

Breaking AI Dependence in Argumentative Writing A Qualitative Action Research Utilizing the Socratic Method at SMAN 1 Sumbermanjing

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ABSTRACT

The rapid rise of generative AI tools like ChatGPT has left many high school students struggling with a deep cognitive dependency, quietly eroding their critical thinking and erasing their true voice in argumentative writing. To confront this challenge, this study explores how the systematic use of the Socratic Method can break this AI reliance and help English as a Foreign Language (EFL) students reclaim their independent reasoning. Using a Qualitative Action Research (QAR) approach, the study followed a practical cycle of planning, acting, observing, and reflecting with eleventh-grade students at SMAN 1 Sumbermanjing. Data gathered through classroom observations, close analysis of evolving essay drafts, and open-semi-structured interviews revealed a powerful shift. Structured Socratic questioning effectively peeled back the superficial layer of AI-generated text, prompting students to move away from passive copy-pasting and toward actual ownership of their work. Through these guided conversations, students gradually learned to break down AI outputs, rediscover their own unique authorial voices, and confidently defend their arguments on their own terms. Ultimately, this study shows that the Socratic Method serves as a vital antidote to tech-dependency, proving that thoughtful, human-centered teaching can restore student agency and real literacy in the digital age.

Keywords: AI Dependence, Argumentative Writing, EFL, Qualitative Action Research, Socratic Method.

ABSTRAK

Perkembangan pesat teknologi Artificial Intelligence (AI) generatif seperti ChatGPT telah memengaruhi proses pembelajaran menulis pada siswa EFL, khususnya dengan munculnya ketergantungan terhadap AI dalam penyusunan teks argumentatif. Kondisi ini berpotensi melemahkan kemampuan berpikir kritis, kemandirian belajar, dan kepemilikan ide siswa dalam menulis. Penelitian ini bertujuan untuk mengeksplorasi penerapan Metode Sokrates dalam mengurangi ketergantungan AI serta memulihkan praktik menulis argumentatif yang autentik pada siswa kelas XI SMAN 1 Sumbermanjing. Penelitian menggunakan desain Qualitative Action Research (QAR) dengan siklus perencanaan, tindakan, observasi, dan refleksi. Data dikumpulkan melalui observasi kelas, analisis perkembangan draf tulisan siswa, catatan lapangan, jurnal reflektif, serta wawancara semi-terstruktur. Hasil penelitian menunjukkan bahwa penggunaan pertanyaan Sokrates secara sistematis mampu mengungkap kesenjangan antara teks hasil AI dan pemahaman siswa. Modifikasi intervensi melalui lembar umpan balik tertulis dan diskusi sebaya berhasil menurunkan kecemasan

siswa serta meningkatkan partisipasi aktif dalam proses revisi. Selain itu, siswa mulai meninggalkan kosakata kompleks yang tidak dipahami dan beralih pada penggunaan bahasa yang lebih sederhana namun sesuai dengan kemampuan serta konteks lokal mereka. Temuan ini menunjukkan bahwa Metode Socrates efektif dalam mengurangi ketergantungan terhadap AI dan memperkuat kemandirian berpikir serta kepemilikan gagasan dalam menulis argumentatif.

Kata Kunci: Ketergantungan AI, Menulis Argumentatif, Metode Socrates, EFL, Penelitian Tindakan Kualitatif.

INTRODUCTION

The global landscape of English as a Foreign Language (EFL) education is currently experiencing significant transformation due to the rapid development of generative Artificial Intelligence (AI) technologies (Arif & Naeem, 2025; Javed, 2024; Xiao et al., 2026). The integration of AI tools into educational settings has altered traditional learning processes, particularly in writing instruction, where students can instantly generate complete texts with minimal cognitive effort. While these technologies offer efficiency and accessibility, their excessive use raises concerns regarding authenticity, critical engagement, and student independence in language learning.

