2023). Expert reviews were provided by colleagues from the PhD program. Following scrutinizing the initial draft to ensure content validity, revisions were made to enhance clarity and conceptual alignment, and the instrument was then pilot-tested in the school. It was found that there was a strong internal consistency. This conclusion was indicated by a Cronbach's alpha of .84. The open-ended section was included to complement the quantitative data. Thus, a more comprehensive understanding was ensured through this triangulated analysis.

The methodological selection of structured questionnaires for this investigation was predicated on their established efficacy in educational research for efficiently generating reliable, standardized, and scalable quantitative data (Cohen et al., 2018; Dörnyei, 2007). These instruments served to operationalize latent constructs, including ethical awareness, attitudinal dispositions toward AI, and behavioral usage patterns, into empirically measurable variables, thereby permitting rigorous statistical examination. Likert-type scales were used to elicit gradational variations in perceptions and self-reported behaviors across the cohort, whereas open-ended items provided discursive, contextualized data that enriched and complexified the quantitative findings.

This hybrid instrument design encapsulates the principles of convergent mixed-methods research. Quantitative and qualitative data are collected simultaneously. Yet, they were analyzed separately and then integrated for interpretation (Creswell & Plano Clark, 2018). Such an approach afforded the dual capacity to empirically verify hypothesized relationships and identify broad trends. This approach allowed the researchers not only to test hypotheses and detect patterns but also to access learners' moral reasoning, digital literacy levels, and culturally embedded conceptions of academic integrity. This triangulation of data types thus consolidated the construct validity and analytical profundity of the study. This process enabled a more comprehensive investigation of ethical engagement with AI-assisted writing tools in EFL university contexts.

Data collection procedure

Data for this study were collected during the spring 2025 academic semester over a four-week period. Prior to distribution, both instruments were digitized and administered through Google Forms. This data-gathering process allowed us for efficient dissemination, participant anonymity, and streamlined data management. The surveys were shared with the participants through the official university learning management system. Thus, we also ensured accessibility and relevance to their ongoing writing coursework. Participants were first given a concise summary of the study's purposes, concerns regarding ethics, and data utilization procedures. They were clearly notified that participation was totally confidential, and would not affect their academic grades. Electronic consent with notification was acquired prior to participants' progression to the surveys.

The surveys were completed asynchronously and allowed the participants to respond at their own pace. The AI-Supported Writing Survey was presented first. This survey was followed by the Ethical Awareness in AI-Assisted Writing Questionnaire. This sequence included a clear transition and separate sections to minimize fatigue and preserve response quality. Upon closure of the data collection period, responses were downloaded into Excel and SPSS for quantitative analysis. Later on, open-ended responses were extracted into a qualitative analysis framework using NVivo. This structured and ethically sound procedure ensured data reliability and enabled respecting participants' autonomy and academic schedules.

Data analysis

The data analysis strategy conducted in this study was based on a convergent mixed-methods design, enabling the integration of quantitative and qualitative findings to explore EFL learners' ethical awareness and behaviors concerning AI-supported writing. The Statistical Package for Social Sciences, version 26.0 (SPSS 26), was used for the quantitative data analysis. On the other hand, qualitative data were analyzed through inductive thematic analysis using NVivo (Version 15). Descriptive statistics were used to characterize central tendencies and variability within the dataset pertaining to learners' perceptions of AI tools and self-reported ethical practices. Means, standard deviations, and frequency distributions were calculated for all pertinent variables.

A series of inferential statistical tests were performed to test the four hypotheses. A one-sample t-test was first conducted to determine whether the mean ethical awareness score of the student sample deviated significantly from a neutral theoretical benchmark. This analysis enabled the empirical basis for addressing the hypothesis that ethical awareness was either low or moderate within the population (H1). Subsequently, a Pearson correlation test was conducted to investigate the relationship between English language proficiency and ethical awareness. This test was aimed to identify whether higher language proficiency was associated with a greater degree of ethical engagement among learners (H2). To evaluate whether frequent AI users were more likely to bypass ethical practices, a chi-square test of independence was performed (H3). As the final step in quantitative analysis, an independent samples t-test was

conducted to compare the ethical awareness scores of students with and without prior academic integrity instruction. This test targeted to reveal the potential impact of institutional training (H4).

