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Learner Autonomy in the Age of AI: How GenAI Tools Reshape Self-Regulated Learning Strategies in EFL Academic Writing

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Abstract: The rapid uptake of generative AI tools in higher education has prompted urgent questions about learner autonomy and self-regulated learning (SRL) in EFL academic writing contexts. This study investigates how access to GenAI tools reshapes the self-regulated learning strategies of undergraduate EFL writers at a public Islamic university in Indonesia, with particular attention to goal-setting, monitoring, resource management, and help-seeking behaviours. Using a longitudinal qualitative design with sixteen participants followed across one academic year, the study draws on learning journals, stimulated recall interviews, and writing process traces to map how SRL strategies shifted as participants integrated GenAI tools into their academic writing practice. Findings reveal four patterns of SRL reorganisation: strategic augmentation, in which GenAI was incorporated as one resource among many within a developed self-regulatory repertoire; passive substitution, in which GenAI progressively replaced rather than supplemented self-regulatory effort; anxious avoidance, in which learners with high writing anxiety selectively used GenAI to manage affective load at the cost of developing independent strategies; and critical appropriation, a rare but instructive pattern in which learners developed metacognitive awareness of how their own SRL was being shaped by tool access and actively worked to counterbalance AI dependency. The study draws on Zimmerman's SRL framework (Zimmerman, 2000; Zimmerman & Moylan, 2009) and Benson's (2011) conceptualisation of learner autonomy to argue that GenAI access does not uniformly promote or undermine learner autonomy in EFL academic writing—its effects depend substantially on the self-regulatory capacities learners bring to the interaction and the pedagogical scaffolding their programmes provide.

Keywords: Learner autonomy, self-regulated learning, generative AI, EFL academic writing, writing strategies, metacognition.

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INTRODUCTION

There is a version of the GenAI-in-education story organised around liberation: students who struggled with the blank page now have a collaborator; writers who were blocked by language anxiety now have a fluent partner; learners who could not access feedback now have an always-available respondent. The liberatory framing has genuine force in EFL

contexts, particularly for writers working in a language that remains, despite years of instruction, a source of significant anxiety and uncertainty. If GenAI tools lower the barrier to getting words on the page, to seeing what a fluent version of one's draft might look like, to checking one's argument structure before submission, there is something genuinely valuable in that.

But liberation and dependency are not opposites with nothing between them—they are endpoints of a continuum that passes through a complicated middle, and it is in that middle that most EFL academic writers are actually living. The question this study takes seriously is not whether GenAI tools are helping or hurting student writing in the aggregate, but how they are reshaping the processes through which individual writers regulate their own learning—the strategies, habits, and metacognitive practices that, over time, make someone more capable and more independent as a writer rather than more reliant on any particular tool or resource.

Self-regulated learning (SRL) research has, over decades, built a reasonably detailed picture of what effective self-regulation in academic writing looks like: goal-setting that is specific and realistic, monitoring of one's own progress against those goals, flexible deployment of strategies based on feedback from that monitoring, and the kind of help-seeking behaviour that supplements rather than replaces one's own efforts (Zimmerman, 2000; Zimmerman & Moylan, 2009). What happens to those processes when a learner has access to a tool that can, at any moment, take over almost any of them? The tool can set the direction of a revision, monitor clarity and coherence, suggest alternative strategies, and answer almost any help-seeking query in seconds. For a writer with a developed SRL repertoire, that might be genuinely useful scaffolding. For a writer whose SRL repertoire is still forming—as it is for most undergraduates in their first years of academic writing—it might be something more disruptive.

This study follows sixteen undergraduate EFL writers at a public Islamic university in Indonesia across one academic year, tracking how their SRL strategies in academic writing shifted as they integrated GenAI tools into their practice. It asks three research questions, 1) What patterns of SRL reorganisation emerge as EFL writers integrate GenAI tools into academic writing practice over time?; 2) What individual and contextual factors shape which pattern a learner follows?; and 3) What are the implications of these patterns for EFL writing pedagogy and learner autonomy development?