Among various language skills, argumentative writing occupies a central position in EFL instruction because it requires students to formulate claims, organize evidence, evaluate opposing views, and defend ideas through logical reasoning (Khudaverdiyeva, 2025; Wang & Newell, 2025). Argumentative writing is therefore not merely a linguistic activity but also a cognitive process involving analysis, reflection, and critical thinking (Bean & Melzer, 2021). The development of this skill traditionally depends on active intellectual struggle in which learners construct ideas independently while negotiating vocabulary, grammar, and meaning.

However, the widespread availability of smartphones and AI-based writing tools has gradually shifted this process. Instead of engaging in brainstorming, idea development, and textual revision, many students increasingly rely on automated systems to generate arguments and complete assignments instantly. This condition creates a gap between written products and actual comprehension because students often submit sophisticated texts without understanding the vocabulary, claims, or reasoning contained within them. Consequently, writing activities risk becoming mechanical reproduction rather than meaningful language construction.

The long-term consequence of this dependency extends beyond issues of plagiarism or academic integrity. Excessive reliance on AI potentially weakens student agency, reduces ownership of ideas, and diminishes authorial voice in writing activities (Călinescu, 2024; Graham & Milan, 2025). As students continuously delegate cognitive processes to algorithms, they gradually move from active language creators toward passive text consumers. This phenomenon presents a serious challenge for EFL classrooms where authentic expression and independent reasoning constitute essential learning outcomes.

To address this issue, educational intervention should move beyond restrictive policies or technology prohibition, which are increasingly difficult to implement in

digitally connected environments (George, 2024; Gulson et al., 2022). One potential pedagogical alternative is the Socratic Method. Originating from dialogic questioning traditions, the Socratic Method emphasizes systematic inquiry, reflective thinking, clarification of assumptions, and evidence examination through guided interaction. Rather than providing answers directly, teachers stimulate learners through structured questions that encourage deeper understanding and independent reasoning.

Within argumentative writing instruction, the Socratic Method becomes particularly relevant because both emphasize reasoning construction and justification of claims. Through clarification questions, evidence probing, assumption checking, and argumentative defense, students are encouraged to examine the logic of their own texts and critically evaluate AI-generated outputs. Thus, the method functions not only as a mechanism for identifying AI reliance but also as an instructional strategy for restoring authentic writing practices and rebuilding critical engagement.

Although previous studies have extensively discussed AI-related academic integrity issues and separately demonstrated the effectiveness of the Socratic Method in promoting critical thinking (Nwozor, 2025; Ogwueleka, 2025), limited studies have integrated these domains within EFL argumentative writing contexts. Furthermore, empirical evidence regarding the practical use of the Socratic Method to reduce AI dependence among secondary school students, particularly in rural Indonesian settings, remains scarce. This gap raises broader questions regarding how dialogic interventions may contribute to reducing AI reliance while supporting authentic argumentative writing development.

Based on these issues, this study addresses three central concerns: the manifestation of AI dependence in students' argumentative writing practices, the implementation of the Socratic Method as a dialogic intervention to reduce such dependence, and the pedagogical changes emerging from the intervention process in restoring authentic writing practices.

Therefore, this research investigates the implementation of the Socratic Method among Eleventh-Grade students at SMAN 1 Sumbermanjing to explore how structured questioning can reduce AI dependence and strengthen authentic argumentative writing practices. The study further examines the contextual challenges and pedagogical outcomes emerging during the intervention process, providing a localized framework for promoting independent reasoning and restoring student ownership in EFL writing.

METHODS

This study adopts a Qualitative Action Research (QAR) design, utilizing the classic cyclical framework pioneered by Kemmis and McTaggart (Stephen Kemmis & Robin McTaggart, 2014). This methodological choice emphasizes that the iterative cycles of Planning, Acting, Observing, and Reflecting do not seek numerical data or statistical validation to measure success. Instead, the research is firmly grounded in interpretive qualitative inquiry, focusing on capturing a rich, dense description of behavioural shifts, textual evolutions, and the subtle pedagogical interactions occurring within the classroom ecosystem. By prioritizing deep qualitative

observations over statistical metrics, this design allows for a nuanced understanding of how dialogic interventions fundamentally alter a student's relationship with technology.