Qualitative data were analyzed through inductive thematic analysis following Braun and Clarke's (2006) six-phase model to deepen the understanding of learners' ethical perceptions and reasoning. First, all open-ended responses were reviewed repeatedly to establish familiarity with the data, after which initial codes were generated to capture recurrent ideas, ethical concerns, and emotional language. These codes were then organized into broader thematic categories. The identified categories included originality concerns, pragmatic justification, and uncertainty about boundaries. Following this process, I then refined iteratively to ensure conceptual clarity and prevent thematic overlap (Braun & Clarke, 2006; Nowell et al., 2017). A colleague from the PhD program as the second coder independently analyzed 25% of the dataset. The second coder did not teach the participating groups and was not involved in data collection. We discussed and resolved coding discrepancies with the second coder before finalizing the full coding scheme. I maintained a reflexive stance throughout the process to mitigate potential bias arising from my dual role as instructor-researcher.

This process emphasized the development of internally coherent yet distinctive categories, which is consistent with trustworthiness standards in qualitative inquiry. Emerging themes were linked with the patterns observed in the quantitative data. In this interpretation phase, methodological triangulation and validity of the findings were thus confirmed (Creswell & Plano Clark, 2018; Dörnyei, 2007). Representative participant quotes were selected to illustrate each theme and were translated from Turkish into English. Thus, we aimed to preserve semantic nuance while maintaining clarity and surfaced the participants' views and ethical dilemmas often obscured in numeric trends. (Polkinghorne, 2005).

This research was conducted in accordance with ethical guidelines for educational research. Ethical approval was obtained from the Institutional Review Board prior to the dissemination of the AI-supported Writing Survey and Ethical Awareness Questionnaire. All participants received comprehensive information regarding the study's objectives. Furthermore, they were explicitly advised that their involvement was voluntary. They were further guaranteed the right to withdraw at any stage without incurring any academic or personal repercussions. Digital informed consent forms were obtained from each participant preceding survey administration. To safeguard participant privacy, stringent protocols for anonymity and confidentiality were implemented; all data were collected using non-identifiable forms, and no personally identifiable or sensitive information was solicited. Acquired data were utilized exclusively for scholarly research purposes. Participants were also transparently notified that the study investigates normative practices within digitally mediated writing contexts.

Results

Descriptive results: Ethical awareness and perceptions of AI

The descriptive analysis results showed favorable perception regarding the use of AI-supported tools among the participants. According to the responses to key items, most of the participants acknowledged that AI tools scaffolded in grammar correction and writing fluency. The items such as "AI tools help me identify and correct grammatical errors" and "AI adds value to my writing experience" resulted in high mean scores (M = 4.14, SD = 0.67 and M = 3.97, SD = 0.68, respectively). In a similar vein, the item "AI-generated feedback improves my writing" yielded a mean of 3.99 (SD = 0.75).

However, a different pattern emerged in relation to ethical behavior. Although 89% of participants had used AI tools prior to the study, only 67.3% reported that they consistently revised their writings before submission. Furthermore, a considerable number of the participants felt uncertainty about the ethical boundaries in using AI tools. It is significant to note here that the participants did not receive and formal instruction on the ethical use of AI tools in writing classes. Only 54% agreed that submitting AI-generated content without disclosure constitutes academic dishonesty. On the other hand, 35% of the participants stated that they were unsure whether such actions could be considered plagiarism. The following table (Table 2) illustrates the descriptive statistics for key items related to AI perceptions and ethical awareness.