Self-Regulated Learning in L2 Academic Writing

Self-regulated learning—broadly defined as the degree to which learners are metacognitively, motivationally, and behaviourally active participants in their own learning process (Zimmerman, 2000)—has been extensively studied in L2 writing contexts over the past two decades. Research consistently finds that stronger SRL is associated with better writing outcomes, greater persistence in the face of difficulty, and more productive use of feedback across a range of L2 writing contexts (Nguyen & Gu, 2013; Oxford, 2017; Zimmerman & Moylan, 2009). The SRL cycle as Zimmerman (2000) describes it involves three phases: forethought (goal-setting, strategic planning, motivational beliefs), performance (strategy use, self-monitoring, self-instruction), and self-reflection (self-evaluation, causal attribution, adaptive inferences about future behaviour). Each phase feeds into the next, and the quality of self-regulation in any one phase affects what is available in the others.

For EFL writers in Indonesian higher education contexts, the development of SRL in academic writing faces specific challenges. The transition from secondary schooling—where writing tasks are often constrained, teacher-directed, and evaluated primarily for accuracy—to university writing that demands independent argumentation, sustained self-monitoring, and flexible strategy use is steep, and it is made steeper by limited explicit instruction in either the skills of academic writing or the metacognitive strategies needed to manage the writing process (Musthafa, 2021; Pratama, 2025). Many Indonesian undergraduate EFL writers arrive at university with what Zimmerman and Moylan (2009)

would call underdeveloped forethought processes—limited goal-setting, a tendency to begin writing without strategic planning, and motivational beliefs that frame academic writing primarily in terms of avoiding failure rather than developing competence.

Learner Autonomy in EFL Contexts

Benson's (2011) conceptualisation of learner autonomy as the capacity to take control of one's own learning—control over the management of learning, over cognitive processes, and over the content and direction of learning—provides a useful complement to SRL theory. Where SRL frameworks tend to focus on the processes of self-regulation within instructional contexts, Benson's framework extends the analysis to questions of agency, independence, and the learner's relationship to institutional and social constraints on learning. In EFL contexts specifically, learner autonomy is complicated by the foreign language itself as a barrier to independent resource access: learners who struggle to read academic texts in English without assistance, or who cannot yet monitor the quality of their own writing with confidence, face real constraints on the autonomy they can exercise regardless of their motivation (Benson, 2011; Oxford, 2017).

The introduction of GenAI tools into this context has renewed interest in learner autonomy questions for straightforward reasons: these tools can dramatically reduce the practical barriers to independent writing in English while simultaneously raising new questions about whose agency is actually being exercised when a significant proportion of the writing process is mediated by an algorithm. Autonomy requires, in Benson's (2011) framework, that the learner be the author of their learning decisions—not just the executor of decisions made by a teacher, a textbook, or a tool. The degree to which GenAI-assisted writing practices support or undermine this authorship is an open empirical question that this study is positioned to address.

GenAI and Self-Regulated Learning: Emerging Research

Research on the relationship between GenAI tool use and SRL in higher education is at an early stage, but several themes are emerging. Studies report that students frequently turn to GenAI tools during the monitoring and help-seeking phases of the writing process—using them to check whether their argument is clear, to get unstuck when the writing has stalled, and to identify errors they could not find themselves (Becker, 2023; Dai et al., 2023; Yan, 2023). This use pattern is not in itself problematic; help-seeking is a legitimate and effective SRL strategy when it supplements rather than replaces self-monitoring (Zimmerman & Moylan, 2009). The concern, documented in several studies, is that the ease and speed of GenAI assistance can shift help-seeking from a supplementary to a primary strategy—with the forethought and performance-phase work that SRL depends on being progressively outsourced to the tool (Becker, 2023; Ouyang et al., 2023).

