MATAI: International Journal of Language Education
website: https://ojs3.unpatti.ac.id/index.php/matail
Volume (5) No. 2 (2025)
Pp. 232-241 accepted in 29 April 2025
e-ISSN. 2774-6356

The Impact of Unethical AI Use on Academic Writing Regression: Case Study of English Students at PSDKU Aru

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Abstract
This qualitative case study investigates how unethical AI tool usage contributes to the regression of academic writing skills among 20 English students at PSDKU Aru, Maluku, Indonesia. Data was collected through writing samples, plagiarism reports, interviews, and longitudinal grade tracking over six months. Findings reveal that students engaging in uncritical copy-pasting of AI-generated content (e.g., ChatGPT, Gemini) exhibited significant declines in paragraph coherence, argumentative depth, and syntactic complexity. Key regression patterns included fragmented topic sentences, incohesive supporting evidence, and formulaic conclusions. The study highlights ethical and pedagogical implications, advocating for AI literacy integration and scaffolded writing assessments. Recommendations emphasize proactive policy reforms and metacognitive training to mitigate skill atrophy.

Keywords: *academic writing regression, AI ethics, AI literacy, higher education, paragraph coherence, plagiarism*

DOI: 10.30598/matail.v5i2.19671

INTRODUCTION

The rapid proliferation of generative artificial intelligence (GenAI) tools like ChatGPT, Gemini, and Claude has ushered in an era of unprecedented ethical complexity within academic writing pedagogy, particularly impacting foundational skill development. Nowhere is this tension more acutely observed than in resource-constrained educational settings like branch campuses. English students at *Universitas Patimura Program Studi Diluar Kampus Utama Kabupaten Kepulauan Aru* (PSDKU Aru), located in the remote Aru Islands Regency of Indonesia, exemplify this challenge. Facing potential barriers such as limited access to extensive library resources, variable internet connectivity, and sometimes less developed foundational academic writing skills in English as a second language, these students increasingly turn to GenAI to expedite the essay drafting process. While these tools possess legitimate assistive potential, their application frequently crosses into unethical territory, defined in this study as the verbatim copying, paraphrasing without meaningful engagement, or submission of AI-generated content without synthesis, critical analysis, or proper attribution (Cotton et al., 2023). This practice fundamentally bypasses the critical cognitive processes – brainstorming, outlining, drafting, revising, synthesizing sources, and formulating original

arguments – that are essential for genuine writing development and the internalization of academic discourse conventions.

The core ethical dilemma lies in the substitution of cognitive labor. Authentic writing development requires students to grapple with complex ideas, structure coherent arguments, select and integrate evidence effectively, and craft precise language. When students rely on AI to generate substantial portions of their text, particularly at the paragraph level, they circumvent these demanding but necessary cognitive exercises. Consequently, this unethical dependency correlates strongly with observable declines in writing proficiency over time (Perkins et al., 2020). Skills atrophy when they are not actively practiced; reliance on AI output means students are not consistently engaging the neural pathways responsible for generating original thought, constructing logical sequences of ideas, or refining syntactic and lexical choices. The result is often a regression in the very competencies academic writing seeks to foster, leaving students less capable writers than before their engagement with these powerful tools.

This study specifically investigates how the unethical application of GenAI tools precipitates regression in paragraph-level competencies among a cohort of 20 English students enrolled at PSDKU Aru. The paragraph is the fundamental building block of academic essays, serving as the primary unit for developing a single, coherent point within a larger argument. Proficiency in paragraph construction encompasses the ability to formulate a clear and arguable topic sentence, provide relevant and well-integrated supporting evidence or explanations, maintain logical flow and cohesion through effective transitions, and conclude or link the point effectively to the thesis. Regression in these areas manifests as fragmented ideas, weak or non-existent topic sentences, illogical sequencing, superficial or irrelevant support, and a noticeable decline in lexical diversity and syntactic complexity. By focusing on the paragraph, this research aims to pinpoint the specific micro-level skills most vulnerable to decay due to AI misuse. To systematically explore this phenomenon, the study is guided by the following research questions: 1) How does unethical AI use manifest in students' paragraph construction? 2) What specific writing skills regress due to AI dependency? 3) How do students rationalize these practices?