Table 2. *Descriptive Statistics across Arguments*

Items	***M***	***SD***
AI helps correct grammar	4.14	0.67
AI improves writing	3.99	0.75
AI adds value to learning	3.97	0.68
Consistently revise AI output	3.67	0.77
AI–generated=plagiarism?	3.54	0.88
Feel guilty submitting unedited AI	3.22	1.1
Confidence in ethical AI use	3.38	0.91

Mixed attitudes toward authorship and ethical self-regulation were reported through the item "I feel guilty if I submit unedited AI-generated content" with a moderate mean of 3.22 (SD = 1.10). This ambivalence was also evident in responses to the item, "I know how to use AI tools ethically." This item resulted in a mean of 3.38 (SD = 0.91) that reflects partial confidence and a potential gap in ethical literacy.

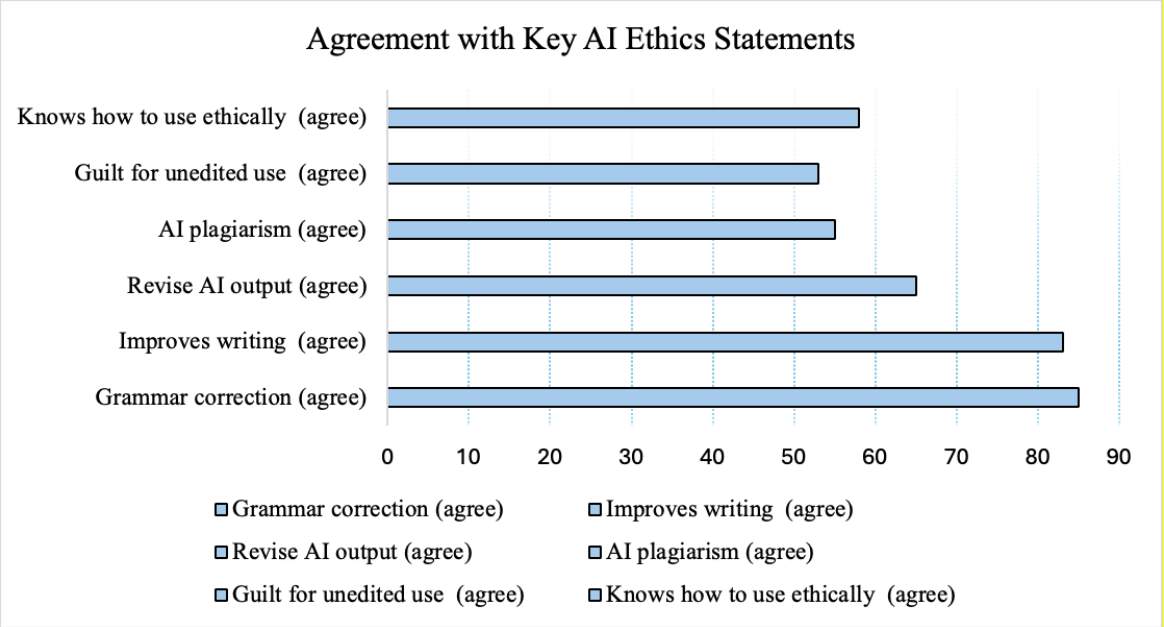


Figure 2. Agreement with key AI ethics statement

Inferential results: Hypothesis testing

The first hypothesis examined whether the participants' ethical awareness scores were high or low. One-sample t-test results indicated that the result was statistically significant, $t(161) = 5.17$, $p < .001$, showing that learners' awareness levels were modestly above the midpoint but still far from optimal. According to this result, the first hypothesis that participants showed moderate levels of ethical awareness was supported. For H2, a Pearson correlation analysis revealed a significant positive correlation between English proficiency and ethical awareness, $r = .42$, $p < .01$. This indication suggests that learners with higher self-reported proficiency were more likely to exhibit responsible attitudes and behaviors concerning AI-assisted writing. Thus, H2 was supported.