The concept of cognitive offloading—delegating cognitive work to external systems to reduce mental demand—provides a related theoretical resource (Risko & Gilbert, 2016). Cognitive offloading to well-designed external tools can be adaptive, freeing cognitive resources for higher-order tasks; it can also be maladaptive when the offloaded process is one that the learner needs to develop independently. For EFL writers, the most developmentally consequential writing processes—monitoring one's own argument logic, evaluating source integration, revising for cohesion—are precisely the ones most easily offloaded to GenAI. Whether that offloading is adaptive or maladaptive depends on the learner's existing capacity for those processes and on whether the instructional context creates any incentive or structure for developing them independently.

Autonomy and Dependency in Technology-Enhanced Language Learning

The tension between technology as a tool for learner empowerment and technology as a source of new dependencies is not new to language education research (Benson, 2011; Oxford, 2017; Thorne & Reinhardt, 2020). Studies of automated grammar

checkers, translation tools, and dictionary applications have all raised versions of the same question: does using this tool help learners do things they could not do otherwise in ways that build their capacity, or does it help them do things they could not do otherwise in ways that mean they never develop the capacity? The answer, as with GenAI tools, has typically been: it depends on the learner, the tool, and the pedagogical context.

What distinguishes GenAI tools from earlier language learning technologies is the comprehensiveness of their capability: they can engage with almost every phase of the writing process at once, rather than supporting discrete sub-skills like spelling or grammar. This comprehensiveness means that the question of what gets developed and what gets offloaded is, with GenAI tools, a question about the entire writing process rather than about any particular component of it.

Zimmerman's Self-Regulated Learning Framework

Zimmerman's (2000) cyclical SRL model—forethought, performance, self-reflection—provides the primary analytical framework for this study. Its three-phase structure allows systematic attention to how GenAI tool integration affects each phase of the writing process: whether it supports or displaces goal-setting in the forethought phase, augments or replaces monitoring in the performance phase, and enriches or circumvents self-evaluation in the self-reflection phase. The model's emphasis on the dynamic, iterative nature of self-regulation—each cycle's outcomes feeding into the next cycle's forethought—is particularly useful for a longitudinal study tracking how SRL patterns develop and shift over an academic year.

Benson's Learner Autonomy Framework

Benson's (2011) three-dimensional conceptualisation of autonomy—technical (ability to use learning tools), psychological (capacity for independent decision-making), and political (capacity to control the direction and content of learning)—provides a broader frame for interpreting the SRL findings. It directs attention to the fact that GenAI tool competence (technical autonomy) does not automatically produce independent decision-making (psychological autonomy) or control over one's own learning trajectory (political autonomy). Students can be highly technically capable with these tools while remaining deeply dependent on them in ways that undermine the deeper forms of autonomy that academic writing development requires.

METHODS

Research Design

The study used a longitudinal qualitative design, following sixteen participants across one academic year (two semesters). Longitudinal qualitative designs are particularly suited to research questions about how processes change over time and across contexts—questions that cross-sectional designs cannot adequately address (Saldaña, 2016). The year-long timeframe was chosen because SRL development in academic writing is not a short-term process; meaningful shifts in self-regulatory patterns require time and repeated cycles of writing, reflection, and revision to become visible.

Participants and Setting

Sixteen undergraduate students (eleven female, five male; age 19–22) in the English Education Department of a public Islamic university in western Sumatra participated. Students were in their second and third years of study and enrolled in an Academic Writing II course during the first semester of the study. Purposive sampling ensured variation across self-reported GenAI tool experience (from none to regular use), academic writing proficiency (assessed through a pre-study portfolio submission), and self-reported writing motivation and anxiety. Participants were followed across two semesters, with the

second semester involving writing tasks outside the Academic Writing II course in other departmental subjects.

