IRC [CCCC 2026]'s Project

Writing by Hand in the Age of AI: Rethinking Composition Through Analog Practices

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[This is a work-in-progress for a pilot study.]

Introduction & Rationale of Study

The rapid integration of generative AI into higher education has significantly reshaped student writing practices. AI-powered tools such as ChatGPT, Grammarly, and QuillBot provide immediate feedback on grammar, style, and coherence and can even generate entire drafts from prompts (Das & Chen, 2025). While these tools offer convenience, scholars and instructors increasingly express concern that automated drafting reduces opportunities for students to engage in writing as a cognitive and reflective process, a practice through which ideas are discovered, tested, and refined (Aljuaid, 2024; Lund et al., 2025). Existing research on the cognitive benefits of writing highlights how handwriting supports memory and conceptual processing (Meer & Weel 2024; Marano et al., 2025; Mueller & Oppenheimer, 2014); however, such studies often occur in controlled laboratory settings and rarely address authentic classroom context, where analog writing has become unfamiliar to many students, particularly Gen Z learners accustomed to digital immediacy. This pilot study responds to these concerns by examining the pedagogical value of analog writing practices, specially handwriting during drafting, freewriting, and low-stake assignments – as strategies to re-engage students, reduce reliance on generative AI tools, and restore a sense of agency in their writing. Implemented in a first-year writing course, the study explores how handwriting fosters embodiment, independent thinking, and ownership. By situating analog writing in authentic classroom conditions rather than experimental labs, this research foregrounds the lived experience of students engaging in embodied cognition during the writing process and offers a mindful counterbalance to the disembodied, efficiency-driven practices encouraged by digital and AI tools.

Drawing on embodied cognition, which posits that learning emerges from dynamic interactions among mind, body, and environment, handwriting is conceptualized as a bodily,

intentional act that slows pace, heightens presence, and fosters agency (Korte & Körkkö, 2024; Macrine, 2022). In contrast to the disembodied efficiency of AI-enabled typing, handwriting recruits other sensory systems, like gestures and tactile attention that may deepen conceptual processing and memory (Castro-Alonso, Ayres, Zhang, de Koning, & Paas, 2024; Korte & Körkkö, 2024). Similar to handwriting, freewriting, which is an uninterrupted, unedited writing process, has been shown to reduce anxiety, support exploratory thinking, and improve fluency in introductory writing contexts (Li, 2007; Millar, 2010). This study explores analog writing as a pragmatic counterbalance to AI-assisted practices and a means of re-engaging first-year students with writing as cognitive act. The rationale of this study is informed by key theorists in composition and literacy studies. Walter Ong's concept of writing as technology reminds us that all writing tools, from pens to AI, reshape thought, challenging the inflated value placed on automation and reaffirming handwriting's generative potential. Shari Stenberg's critique of disembodied pedagoggies validates handwriting as an act of presence and material engagement. Peter Elbow's advocacy for freewriting underpins the use of low-stakes handwritten exercises to reduce anxiety and increase the freedom to write. James Britton and Janet Emig's writing-to-learn framework positions writing as a mode of thinking, reinforcing the study's aim to restore writing as a reflective, cognitive process. Finally, Robert Yagelski's notion of writing as a way of being frames writing as relational and existential, aligning with this study's goal to cultivate mindfulness and agency through analog practices.

Over a 15-week classroom, the study examines how handwriting and freewriting influence engagement, reshape attitudes toward process, and help instructors better gauge students' baseline abilities amid concerns about undisclosed AI use (Bittle & El-Gayar, 2025; Wilson & Burleigh, 2025). As institutions seek balanced approaches to AI, neither blanket adoption nor outright bans, this project offers a practical, evidence-informed model for integrating analog writing to restore deliberation, presence, and ownership while building critical AI literacy in the writing process (Aljuaid, 2024; Das & Chen, 2025).