Table 3. *Summary of inferential statistical results*

Argument	Test Type	Statistic	*p-value*	Result
H 1	One-sample t-test	T(161)=5.17	<.001	Supported
H 2	Pearson Correlation	r=.42	<.01	Supported
H 3	Chi-square Test	$\chi^2(2)=9.84$	<.01	Supported
H4	Independent Samples t-test	t(160)=3.89	<.001	Supported

Our third hypothesis tested the relationship between frequency of AI use and ethical oversight (e.g., non-disclosure or lack of revision). The results of the chi-square test were significant, $\chi^2(2, N = 162) = 9.84$, $p < .01$. Therefore, these results indicated that frequent users of AI tools were statistically more likely to skip revision and avoid disclosure compared to less frequent users. Therefore, H3 was confirmed. Finally, the fourth hypothesis tested the ethical awareness scores of learners who reported having received instruction on academic integrity (n = 72) and

those who had not (n = 90). An independent samples t-test was used to compare the scores. According to the results, there was a statistically significant difference in mean scores: t(160) = 3.89, p < .001, with the instructed group scoring higher (M = 3.87, SD = 0.58) than the uninstructed group (M = 3.42, SD = 0.72). These results support H4, demonstrating the positive impact of formal ethics instruction.

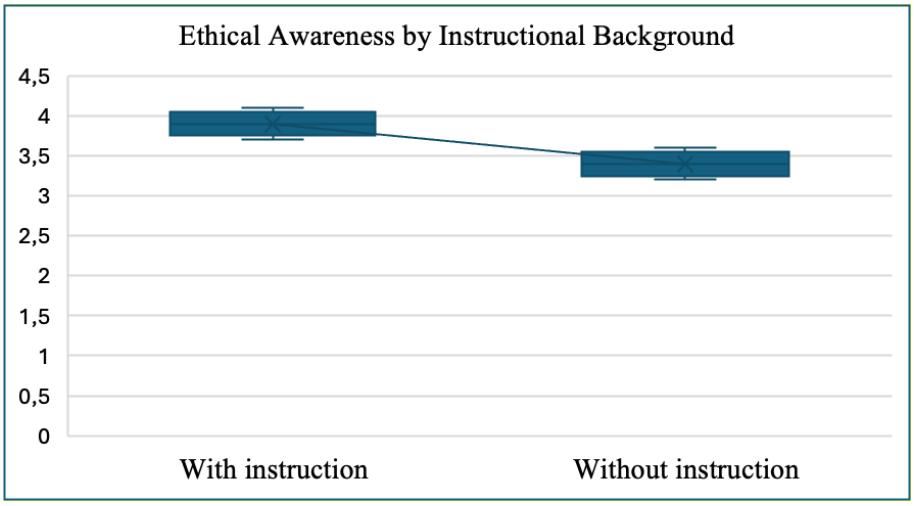


Figure 3. Ethical awareness by instructional background

Thematic patterns from open-ended responses

Qualitative analysis revealed five themes that reflect distinct aspects of how the participants engage with ethical considerations in their digital writing practices (see Table 4).

Table 4. *Codes and Themes*

Sample quotations	Theme
"I use AI to save time; I don't always edit it."	Overreliance and Pragmatism
"I feel bad if I copy directly, but it's fast."	Guilt and Moral Tension
"If the teacher doesn't notice, it's okay."	Ethical Flexibility and Concealment
"I always check and revise AI suggestions."	Active Ethical Engagement
"I'm not sure what counts as plagiarism with AI."	Confusion and Knowledge Gaps

The first theme was overreliance and pragmatism. In this theme, they admitted that using AI-generated outputs without substantial revision was primarily for the sake of efficiency. Their responses suggested a self-seeking mindset since these tools were considered time-saving under academic pressure. Participant four emphasized this notion by stating, "I don't change much unless it's wrong, because it saves my time." Typically,''it'' refers to noticeable grammatical errors, awkward vocabulary choices, or sentences that do not fit the expected meaning. The participants, therefore, tended to consider AI output only at a surface level rather than engaging with deeper aspects. This theme reflects that they acknowledge the capabilities of AI. However, they may prioritize expedience over originality. Thus, this case often bypasses the critical engagement with the content of their writing task.