Data Collection

Three data sources were collected across the academic year. Learning journals were kept by all participants throughout the year, with structured prompts submitted biweekly: *What writing tasks did you work on this week? What tools or resources did you use? What did you do when you got stuck? What do you think you need to improve?* Stimulated recall interviews (45–60 minutes each) were conducted at four points across the year—at the beginning, end of semester one, beginning of semester two, and end of semester two—using samples from participants' writing journals and draft revision records as recall cues. Writing process traces were collected for three major writing tasks across the year: digital audit trails showing tool use sequences (including GenAI interaction logs where participants consented to share them), time-on-task records, and side-by-side draft comparisons.

Data Analysis

All data were analysed using interpretive thematic analysis (Braun & Clarke, 2021), with Zimmerman's (2000) SRL phases and Benson's (2011) autonomy dimensions functioning as sensitising concepts. The longitudinal structure of the data allowed analysis not just of what SRL strategies participants used but of how those strategies changed over time and in relation to GenAI tool access. Cross-case analysis was used to identify patterns across participants, with attention to both convergent themes and instructive individual variation. Member checking was conducted with four participants at the end of the study, who reviewed summaries of findings about their own cases.

RESULTS

Analysis of the longitudinal data produced four distinct patterns of SRL reorganisation as participants integrated GenAI tools into their academic writing practice. These are presented as analytically derived patterns, not fixed individual types—most participants showed aspects of more than one across different tasks and time points, and several showed clear trajectory shifts between the beginning and end of the year.

Strategic Augmentation

Four participants showed a pattern in which GenAI was incorporated into an already relatively developed SRL repertoire as one useful resource among several, without displacing the self-regulatory work that characterised their writing process before tool access. These participants tended to enter the study with stronger self-regulatory foundations than their peers: they had clearer goal-setting practices, more consistent self-monitoring habits, and more developed help-seeking strategies that had previously involved peers, tutors, and reference texts. GenAI access expanded their resource set without reorganising their self-regulatory architecture.

In stimulated recall interviews, strategic augmenters described GenAI use in instrumental terms—as a tool for specific sub-tasks within a self-directed writing process: *"I use it to check if my transitions make sense. I already know what I want to say; I'm just checking how I've said it"* (Rani). Journal entries from these participants showed continued use of their pre-existing strategies—outlining, peer consultation, reading multiple sources before writing—alongside GenAI use that was focused and contained. Writing process traces showed that GenAI interactions in this group were shorter in duration and more targeted than in other groups—typically involving specific queries rather than open-ended requests for the tool to improve or expand their writing.

By the end of the academic year, strategic augmenters showed no evidence of SRL decline. Several described having developed more sophisticated judgements about when

GenAI was and was not useful: *"At first I used it for everything, just to see what it could do. Now I only use it when I have a specific problem. The rest I do myself because I learn more that way"* (Rani).

Passive Substitution

Six participants—the largest group—showed a pattern in which GenAI progressively replaced rather than supplemented self-regulatory effort across the academic year. These participants typically began the year with less-developed SRL foundations than strategic augmenters: their initial journal entries showed limited explicit goal-setting, primarily reactive monitoring (checking for errors rather than monitoring argument development), and help-seeking that was either absent or directed primarily towards the teacher. GenAI tool access filled the gap that these underdeveloped strategies left—initially in ways that were helpful and productive, but over time in ways that increasingly bypassed the development of the strategies themselves.

The trajectory was clearest in the journal data, which showed a shift across the year in how participants described their writing process. Early journals included accounts of planning, struggling, revising, and seeking feedback from various sources. By mid-year, journal entries from passive substituters had become shorter and more formulaic, with GenAI appearing as the answer to almost every challenge: *"I was stuck on my argument so I asked ChatGPT and it gave me some ideas"* (Budi); *"My introduction wasn't good so I put it in ChatGPT and it improved it"* (Widi). By year's end, several participants in this group had difficulty describing their writing process beyond the GenAI interactions—as if the process had become the tool use.