Subject and Setting

The participants for this study consisted of 32 Eleventh-Grade students at SMAN 1 Sumbermanjing during the 2025/2026 academic year. This specific cohort was purposely selected because they exhibited a severe, systemic reliance on generative AI tools for their take-home writing assignments, resulting in a complete stagnation of their independent language production. The setting, SMAN 1 Sumbermanjing, is a public high school located in a suburban-rural district where widespread smartphone access and ubiquitous internet connectivity directly enable students to utilize instant AI bypasses. Despite this high level of digital connectivity, the school lacks an English immersion environment, creating a distinct educational paradox: students possess the advanced digital tools to generate flawless synthetic English prose, yet they have minimal daily exposure to authentic, real-world English language processing.

Action Research Cycles and Refinement

Cycle 1: Oral Confrontation and Cognitive Dissonance

The qualitative action progressed through two distinct, evolutionary cycles of refinement to systematically dismantle AI dependency. In Cycle 1 (Oral Confrontation), the Planning phase involved developing an argumentative writing prompt alongside an initial bank of Socratic questions targeted at conceptual clarity and evidence validation. During the Acting phase, students drafted their essays, heavily utilizing AI, after which the teacher conducted intensive, one-on-one verbal Socratic conferences, questioning individual students directly about their advanced vocabulary and structural logic.

Through close Observing, extensive field notes were captured detailing student responses, emotional resistance, and palpable instances of cognitive dissonance when students realized they could not defend their automated text. In the final Reflecting phase of this cycle, critical qualitative bottlenecks were evaluated, revealing that while the oral confrontation effectively exposed the AI-generated "veneer of competence," it caused high student anxiety and consumed an unsustainable amount of limited classroom time.

Modified Socratic Intervention through Written Guidance and Peer Discussion

Based on the reflection results from Cycle 1, the oral confrontation strategy required refinement because individual questioning created considerable student anxiety and demanded extensive classroom time. Therefore, Cycle 2 modified the implementation of the Socratic Method by introducing written guidance and collaborative discussion activities while maintaining the same dialogic principles of questioning and argument verification.

During the Planning phase, the teacher redesigned the intervention by converting oral Socratic questions into structured Written Socratic Feedback Sheets containing prompts related to argument clarification, evidence support, vocabulary

understanding, and contextual relevance. Students were also prepared to engage in peer discussion sessions where they questioned and evaluated each other's argumentative texts.

In the Acting phase, students revised their essays within a controlled classroom setting without smartphone access. The revision process was guided by written Socratic prompts and peer questioning activities aimed at encouraging students to explain ideas using their own language, justify evidence, and identify sections that appeared excessively dependent on AI-generated expressions.

The Observing phase focused on documenting behavioural changes, including students' willingness to explain arguments independently, reduced reliance on advanced unexplained vocabulary, and increasing participation during peer discussions. Student reflective journals and classroom observation notes were also collected.

Finally, the Reflecting phase involved comparative analysis across the initial draft, revised draft, and final writing version. The findings indicated a gradual movement from AI-assisted text reproduction toward authentic authorship, showing that adapting the Socratic Method into written and collaborative formats reduced anxiety while strengthening independent reasoning and ownership in argumentative writing.

Data Collection and Instruments

To capture the intricate nuances of this pedagogical shift, the study employed three distinct qualitative tools designed to triangulate the data (W. Wang & Duffy, 2009). First, Iterative Document Analysis (Textual Tracking) was used to meticulously monitor linguistic and structural transformations across three distinct essay stages: the initial AI-generated draft, the post-Socratic revision, and the final human-authored essay. This textual tracking allowed for a direct visual assessment of how students stripped away robotic templates in favour of authentic phrasing.

Second, Observation Field Notes and Observation Checklists were kept by both the teacher and a peer collaborator to document real-time student behaviours, capturing the critical transitions from frozen, blank stares during initial questionings to active, vocal explanations during peer dialogues. Finally, Semi-structured Interviews were conducted at the conclusion of the research with a purposive sample of students, specifically those who initially exhibited the heaviest dependency on generative AI, to extract their lived experiences, emotional resistance, and perceived cognitive shifts throughout this technological "weaning" process.