As the second theme, guilt and moral tension, participants described an emotional struggle between what they believed to be ethically appropriate and the choices they ultimately made. Although they admitted that submitting unedited AI-generated content might be unethical, they chose this way for the reasons typically tied to pressure from deadlines or uncertainty about unclear guidelines. The responses also show a gap between learners' ethical understanding and their actual behavior, as in "I know it's not ideal, but occasionally I submit the AI version directly." The emotional tension they described points to a lack of clarity and confidence in navigating the ethical use of AI tools.

The theme of ethical flexibility ascertained that the surrounding context shaped students' decisions regarding AI use. The participants reported adjusting their behavior based on the expectations and enforcement practices of their academic context. Most of the participants stated they were more careful when instructors emphasized plagiarism policies. However, others admitted that they were less concerned in writing classes where guidelines in terms of ethical awareness were not explicitly addressed. These patterns suggest that learners' ethical preferences are influenced by personal judgment and the degree of institutional oversight and clarity of rules. The participants appeared to rely on their interpretations of what was acceptable in the absence of consistent guidelines and guidance. Therefore, this case led to uneven and sometimes questionable practices.

A smaller group of participants (n= 12) demonstrated active ethical engagement awareness. These participants described revising AI-generated content as disclosing assistance in contrast to these conflicted patterns. This assistance was perceived as appropriate, especially when they consciously aligned their writing with academic standards. Their responses showed a metacognitive awareness in using these tools. Participant eight stressed, "I always check and revise AI-generated feedback to make sure they reflect my own ideas." These participants appeared to benefit from either prior instruction in academic integrity or intrinsic motivation regarding ethical standards.

As the last theme of knowledge gaps, it highlighted the conceptual confusion many students faced regarding ethical boundaries. The participants in this group expressed suspense about what constitutes plagiarism in the context of AI-generated writing. One of the participants mentioned, "I really don't know where the line is between using and plagiarism." This vagueness underlines the necessity of explicit ethics guidelines in education. This explicit education should address both traditional forms of academic misconduct and new dilemmas introduced by generative AI tools.

Discussion

This study investigated the ethical awareness, perceptions, and practices of EFL learners in the context of AI-supported academic writing. Though they hold the view that AI tools provide pedagogical benefits in academic writing, their ethical awareness was moderate and inconsistent. The quantitative results revealed that the proposed hypotheses were confirmed. Ethical awareness was positively associated with English proficiency and prior instruction in academic integrity. These findings aling with Zhang et al.'s (2025) findings who argued that

ethical ambiguity was most common among students with low proficiency or limited exposure to academic writing norms. However, frequent users of AI tools showed greater ethical oversight. Qualitative findings further revealed ambiguity, pragmatism, and uncertainty among learners. These results highlight their difficulty regarding authorship, revision practices, and the boundary between assistance and academic dishonesty.

These findings align with the recent literature that emphasizes EFL learners increasingly integrate AI tools into their writing tasks (Zou & Huang, 2024; Wang, et al., 2024; Shen et al., 2025). However, they neglect critical awareness of the ethical concerns involved (Kousa & Niemi, 2022). Considering the positivist paradigm underpinning this study's quantitative side, the inferential results validate the hypothesis that instructional interventions and proficiency level substantially affect ethical behavior. On the other hand, the interpretivist dimension of this study, reflected through open-ended responses, highlights the situational, emotional, and culturally shaped nature of learners' ethical decision-making.