By addressing these questions, this case study seeks to move beyond simply documenting plagiarism to understanding the deeper pedagogical crisis of skill regression caused by unethical AI use, specifically within the critical domain of paragraph writing at PSDKU Aru, thereby informing strategies to preserve and enhance authentic academic writing development in the GenAI era.

LITERATURE REVIEW

AI in Academic Writing: Dual-Edged Sword

Generative AI tools undeniably democratize access to sophisticated writing assistance, offering unprecedented support particularly beneficial for students facing linguistic challenges, limited resources, or demanding workloads, such as those at institutions like PSDKU Aru. These tools can provide instant grammar checks, vocabulary suggestions, structural templates, and even generate entire draft passages, lowering barriers that might otherwise hinder participation in academic discourse. However, this very accessibility harbors a significant pedagogical risk: the potential for widespread "cognitive offloading" (Swiecki et al., 2022). When students perceive AI as a means to bypass the intellectually demanding core tasks of writing—such as brainstorming original arguments, logically organizing complex ideas, or wrestling with nuanced expression—they effectively outsource the cognitive labor essential for

genuine skill development. This offloading transforms AI from a potential scaffold into a crutch, relieving students of the necessary mental effort required to internalize and master the underlying processes of effective written communication.

Consequently, while tools like ChatGPT can produce outputs that appear structurally sound on the surface—featuring conventional paragraph formatting and syntactically correct sentences—students who engage in verbatim copying or superficial paraphrasing of this content fundamentally fail to internalize the critical rhetorical moves that constitute skilled writing (Arnold et al., 2023). They do not actively practice or learn how to craft a precise and arguable topic sentence that anchors a paragraph's purpose, nor do they develop the ability to strategically select, integrate, and synthesize evidence to convincingly support a claim. The act of simply replicating AI output bypasses the cognitive engagement needed to understand *why* certain structures work or *how* evidence logically connects to an argument. This passive consumption directly inhibits the mastery of **discourse competence** (Weigle, 2002), which encompasses the sophisticated ability to organize ideas not just grammatically, but cohesively and coherently *within* a single paragraph (ensuring unity and logical flow) and *across* multiple paragraphs (building a sustained, hierarchical argument throughout an entire text). Without actively constructing paragraphs themselves, students remain dependent on the AI's structure and never truly own the skills required for independent academic writing.

Ethical Boundaries and Skill Atrophy

Unethical AI use in academic writing constitutes a fundamental violation of academic integrity, undermining the core principles of honesty, originality, and responsible scholarship. Beyond this ethical breach, however, lies a more insidious and pedagogically damaging consequence: the systematic corrosion of foundational writing skills essential for critical thinking and effective communication. When students habitually substitute AI-generated content for their own intellectual labor—through verbatim copying, minimally altered paraphrasing, or uncritical submission of AI outputs—they deprive themselves of the deliberate practice necessary to develop and maintain core competencies. This dependency creates a cycle of skill atrophy, where the very abilities academic writing seeks to cultivate weaken through disuse.

Empirical studies consistently document specific areas of decline linked to over-reliance on AI for content generation. Firstly, argumentation suffers significantly. Students exhibit a reduced capacity to formulate nuanced, defensible claims and support them with relevant, well-integrated, and critically evaluated evidence (Warschauer, 2020). The process of constructing a logical argument—identifying a stance, anticipating counterpoints, selecting and synthesizing sources—is bypassed, leading to superficial or ill-supported assertions. Secondly, cohesion deteriorates. Research indicates a weakened ability to create logical flow within and between sentences and paragraphs. This manifests as a reduced or inaccurate use of transitional phrases and conjunctions, alongside underdeveloped lexical chains (repetition of key concepts using synonyms or related terms), resulting in disjointed and difficult-to-follow text (Crossley et al., 2019). The AI might provide transitions, but the student fails to understand or replicate the underlying logical connections they represent. Thirdly, originality diminishes markedly. Over-dependence on AI tools leads to homogenized syntax (repetitive, simplistic, or formulaic sentence structures) and idea expression (generic, unoriginal content lacking unique perspective or critical analysis) (Perkins et al., 2020). Students lose their authentic voice and the ability to generate novel insights or articulate complex thoughts in distinctive ways, as they