Theoretical Framework and Literature Review

This study is grounded in the understanding that analog writing is itself a technology – a deliberate, embodied practice that reconnects mind and body through physical engagement. While AI-assisted writing offers benefits such as personalized feedback and efficiency, research

warns of risks including over-reliance, diminished struggle, and blurred authorship (Aljuaid, 2024; Das & Chen, 2025). Students often perceive full AI-generated papers as misconduct yet remain ambivalent about partial assistance (Lund et al., 2025). For instructors, analog artifacts provide traceable evidence of process and ability (Bittle & El-Gayar, 2025; Wilson & Burleigh, 2025). Composition research considers writing as a tool for discovering meaning and a heuristic for thinking, rather than merely recording ideas. James Britton and Janet Emig's writing-to-learn principle positions writing as a mode of learning, reinforcing the cognitive value of slowing down the process. Empirical studies confirm that focused freewriting lowers anxiety, surfaces tacit knowledge, and catalyzes insight for novice writers (Li, 2007; Millar, 2010). These practices echo Peter Elbow's advocacy for informal, ungraded writing, which fosters fluency and risk-taking. These principles inform the study's use of low-stakes handwritten exercises to re-engage students with writing as generative and reflective. In first-year courses, routine freewriting normalizes "productive messiness," helping students develop stamina and confidence in their cognitive processes. By emphasizing interconnectedness and presence, Yagelski's framework supports analog practices as a means of fostering mindfulness and agency. The literature suggests that analog practices can reintroduce deliberation, presence, and reflection within AI-saturated contexts. Hybrid pedagogies that combine embodied, mindful writing with critical AI literacy may offer the most sustainable approach for first-year writing instruction.

Research Questions

1) What observable changes occur in classroom dynamics when analog writing is introduced as a regular practice?

2) How do analog writing practices influence student engagement in first-year writing courses?

Methodology

Research Design

The pilot was conducted in a first-year writing course during Fall 2025 (September–November), spanning 12 weeks. Analog writing activities were heavily concentrated in the first six weeks to establish habits and observe initial reactions. Activities included:

- Freewriting exercises to encourage spontaneous thought.

- Timed analog writing sessions using prepared notes.
- Three handwritten summaries submitted as low-stakes assignments.

Analytic Approach

- Comparative Artifact Analysis: These activities allowed for comparison between early handwritten work and later submissions, helping instructors who suspect AI assistance in student writing but lack a clear sense of students' actual abilities.
- Thematic Analysis of Observations and Reflections: Coding focused on presence, agency, anxiety, and ownership, with attention to shifts in equipment habits (bringing pens, requesting paper). Classroom observations examined student engagement, physical responses, and attitudes toward handwriting through informal conversations. Artifacts collected included handwritten drafts and summaries.

Ethics

Activities were integrated into course routines as low-stakes work. Reflections were voluntary, and students' privacy and anonymity were protected.

Preliminary findings

My observations indicate notable shifts in classroom dynamics and student attitudes toward handwriting and writing-to-learn practices. These finding can be summed up into two main areas of change:

1) *Changes in dynamics and attitudes toward handwritten tasks:* In the early weeks, students showed hesitation, but their familiarity and comfort with handwriting increased over time. Questions about whether work would be collected or shared affected polish and spontaneity: private freewriting was notably raw and exploratory, while submitted summaries were more structured. Over time, students who initially arrived without writing tools began bringing their own pens and requesting paper for brainstorming, signaling a shift toward valuing analog practices and process visibility.
2) *Process visibility and physical demands of writing:* Observation also revealed more peer-to-peer conversations focused on ideas rather than formatting. Some students experienced physical strain when asked to handwrite approximately 500 words, underscoring their lack of practice with extended handwriting. Overall, during analog sessions, students appeared more attentive and present, with fewer digital distractions. Handwriting slowed

the pace and made thinking auditable, an observable sequence of idea development, providing instructors with clearer baselines of students' abilities in an AI-pervasive environment.

Limitation

These experiences highlight how handwriting reconnects thought and physical effort, contrasting with typing mediated by autocorrect or AI tools and shows that handwriting reintroduces writing as a bodily mindful act, which could be an essential counterbalance to the automation of writing in the age of AI. However, this study is still in its initial stage. With that said, here some limitations and plans for moving forward.