Especially, the theme of guilt and ambiguity reflects findings from Kessler (2020), who argues that digital-age learners often navigate ethics instinctively rather than through formalized reasoning. Similarly, the prevalence of pragmatic justification suggests that many students weigh convenience over principle, which underscores the urgent need for pedagogical scaffolding that goes beyond technical AI literacy. Although a majority of the participants perceived using AI tools as a writing scaffold rather than a replacement for human authorship, the qualitative data revealed moments of confusion about boundaries. Originality and plagiarism were the two parameters that designate the boundaries. Since AI tools increasingly blur the line between assistance and automation, EFL learners require not just functional literacy but ethical fluency (Jang et al., 2022).

Considering the theoretical perspective, our findings extend recent literature on academic integrity in digitally mediated learning contexts (Holmes et al., 2022; Vetter et al., 2024). This study emphasizes that AI-related ethical awareness is not a fixed concern. However, it is a malleable competence influenced and shaped by training, self-efficacy, and contextual norms. This insight bolsters a sociocultural perspective on ethical development. This positioning clarifies that EFL learners shape their beliefs and behaviors through their interactions with AI tools, peers, and institutional expectations.

Finally, with respect to the findings of this study, we note the fact that the integration of AI ethics into writing curricula at both micro (classroom) and macro (policy) levels will help EFL learners to gain awareness about ethical usage of AI tools in their academic practices (Güneş & Kaban, 2025). Instructors, on the other hand, should be equipped with frameworks for teaching and discussing authorship, transparency, and appropriate use of these tools (Neff et al., 2024). Moreover, educational institutions should move toward standardized guidelines for plagiarism policies to assist clarity and consistency. These insights resonate with the recent literature within the CALL community for embedding ethical considerations into digital pedagogy (Lund et al., 2023).

Despite the insights provided in this study, several limitations should be taken into account. First, the use of self-reported data may have introduced social desirability bias, especially in questions related to plagiarism and disclosure. Some of the participants may have

reported more responsible positions than they actually believed and practiced. Second, the study sample consisted only of Turkish EFL learners from a single university. Therefore, our findings may not apply to learners in other contexts or cultural settings. Third, although the mixed-methods design helped strengthen the results by combining quantitative and qualitative data, it did not allow for the examination of cause-and-effect relationships. Future research could use longitudinal or experimental methods to better understand how ethical awareness develops over time. Lastly, although it was expected that learners with higher proficiency would have clearer ethical understanding, their responses still showed confusion and uncertainty. This case suggests that higher language skills do not automatically lead to stronger ethical judgment.

Future research can investigate how learners' understanding of ethical awareness alters as they continue using AI tools in their writing. This could include tracking learners over time to see whether their choices become more responsible or stay the same. Research comparing students from different countries or academic fields may also help explain how cultural values and educational traditions shape what students see as acceptable AI use. Instructors, on the other hand, could also carry out small-scale studies in their own classrooms to see whether lessons or discussions about ethics actually lead to better decision-making. Another important research topic is assessment. Future research should investigate how learners take ethical decisions when they are under pressure. The case should be included during exams or major assignments, where using AI tools may seem like an easy way out.

Conclusions

AI-powered writing tools like ChatGPT, Grammarly, and QuillBot have opened up new dimensions for EFL learners; however, they have also raised important ethical concerns (Cheng et al., 2025). This study contributes to current literature on the use of AI tools in education by focusing specifically on the ethical side of using these tools in writing. Using a mixed-methods design, we investigated how Turkish university students in EFL programs contemplate, use, and respond to AI tools in their academic writing. The results showcase a mixed picture. Most students see clear learning benefits, such as improved grammar or fluency. However, their views on authorship, plagiarism, and responsible tool use are less consistent and sometimes unclear.

The gap between what AI tools benefit and how learners understand their ethical use necessitates the need for clearer and more practical teaching approaches. In this study, students who had stronger English skills and previous training in academic integrity were more likely to use AI tools responsibly. Therefore, AI ethics in the digital age should be approached in language education through broader institutional frameworks. The open-ended responses also reflect that learners' decisions are not based only on what they know. Their choices are shaped by the contextual factors they are in. Furthermore, the pressure they feel and how they interpret fairness and responsibility are also important factors within this paradigm. Taking all these mentioned factors into account, educators and decision-makers should not accept AI tools as just technical help. Instead, they should also acknowledge them as part of the ethical learning process in writing classrooms.