In alignment with the Qualitative Action Research design, the success of this intervention was not measured by standardized numerical test scores, but rather through three explicit, qualitative indicators of authentic learning. The first indicator was Linguistic Authenticity, defined as a visible alignment between the final essay's vocabulary and the student's actual proficiency level, marked by the complete disappearance of inorganic, robotic jargon. The second was Conceptual

Defense, which required that students be fully capable of explaining, defending, and expanding upon their written claims during classroom discussions without relying on their devices for reassurance. The final indicator was Intellectual

Autonomy, determined through observation data that verified a significant, visible reduction in a student's immediate impulse to look at a smartphone screen the moment a conceptual or linguistic writing problem arose.

RESULTS AND DISCUSSION

Findings

Problem 1: The AI Illusion and the Initial Friction of "Confrontation"

The baseline condition of the eleventh-grade classroom at SMAN 1 Sumbermanjing was characterized by a deceptive technical perfection. Initial document analysis revealed heavy AI markers across almost all student submissions; essays featured overly rigid, five-paragraph structures, inorganic transitions, and complex vocabulary entirely detached from the students' usual interlanguage. A representative excerpt from an initial student draft on renewable energy read:

"Furthermore, the transition to sustainable energy paradigms acts as a catalyst for socio-economic equilibrium, necessitating a symbiotic relationship between state policy and corporate accountability."

The absolute superficiality of this prose was exposed during the first Socratic intervention of Cycle 1, which induced immediate cognitive shock. When the student who submitted the aforementioned essay was asked during a one-on-one conference, *"You wrote that this policy has a 'symbiotic relationship' with economic growth. Can you give me a real-world example of this symbiosis in Malang or East Java?"*, the classroom environment grew tense. As recorded in the observation field notes:

"Student S11 immediately froze, eyes darting to their desk, before instinctively reaching for their smartphone to search for an answer. When reminded that the phone was put away, the student fell silent, nervously fidgeting with their pen before admitting, 'Saya tidak tahu artinya, Pak' (I don't know what it means, Sir)."

This initial friction and acute emotional discomfort were observed across the cohort, laying bare a complete disconnect between the synthetic text and human comprehension.

Problem 2: The Psychological Shift to Vulnerable Writing

The turning point occurred during Cycle 2, when the Socratic Method was decentralized into written feedback slips and peer-led cross-examinations. This structural shift significantly lowered the students' situational anxiety, transforming defensive posturing into productive vulnerability. Realizing that their peers would relentlessly interrogate any text they could not comprehend, students began to intentionally strip away bloated AI jargon from their drafts. They embraced simpler, authentic language that they could actually control and defend. This psychological breakthrough was clearly articulated during post-research semi-structured interviews. One heavily AI-dependent student reflected:

"At first, I was really frustrated because AI made my writing look so smart and professional. But when my seatmate started asking me those Socratic questions from the slip, I realized I was completely trapped because I couldn't explain a single sentence. I decided it was much better to write a simpler essay using my own words so I could actually defend my thoughts during the peer workshop."

This shift marks the exact moment students abandoned the sterile safety of automated text generation and chose to re-engage with the vulnerable, authentic process of second-language writing.

Problem 3: Reclaiming Authorial Voice and Critical Ownership

The ultimate success of the action research is visible in the stark textual contrasts between the initial AI-assisted drafts and the final, human-authored submissions. While the final drafts occasionally exhibited minor grammatical flaws or less sophisticated sentence patterns, they vibrated with local context, genuine human emotion, and authentic argumentative reasoning.

Draft Version	Textual Excerpt	Characteristics
Initial Draft	<i>"The optimization of local agricultural infrastructure is of paramount importance to mitigate rural poverty and ensure nutritional security."</i>	Sterile, advanced vocabulary, devoid of personal connection or localized context.
Final Student Draft	<i>"In my opinion, the government must help farmers in Sumbermanjing. Many farmers here lose money because the roads are bad and corn decays fast. If we have good roads, our village can be rich."</i>	Minor syntax errors, but features clear local context, authentic vocabulary, and independent reasoning.