become conduits for the AI's often generic and stylistically flat output. This trifecta of regression—in argumentative rigor, textual coherence, and original expression—represents a profound erosion of the foundational skills that higher education strives to instill, directly stemming from the unethical substitution of AI labor for genuine cognitive engagement and practice.

Cognitive and Pedagogical Implications

Vygotsky's (1978) scaffolding theory posits that learning tools should gradually withdraw as competence grows. Unregulated AI use disrupts this process, creating "dependency loops" that atrophy independent writing muscles (Zawacki-Richter et al., 2019). Paragraph construction—which demands hierarchical organization of claims and evidence—is particularly vulnerable to decay when AI substitutes for practice.

METHODOLOGY

Participants

The study employed a purposive sampling strategy to identify 20 second-year English students enrolled at PSDKU Aru who exhibited clear patterns of problematic AI use and its potential consequences. The cohort consisted of 19 female and 1 male student, ranging in age from 19 to 24 years. Participants were specifically selected based on three converging criteria: 1) their self-admitted, significant reliance on generative AI tools (like ChatGPT or Gemini) for completing essay assignments; 2) documented declines in their writing proficiency grades as evidenced by midterm academic reports; and 3) the presence of formal plagiarism detection flags (e.g., from Turnitin or GPTZero reports) on their submitted work, indicating substantial unoriginal content. This sampling ensured the research focused directly on students demonstrably impacted by the phenomenon under investigation.

Data Collection (6-month longitudinal design)

Instrument	***Purpose***	***Analysis Method***
Pre-/post-AI writing samples	Track paragraph-level changes	Rhetorical Structure Theory (RST) (Mann & Thompson, 1988)
Turnitin + GPTZero reports	Quantify AI text reliance	Statistical comparison
Semi-structured interviews	Explore rationales & self-awareness	Thematic coding
Instructor rubrics	Assess coherence, argument, syntax	Descriptive statistics

Analytical Framework

To rigorously assess paragraph-level regression, student writing samples were systematically evaluated using Ken Hyland's (2016) established framework for analysing coherence. This involved scoring paragraphs across four critical dimensions; 1) Topic Integrity in which the degree to which all sentences within a paragraph-maintained unity by developing a single, clearly identifiable central idea or claim, avoiding digression or irrelevant details. 2) Logical Flow in which the effectiveness of the sequential progression of ideas, assessed through the appropriate use of transitions, conjunctions, pronoun referencing, and the overall logical ordering of claims, evidence, and explanations. 3) Support-Claim Alignment in which the relevance, sufficiency, and integration of evidence (examples, data, citations) used to

substantiate the paragraph's main claim or topic sentence. 4) Lexical Diversity in which the range and sophistication of vocabulary employed, measured through metrics like type-token ratio and the use of precise, academic terminology appropriate to the context, avoiding excessive repetition or simplistic word choice. Each dimension was rated on a standardized rubric.

FINDINGS

Patterns of Unethical AI Use

Table 1: Prevalence of AI Content Dependency

Metric	*Count*	*Percentage*	*Verification Method*
Students copying >40% AI content	18	90%	GPTZero analysis
Essays with detectable AI traces	87/100 submitted	87%	Turnitin + GPTZero
Consistent dependency (≥3 assignments)	15	75%	Submission history

Analysis: Near-universal reliance on AI was observed, with 90% of students exceeding ethical thresholds. Dependency was persistent, not incidental.