EFL learners may need clear rules and consistent guidance when using these AI tools. Therefore, they may need extra space to reflect on their use of AI tools in writing. These steps can help them better understand the line between getting support and maintaining originality. As AI tools become more common in classrooms, helping students build ethical awareness should be treated as a core part of education, not as an optional topic. This study provides a useful starting point for future research and for designing writing courses that include ethics as a central focus. In this way, it adds to the fields of applied linguistics and CALL while also contributing to broader discussions on how schools and universities can help students use AI responsibly in their academic work.

Disclosure Statement

No potential conflict of interest was reported by the authors.

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Appendices

Appendix 1: AI-Supported Writing Survey

1. AI-supported writing tools enhance my English learning experience.
2. AI integration in writing classes meets students' individual needs.
3. AI tools facilitate communication between my instructors and me.
4. There should be clear guidelines for the ethical use of AI in writing classes.
5. AI tools add value to the overall learning experience in English writing courses.
6. AI will play an increasingly significant role in the future of English language education.
7. AI helps me effectively identify and correct grammatical errors in writing.
8. AI-supported content provides alternatives suitable for my writing level.
9. I feel more confident in my writing when using AI-assisted tools.
10. AI tools provide personalized feedback based on my writing needs.
11. I use AI tools to brainstorm and organize my writing ideas.

12. AI improves my ability to revise and edit my texts.
13. AI-supported writing tools help me track my progress over time.
14. The use of AI in writing courses raises ethical concerns.
15. AI-generated content should be used responsibly in academic settings.
16. AI should not replace instructor feedback but should complement it.
17. AI-assisted assignments should align with my academic goals and objectives.
18. AI-supported assignments should align with my academic goals and objectives.
19. The integration of AI should become a standard practice in writing courses.
20. AI helps identify and address specific writing difficulties students face.
21. AI tools significantly contribute to achieving my learning goals in writing classes.
22. The future of English language education should focus on utilizing AI for enhanced learning experiences.
23. In my free time, I enjoy writing to express myself.
24. I believe that success in writing courses will impact my future career.
25. Overall, I consider myself successful in Turkish writing courses as well.

Appendix 2: Ethical Awareness Questionnaire

1. How often do you use AI tools to help with your writing in English?

☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

2. Which AI tools have you used for your writing tasks? (Select all that apply.)

☐ ChatGPT ☐ Grammarly ☐ QuillBot ☐ DeepSeek ☐ Google Gemini ☐ Other:

3. For what purposes do you mainly use AI tools?

☐ Grammar and spelling correction ☐ Vocabulary improvement

☐ Idea generation ☐ Full-text generation ☐ Rephrasing ☐ Summarizing ☐ Other:

4. When using AI tools for writing, do you consider whether the work is truly your own?

☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

5. Do you think using AI-generated texts without changes is a form of plagiarism?

☐ Yes ☐ Maybe / Not sure ☐ No

6. How concerned are you about originality when using AI tools? (1 = Not concerned, 5 = Very concerned) ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

7. Do you usually revise AI-generated texts before using them?

☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

8. How often do you check if AI-generated content could be wrong, biased, or inappropriate?

☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

9. Using AI to correct grammar is acceptable without telling the teacher.
10. Submitting fully AI-written texts without revision is dishonest.
11. AI tools should be used as writing assistants, not writers.
12. AI can help learning if used responsibly.
13. I feel guilty if I submit AI-generated work without editing.
14. What are the ethical risks of using AI tools for writing?
15. Describe a situation where you were unsure if using AI was appropriate.
16. What rules would you suggest for responsible AI use in academic writing?

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