Stimulated recall interviews with passive substituters were revealing in a specific way: when asked to explain the reasoning behind a revision choice in their draft, they frequently could not. *"ChatGPT suggested it"* was a complete explanation for many changes, with no accompanying account of why the suggestion was better than the original or what aspect of the writing it had addressed. This absence of metacognitive commentary is, in Zimmerman's (2000) framework, diagnostic: the self-reflection phase of the SRL cycle, in which writers evaluate their decisions and build adaptive strategies for the future, was not happening—the tool was making the decisions and the writer was implementing them without internalising the reasoning.

Writing process traces from this group showed longer and more open-ended GenAI interactions than strategic augmenters—requests to "improve this paragraph," "rewrite this introduction," and "make this sound more academic"—rather than targeted queries about specific issues. The traces also showed less time spent on planning and self-monitoring activities relative to earlier in the year, consistent with the progressive offloading pattern.

Anxious Avoidance

Three participants showed a pattern that was distinctive in its affective character: high writing anxiety appeared to drive selective and strategically inconsistent GenAI use that managed affective load in the short term while impeding long-term SRL development. These participants were characterised at the start of the study by significantly elevated writing anxiety scores and a strong avoidance orientation towards writing tasks—they procrastinated, sought reassurance from peers and the teacher before beginning, and reported high levels of self-doubt about their writing ability. GenAI tools were adopted enthusiastically by all three, but the use pattern was qualitatively different from passive substituters: it was erratic rather than progressive, driven by affective states rather than strategic choices.

When anxiety was high, anxious avoiders offloaded heavily to GenAI—sometimes using it to produce substantial portions of draft text during periods when their own writing felt impossible. When anxiety was lower, they wrote more independently and with less GenAI involvement. The result was a writing process that varied dramatically in the

degree of self-regulatory engagement from task to task, with GenAI functioning more as an anxiety management tool than as a writing development resource. Journal entries from these participants described GenAI use in explicitly affective terms: *"I couldn't write anything today. Everything I wrote felt wrong. So I just put my idea into ChatGPT and used what it gave me. At least I had something on the page"* (Hani).

The problem with this pattern—from a SRL development perspective—was not the GenAI use per se but its function. Using a resource to get through a writing task when one's own capacity feels temporarily blocked is not in itself a problem; it becomes one when it consistently bypasses the processes through which anxiety-related writing blocks can be gradually overcome. The three participants in this group showed no reduction in writing anxiety across the academic year despite consistent GenAI use—consistent with the established finding in anxiety research that avoidance maintains rather than resolves anxiety (Elaldi, 2022; Zheng & Cheng, 2022).

Critical Appropriation

Three participants showed a pattern that was the least common but analytically the most instructive: over the course of the year, they developed explicit metacognitive awareness of how their own SRL was being shaped by GenAI tool access and took deliberate steps to manage that relationship. This pattern—which we are calling critical appropriation—was not present at the start of the year for any of these participants; it emerged through specific experiences that prompted reflection on the relationship between tool use and learning.

For Nadia, the trigger was receiving feedback from a lecturer that her writing had become formulaic across two consecutive assignments—more polished on the surface but somehow less distinctive than her earlier work. This prompted her to look back at her writing process records and notice that her GenAI use had expanded substantially between the two assignments. Her journal entry from this point read: *"I think I've been letting ChatGPT write instead of helping me write. My assignments look better but I don't feel like they're mine anymore. And I'm not learning anything because I'm not doing the hard thinking."* In the semester that followed, Nadia developed a self-imposed protocol for GenAI use: she would produce a complete first draft independently before consulting the tool, and would track which suggestions she accepted and why in her revision journal. Her writing process traces showed a marked shift towards more independent initial drafting and more evaluative GenAI interaction.