Table 2: Student Rationales for AI Use (Multiple Responses Recorded)

Rationale	*Count*	*Percentage*	*Representative Quote*
Efficiency	15	75%	*"Why spend 3 hours writing when AI gives a draft in 5 minutes?"*
Language Insecurity	12	60%	*"My English isn't strong enough for academic essays."*
Grade Pressure	10	50%	*"Everyone uses it. I can't compete without AI."*
Topic Complexity	8	40%	*"I don't understand the theory well enough to write."*

Analysis: Efficiency dominated justifications, though linguistic anxiety and competitive pressure revealed systemic stressors. 65% cited ≥2 rationales.

Table 3: Detection Avoidance Tactics & Impacts

Tactic	*Users*	*Tool Example*	*Observed Textual Impact*
Paraphrasing Tools	14 (70%)	QuillBot, SpinBot	Disjointed syntax, incohesive transitions, loss of key terms
Hybrid Copy-Paste	11 (55%)	Manual editing	Sudden shifts in lexical sophistication or tone
Citation Omission	9 (45%)	N/A	Unsupported claims, generic evidence

Illustrative Example:

Original AI Output	*Post-Paraphrasing (QuillBot)*
"Colonial trade policies systematically impoverished Malukan communities through extractive practices."	*"Colonial business rules regularly made Maluku groups poor via taking actions."*

Impact Analysis:

Cohesion Decline: Lexical chains broken (e.g., "trade policies" → "business rules")
Precision Loss: "Systematically impoverished" → "regularly made poor"
Syntactic Disruption: Passive voice distortion creates ambiguity

The documented patterns of unethical AI use reveal consequences extending far beyond simple plagiarism violations, constituting a multifaceted threat to academic integrity and student development. First, ethical erosion was pervasive, with 70% of participants (14 students) actively engaging in deliberate deception—primarily through paraphrasing tools—to conceal AI origins. This normalization of dishonest practices risks fundamentally altering the academic culture, where circumventing genuine intellectual effort becomes an accepted, even necessary, strategy for perceived survival or success, undermining the foundational values of

scholarship. Second, the impact on skill regression proved severe and specific. The very tools used to evade detection (e.g., QuillBot) actively exacerbated writing deficiencies, particularly coherence. Analysis showed Hyland's Logical Flow dimension suffered a dramatic 41% decline in manipulated texts compared to pre-AI baselines. This manifested as jarring syntactic breaks, incohesive transitions, and fractured lexical chains, directly damaging the students' ability to construct logically progressing arguments within paragraphs. Third, the students' rationales—efficiency (75%), language insecurity (60%), grade pressure (50%)—point unequivocally to systemic pressures and institutional gaps. These drivers reflect a failure in current pedagogical frameworks to adequately address AI literacy, provide sufficient linguistic support, and design assessments that genuinely measure and foster independent writing competence without incentivizing shortcuts. Collectively, these findings confirm that unethical AI use acts not merely as an academic integrity breach, but as a potent catalyst for accelerated compositional skill decay. The significant regression observed, especially in paragraph-level coherence and argument construction, demands urgent, targeted pedagogical intervention focused explicitly on scaffolding the drafting process and rebuilding foundational competencies.

Paragraph-Level Regression

Case Study 1 (Student F, Comparative Essay)

Pre-AI Paragraph:
"Colonialism entrenched economic inequalities in Maluku through spice monopolies. Dutch VOC policies restricted local farmers' market access (Lape, 2000), creating dependency cycles persisting today."
(Coherent topic sentence, evidence integration, cause-effect logic)

Post-AI Paragraph:
"Colonialism had economic impacts. Spices were valuable. The Dutch controlled trade. Some people became poor."
(Fragmented claims, no citations, simplistic clauses)

Significant declines in core paragraph competencies were observed. Topic integrity—the cohesion around a central idea—decreased by 32%, resulting in fragmented arguments where sentences diverged from the core claim. Lexical diversity regressed by 41%, marked by a shift toward generic vocabulary (e.g., replacing precise terms like "entrenched economic inequalities" with vague phrases like "economic impacts"). Support-claim alignment deteriorated substantially, as students either omitted evidence entirely or substituted specific citations with broad, AI-generated generalizations. This triad of regression (fragmented topics, impoverished vocabulary, and unsupported claims) demonstrates how unethical AI use directly erodes foundational paragraph construction skills essential for academic writing proficiency.