Limitation	**Plan**
Very small sample size and scope: The pilot was limited to one semester and a single course context, so the results cannot be generalized.	Expand sample: I plan to include multiple sections and collaborate with other instructors teaching first-year writing courese.
Lack of quantitative data: Findings are primarily qualitative (observations and informal conversations), without systematic measurement of learning outcomes.	Collect more data: I need to gather more data, particularly from the students' perspectives. I plan to collect students' reflections after each analog session to capture evolving attitudes. Then, I can combine them with qualitative observations.
Short observation period: Concentrating analog writing in the first six weeks may not capture long-term changes.	Longitudinal design: Track changes over an entire academic year to assess sustained impact of analog writing. I also plan to integrate mixed sessions: technology-free analog writing alongside sessions where generative AI tools are permitted. I believe this approach can provide us insights into building critical AI literacy while preserving space for embodied, mindful writing practices.

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Institutional Description

I teach First-Year Writing at Northwestern University in Qatar (NU-Q), located in Education City, Doha. NU-Q is the 12th school of Northwestern University and its only overseas campus, established in partnership with Qatar Foundation in 2008. The campus offers undergraduate degrees in journalism and communication, alongside a liberal arts program, serving approximately 500 students across two majors and three programs. About 40% of students are international, while the remainder are primarily Qatari or from the Gulf region. This multicultural environment shapes classroom dynamics as students bring diverse linguistic and technological literacies. Institutional factors influencing this research may include 1) Regional emphasis on technological innovation, heightening the relevance of handwriting as a counterbalance to AI-driven norms and 2) A media-centric curriculum dominated by digital tools, making analog practices a deliberate pedagogical intervention.

Key Theorists and Frames

This study is grounded in the understanding that analog writing is itself a technology, one that reconnects body and mind through deliberate, physical engagement. By incorporating low-stakes handwritten freewriting, students rediscover writing as a process of thinking and being, rather than a product mediated by automation. I use the following frameworks:

- *Walter Ong: Writing as Technology*: Ong's concept that "writing restructures thought" invites us to reconsider generative AI and other digital tools as simply extensions of writing technologies, no more inherently superior than a pen or pencil. This perspective challenges the inflated value placed on automation and reaffirms handwriting as a practice that activates embodied cognition.
- *Shari Stenberg: Embodied Classrooms, Embodied Knowledges:* Stenberg critiques composition pedagogies that treat writing as purely cognitive, ignoring the body's role in learning. Her framework grounds this study in the mind-body connection, emphasizing that writing involves physical presence, emotion, and material conditions. This lens validates the pedagogical significance of handwriting as an embodied act.
- *Peter Elbow: Freewriting**:*** Elbow advocates informal, ungraded writing to reduce anxiety and foster fluency. His approach informs the use of low-stakes handwritten exercises in

this study, which help students reconnect with writing as a generative process rather than a polished product.

- *James Britton & Janet Emig: Writing to Learn:* Emig positions writing as a mode of learning – a tool for thinking, not just communication. This principle supports the study's aim to restore writing as a cognitive and reflective act, particularly through analog practices that slow down the process and deepen engagement.
- *Robert Yagelski: Writing as a Way of Being*: Yagelski reframes writing as an existential, relational practice, giving an opportunity to writers to experience interconnectedness and presence, which aligns with this study's goal: to cultivate mindfulness and agency through handwriting in first-year writing courses.

Glossary

- *Analog Writing:* Writing by hand using pen and paper, as opposed to digital or AI-assisted composition.
- *Freewriting:* Timed, unstructured writing exercise aimed at idea generation without concern for grammar or polish.
- *Embodied Knowledge:* Understanding that learning and writing involve the body, emotions, and material conditions.
- *Generative AI Tools:* AI-based applications (e.g., ChatGPT) that assist in producing text, often reducing manual drafting.
- *Writing-to-Learn:* A pedagogical approach emphasizing writing as a tool for thinking and understanding.