For the other two critical appropriators, similar patterns of prompted reflection led to similar outcomes: more deliberate, bounded GenAI use that the learner could describe and justify, combined with explicit efforts to develop the SRL capacities—particularly argument monitoring and self-evaluation—that unconstrained GenAI use had been bypassing. None of the three fully resolved the tension between tool utility and autonomy development; all three described it as an ongoing negotiation. But the metacognitive awareness they had developed gave them a basis for that negotiation that passive substituters and anxious avoiders lacked.

Factors Shaping Patterns

Cross-case analysis identified five factors as most consequential in shaping which pattern a participant followed. First, **pre-existing SRL development**: participants with stronger self-regulatory foundations at the start of the study were more likely to show strategic augmentation and less likely to show passive substitution. Second, **writing anxiety**: high writing anxiety was the strongest predictor of the anxious avoidance pattern and was also associated with more erratic GenAI use among passive substituters. Third, **metacognitive awareness of tool use**: participants who were prompted—by explicit instruction, by lecturer feedback, or by their own reflection—to think about how they were using GenAI and what it was doing to their learning process showed more agentic and developmental patterns of use. Fourth, **course design**: the two participants who had

received explicit SRL instruction as part of their Academic Writing II course showed more developed self-regulatory language in their journals and more consistent self-monitoring behaviour than peers who had not. Fifth, **task design**: open-ended tasks with limited process scaffolding were associated with greater GenAI substitution; tasks that required explicit SRL documentation—process reflections, revision rationale statements—produced more visible self-regulatory engagement regardless of GenAI access.

DISCUSSION

GenAI Access Does Not Uniformly Shape Learner Autonomy

The central finding of this study is a nuanced one: GenAI access reshapes SRL strategies in ways that depend substantially on what learners bring to the interaction. For learners with developed SRL foundations, GenAI can function as a genuinely augmentive tool—expanding capability without displacing capacity. For learners whose SRL is still forming—which describes most undergraduates in their first years of academic writing—GenAI access tends to fill the gaps left by underdeveloped self-regulation in ways that make those gaps less immediately visible and less likely to be addressed. The tool solves the surface problem (the stuck draft, the unclear paragraph, the argument that is not working) without touching the underlying developmental issue (the writer's limited capacity to set goals, monitor progress, and evaluate their own work independently).

Benson's (2011) autonomy framework clarifies what is at stake. Technical autonomy—the ability to use GenAI tools effectively—is not the same as psychological autonomy (the capacity to make independent decisions about one's writing) or political autonomy (the capacity to direct one's own learning trajectory). Several participants in this study became quite technically capable with GenAI tools across the year without showing any corresponding growth in the deeper forms of autonomy that academic writing development requires. What developed was proficiency in tool use, not independence from it.

The SRL Displacement Problem

The passive substitution pattern—the most common in this study—is not a finding about lazy or unmotivated students. The participants who showed it were, in most cases, using GenAI tools in good faith as a resource for getting difficult work done. The problem was that the work the tool was doing—monitoring argument clarity, generating revision ideas, evaluating structural coherence—was exactly the work that most needed to be done by the learner if genuine SRL development was to occur. As Zimmerman and Moylan (2009) emphasise, SRL is not a set of strategies to be applied—it is a capacity that develops through practice, feedback, and reflection. A tool that removes the occasion for that practice does not leave the developmental process intact; it changes the developmental process.

The cognitive offloading framework (Risko & Gilbert, 2016) captures the mechanism: the self-regulatory processes that GenAI was handling for passive substituters were being offloaded to the tool in ways that freed cognitive resources in the short term but left the underlying capacities undeveloped. The practical consequence—visible in the interview data by year's end—was that several passive substituters could not describe their own writing process beyond their GenAI interactions. The process, to the extent that it existed, was the tool's process. Their own SRL architecture had not grown; it had been bypassed.