Case Study 2 (Student N, Argumentative Essay)

AI-generated paragraphs frequently displayed false coherence: a superficial appearance of flow created by the mechanical insertion of transition words like "furthermore" or "consequently." However, these connectors were often used without an underlying logical relationship between the sentences or ideas they joined, creating an illusion of progression that masked fundamental disorganization and fragmented reasoning within the text.

Table 4: Paragraph Coherence Metrics (n=20)

Metric	*Pre-AI Mean*	*Post-AI Mean*	*Decline*
Topic sentence clarity	4.2/5	2.8/5	33.3%
Evidence relevance	3.9/5	2.5/5	35.9%

Transition accuracy	4.0/5	2.3/5	42.5%
Lexical sophistication	4.1/5	2.6/5	36.6%

Cognitive Consequences

Interviews revealed deskilling

"After using ChatGPT for 3 months, I couldn't write without it. My brain felt empty." (Student T)
"I forgot how to explain ideas step-by-step." (Student K)

Instructors reported significant declines in core writing abilities directly attributable to AI reliance. Students struggled profoundly with developing nuanced claims, often producing oversimplified, superficial assertions lacking critical analysis or qualifying depth – a skill requiring independent thought that AI shortcuts circumvent. Synthesizing sources manually proved exceptionally difficult; without AI compilation, students defaulted to patchwriting or disjointed summaries, demonstrating an inability to critically compare, contrast, or integrate evidence to build original arguments. Furthermore, structuring paragraphs without AI templates revealed a critical dependency; students lacked the internalized understanding of organizational logic (topic sentence → evidence → analysis → conclusion/link) and floundered when attempting to sequence ideas cohesively from scratch. These observed deficits confirmed the regression in higher-order writing skills fostered by unethical AI use.

DISCUSSION

The Regression Mechanism

Unethical AI use initiates a self-reinforcing cycle of dependency that actively dismantles critical writing competencies. First, when AI substitutes for the essential cognitive tasks of planning and outlining—brainstorming ideas, establishing logical hierarchies, and structuring arguments—students lose the deliberate practice required for organizing complex thoughts. This leads directly to the atrophy of idea organization skills; without repeatedly engaging in structuring their own work, students fail to internalize frameworks for coherent argument development. Second, verbatim copying or minimally altered use of AI output circumvents the demanding processes of paraphrasing and argument construction. This avoidance weakens paraphrasing ability (the skill of comprehending and restating concepts in original terms) and cripples argumentation development (the capacity to build claims through evidence selection, synthesis, and critical analysis). The cognitive labor of justifying a position is outsourced. Third, reliance on AI-generated transitions ("furthermore," "therefore," "consequently") creates an illusion of flow without underlying logical substance. This erodes the fundamental understanding of logical flow; students do not learn how ideas connect causally, comparatively, or evidentially, as the transitions are applied mechanically rather than emerging from genuine reasoning.

This dependency cycle aligns powerfully with Bandura's (1986) self-efficacy theory. By consistently avoiding challenging writing tasks (planning, original drafting, logical connection) through AI use, students deny themselves opportunities for mastery experiences. Repeated avoidance lowers their self-efficacy beliefs—their confidence in their own ability to perform these writing tasks successfully. As confidence diminishes, anxiety increases, making future independent writing seem more daunting. This reduced competence confidence paradoxically increases future reliance on AI as a coping mechanism, creating a destructive feedback loop where skill atrophy and lowered self-efficacy perpetuate dependency, making genuine skill recovery progressively harder without targeted intervention.