As shown in this text comparison, the student stripped away the clinical, automated jargon ("*mitigate rural poverty*," "*nutritional security*") and replaced it with an authentic, localized argument regarding their own community's economic struggles. By defending this simpler text independently during classroom discussions without checking a device, the student proved that the cycle of AI dependency had been broken, successfully reclaiming their authorial voice and critical ownership over their literacy. Discuss the three themes/problems

The findings of this Qualitative Action Research can be organized into three interrelated problems that reflect the core problems of AI dependence in EFL argumentative writing. The first problem highlights the AI illusion of competence, where students produced linguistically advanced essays that were not aligned with their actual understanding. This created a surface-level performance of writing proficiency, while concealing a lack of conceptual comprehension. The Socratic intervention in this phase revealed a critical disconnect between textual output and cognitive ownership.

The second problem concerns the breakdown of cognitive engagement and student dependency on external tools, particularly generative AI and smartphones. Students initially demonstrated minimal effort in generating ideas independently and tended to outsource their thinking processes to AI systems. However, through

structured Socratic questioning, students were gradually pushed to confront gaps in their understanding, which shifted them from passive text users into active meaning-makers. This transition indicates a shift from automation dependence toward guided cognitive reconstruction.

The third problem focuses on the recovery of authorial voice and intellectual autonomy, where students began to reconstruct their arguments using simpler but personally meaningful language. Although the linguistic complexity decreased, the depth of understanding and contextual relevance increased significantly. Students showed greater ability to explain and defend their ideas without relying on AI assistance, indicating stronger ownership of their writing process.

When these three problems are interpreted through Vygotsky's Zone of Proximal Development (ZPD) and instructional scaffolding, it becomes evident that generative AI functioned as a bypassing scaffold that eliminated productive cognitive struggle. In contrast, the Socratic Method operated as a dialogic scaffold that re-engaged students within their ZPD by requiring explanation, justification, and reflection. The guided questioning process positioned learning within a space of productive struggle rather than instant completion.

Furthermore, the findings demonstrate that cognitive discomfort plays a crucial pedagogical role in disrupting AI dependency. The frustration experienced during initial Socratic interactions was not a failure of learning, but a necessary trigger for awareness and cognitive activation. This discomfort shifted students from answer-seeking behaviour toward reasoning-based engagement.

Ultimately, this study reframes the role of the teacher in AI-saturated classrooms. Rather than functioning solely as an evaluator of finished texts, the teacher becomes an auditor of thinking processes. Through structured dialogic intervention, educators can move beyond the illusion of competence created by AI tools and restore authentic language learning, critical thinking, and student agency in EFL writing contexts.

CONCLUSION

This study demonstrates that AI dependence in argumentative writing among EFL students was manifested through the production of linguistically sophisticated texts that lacked conceptual understanding, authorial ownership, and independent reasoning. The implementation of the Socratic Method through dialogic questioning successfully exposed the discrepancy between AI-generated products and students' actual comprehension. The findings further indicate that adapting Socratic questioning into written feedback and peer discussion formats reduced student anxiety while maintaining reflective engagement. Through this intervention, students gradually shifted from passive reliance on AI-generated content toward active participation in constructing and defending their own arguments. Moreover, the research shows that authentic writing development does not necessarily emerge from linguistic complexity but from meaningful engagement, contextual relevance, and intellectual autonomy. Students eventually reconstructed their arguments using simpler language that reflected their actual experiences and local realities, indicating the recovery of authorial voice and ownership. Therefore, the Socratic Method can be

considered an effective pedagogical strategy to reduce AI dependence in EFL argumentative writing classrooms. The study also suggests that teachers in AI-integrated learning environments should move beyond evaluating final products and focus more on monitoring students' thinking processes, reasoning development, and authentic language construction. Future studies may extend this intervention to different educational levels and investigate its long-term impact on digital literacy and critical thinking development.

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