Anxiety and the Affective Dimension

The anxious avoidance pattern reveals an important affective dimension of the GenAI-SRL relationship that purely cognitive accounts miss. Writing anxiety and GenAI use are not independent variables in this data—they are interacting ones. For high-anxiety writers, GenAI tools are not primarily writing tools; they are anxiety management tools. The relief they provide is real and, in the short term, functional. But anxiety management

through avoidance—doing the writing via the tool rather than working through the anxiety of doing it independently—is a well-documented route to maintaining rather than resolving anxiety, because it prevents the kind of successful independent performance experiences that anxiety reduction requires (Elaldi, 2022; Zheng & Cheng, 2022).

The implication is that writing pedagogy in contexts of high FLA needs to address the affective dimension of GenAI use directly—not just by teaching students to use tools appropriately, but by creating the low-stakes, scaffolded independent writing opportunities through which anxious writers can gradually build the confidence that reduces their reliance on any external support, including AI.

Critical Appropriation as a Pedagogical Goal

The critical appropriation pattern is, in many ways, the most hopeful finding in this study. It demonstrates that EFL writers can develop genuine metacognitive awareness of their own tool use and its relationship to their learning—but the data are equally clear that this development does not happen automatically. In all three cases, it was prompted by a specific experience of noticing a discrepancy between their tool use patterns and their own goals for their writing development. Two of those experiences were triggered by lecturer feedback; one was self-generated. None came from the course design itself.

The implication is that courses can and should create the conditions for critical appropriation more systematically—through explicit instruction on SRL and its relationship to tool use, through assessment tasks that require metacognitive documentation, and through feedback practices that respond to the writer's developing process as well as their finished product. Students who are asked to account for their writing decisions—including their decisions about when and how to use AI—are more likely to make those decisions deliberately. Students who are never asked to account for them will make them habitually.

Implications for Pedagogy and Programme Design

The findings generate a set of practical implications that extend across writing instruction, course design, and teacher professional development. Writing instruction in EFL contexts that have adopted GenAI tools needs to include explicit SRL development as a core goal, not an optional addition. This means teaching the forethought, performance, and self-reflection phases of the writing process explicitly, creating regular occasions for self-monitoring and self-evaluation, and scaffolding help-seeking behaviours in ways that distinguish productive tool use from developmental bypassing.

Course design needs to build in SRL documentation requirements—not as surveillance but as pedagogical scaffolding. Revision journals, process reflections, and rationale statements that ask students to account for their writing and revision decisions create the metacognitive occasions that critical appropriation requires. Task design needs to balance open-ended writing tasks (which are more authentic but create more opportunities for unreflective GenAI substitution) with structured process tasks that require independent SRL at specific phases.

Teacher professional development needs to address the GenAI-SRL relationship explicitly. Teachers who have not thought through how GenAI tools interact with the development of SRL in their specific student population are not well equipped to design instruction that supports autonomy development in AI-saturated writing environments. This is not primarily a technical training need—it is a pedagogical thinking need.

CONCLUSION

This study followed sixteen Indonesian EFL writers across one academic year to understand how GenAI tool access reshapes the self-regulated learning strategies through which writers develop as academic writers. What it found was not a single effect but a distribution of effects, shaped by what learners brought to the interaction and by what

their programmes asked them to do with the experience of using these tools. The passive substitution pattern—in which GenAI progressively replaced rather than supplemented self-regulatory effort—was the most common and the most concerning. It was not a product of laziness or bad faith but of a mismatch between underdeveloped SRL foundations and a tool powerful enough to fill every gap that underdevelopment leaves. The critical appropriation pattern—in which learners developed metacognitive awareness of their own tool use and actively managed its relationship to their learning—was rare but demonstrably achievable, given the right prompts and the right pedagogical conditions. The practical conclusion is not to restrict GenAI access—that ship has long since sailed, and the tools are genuinely useful in the hands of writers who can use them well. It is to invest, seriously and specifically, in the SRL foundations that determine whether learners will use these tools in ways that build their autonomy or in ways that quietly erode it. Those foundations do not develop through exposure to tools. They develop through teaching.

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