Paragraph-Specific Impacts

Beyond surface-level plagiarism, unethical AI reliance precipitates a profound regression in the structural pillars of academic paragraph writing, fundamentally weakening argumentative rigor. Topic sentences, the crucial anchors of paragraph purpose, degenerate when sourced from AI. As Hyland (2016) emphasizes, precision in claim-making is paramount; however, AI-generated openings frequently default to vague, generic statements (e.g., "This is a complex issue with many perspectives") that fail to establish a clear, arguable stance, diluting the paragraph's focus and analytical potential from the outset. Evidence integration suffers equally catastrophic decay. Students passively accepting AI-supplied evidence skip the indispensable steps of critical source evaluation, verification, and contextual synthesis (Arnold et al., 2023). This results in paragraphs marred by factual inaccuracies, inclusion of irrelevant or misleading data, and a fundamental misalignment between the cited evidence and the paragraph's core claim, undermining argumentative credibility. Finally, conclusions regress from their essential role as sites of synthesis and forward momentum. Instead of distilling insights, evaluating implications, or connecting back to the thesis, AI-dependent paragraphs often end with mere summary restatements ("In conclusion, this topic is important") devoid of critical analysis or original thought. This triad of decay—generic claims, uncritically integrated evidence, and non-analytical conclusions—signifies a collapse in the hierarchical structure and critical function of the academic paragraph, directly attributable to the substitution of AI generation for authentic intellectual engagement and compositional practice.

Ethical vs. Assistive Use

The study reveals a critical distinction: students who utilized AI ethically as a tool for refinement rather than content generation successfully maintained or even enhanced their writing competencies. Unlike peers engaging in verbatim copying, these students employed AI strategically—for brainstorming alternative phrasings, identifying grammatical errors, or checking citation formats—while retaining ownership of core intellectual processes like argument formation and evidence synthesis. This finding is powerfully exemplified by Student P, an outlier whose paragraph coherence scores increased by 12% over the study period. Student P exclusively used ChatGPT as a "critical editor" (Cotton et al., 2023), pasting self-written drafts into the tool with prompts like: "Identify logical gaps between these sentences" or "Suggest stronger transitions for this paragraph." This iterative feedback loop reinforced meta-cognitive awareness of textual cohesion without outsourcing the act of writing itself.

This aligns with emerging research on AI as a scaffold for metacognition. Warschauer (2020) argues that tools fostering evaluation rather than generation can enhance self-regulation in writing. Similarly, Crossley et al. (2019) demonstrate that automated feedback on discourse features (like transitions or lexical chains) improves cohesion when students actively revise based on it. Student P’s improvement mirrors Arnold et al.'s (2023) observation that AI used for "critical interrogation" of one's own text strengthens internal revision skills. Crucially, this approach adheres to Vygotsky’s (1978) zone of proximal development: AI acts as a temporary support that builds independent competence, contrasting sharply with generative use that creates dependency. The data underscores that ethical frameworks positioning AI as an evaluative partner—not an author—can mitigate regression risks and potentially augment skill development.

CONCLUSION & SUGGESTION

Educators must adopt process-oriented assignments requiring annotated outlines, iterative drafts, and designated AI-free paragraphs to rebuild drafting competence. Integrate mandatory AI literacy modules teaching ethical prompt engineering, source verification, and critical output evaluation. Reframe plagiarism tools formatively ("Detect-to-Educate") to diagnose skill gaps rather than solely punish. Institutions require clear AI policies defining violations (e.g., >30% uncited AI content) within academic codes. Implement diagnostic writing assessments early to identify at-risk students for targeted support. Students should maintain metacognitive journals documenting AI's role in their writing process and engage in peer workshops deconstructing AI outputs to rebuild paragraph skills (Cotton et al., 2023).

Unethical AI use among PSDKU Aru students precipitated significant regression in paragraph-level writing skills, notably topic coherence, argument development, and lexical precision. This study underscores that AI, when misused as a content generator rather than a critical assistant, undermines the cognitive labor essential for academic writing proficiency. Proactive pedagogical interventions emphasizing ethical AI literacy and scaffolded practice are vital to reverse these trends. Future research should explore culturally responsive AI curricula for Indonesian contexts.

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