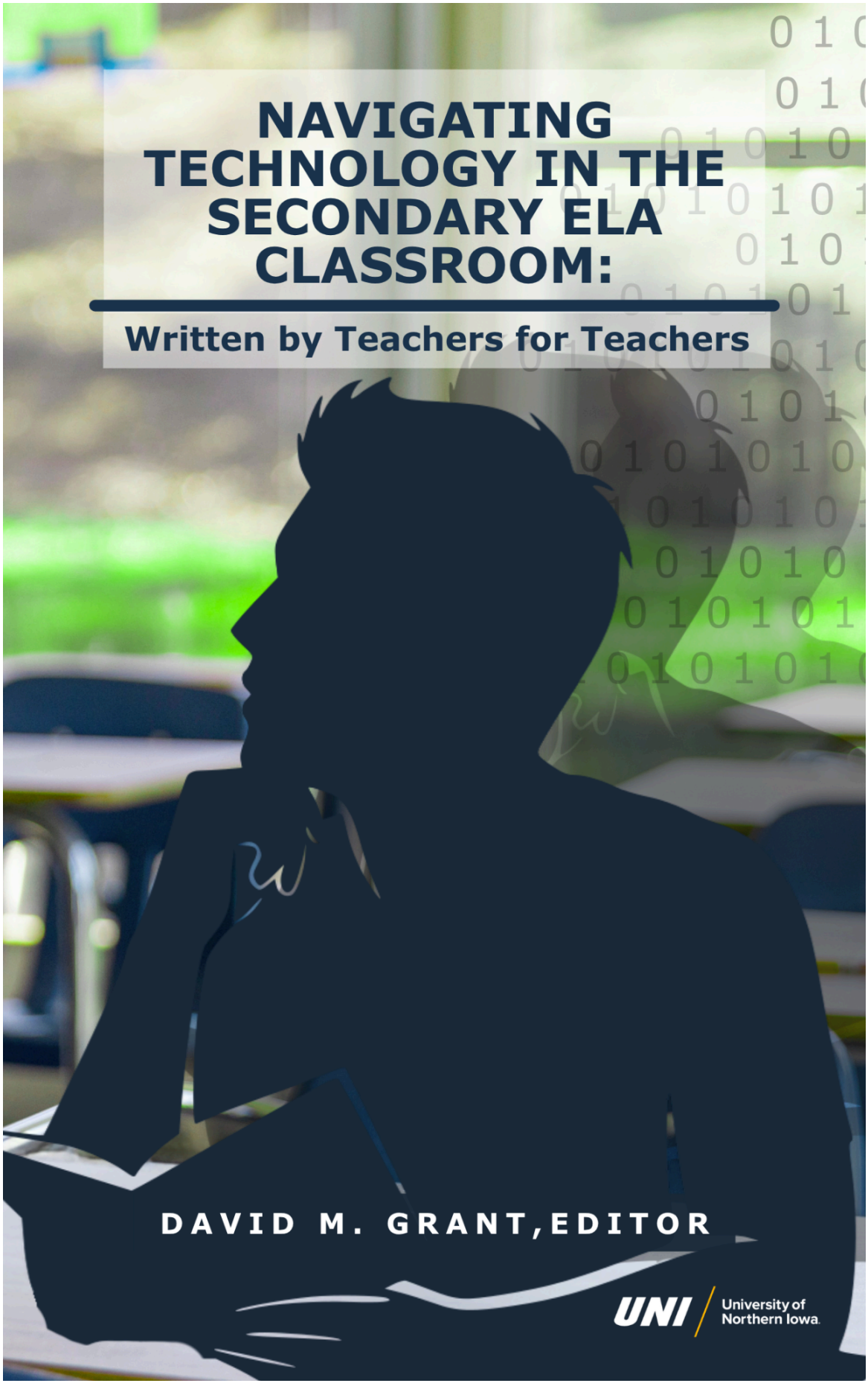
NAVIGATING TECHNOLOGY IN THE SECONDARY ELA CLASSROOM:
Written by Teachers for Teachers
DAVID M. GRANT, EDITOR
UNI University of Northern Iowa

Published by Rod Library, University of Northern Iowa

Navigating Technology in the Secondary ELA Classroom: Written by Teachers for Teachers

Table of Contents

Introduction

Dr. David M. Grant

This collection is a digital project of dedicated teacher-scholars who met in the summer of 2025 as part of the University of Northern Iowa's graduate program in Teaching English in the Secondary Schools (TESS). Using the theoretical lens of multiliteracies, developed by the New London Group in the 1990s, students examined the impacts of several electronic and digital technologies on their students and their teaching, especially Artificial Intelligence, or A.I. Through fiction, nonfiction, and discussion, students considered the changes, the challenges, and the opportunities these technologies held. Most importantly, they investigated what these developments meant for their teaching, their districts, and their students at a time of great change.

Multiliteracies understands two major aspects of literacy learning: technology and culture. Stereotypes to the contrary, Iowa is a diverse state with both established cultural communities and many recent immigrants hoping for a better life. While wanting to preserve their heritage, these community members are also eager to learn how to fit into American culture and Iowa's place within that. The teachers represented here are in contact with young people from these and other communities and nurture and support them in their encounter with both print and digital texts and tools. Multiliteracies helps *all* students see how technologies reflect and affect community values, assumptions, and goals. Multiliteracies also presents honest messages about literacy to students by focusing on visual, textual, audial, and spatial modes in real world situations. A fancy way of saying this is that using a pedagogy of situated learning, critical framing, overt instruction, and transformed practice, multiliteracies engages students with their own worlds which we know is increasingly electronic in its medium and global in its scope.

Overall, this approach focuses on learning about information itself, not just deciphering meaning. As such, multiliteracies remains a potent means to make English Language Arts (ELA) subject matter relevant and useful for young people.

As ELA practitioners, the authors collected here are best positioned to offer insights to other teachers both in the state of Iowa and elsewhere. They know who is making a home in their communities, who is struggling, and how everyone can enrich both the school and the state through expression, critical analysis, and camaraderie. Because the writers here bring several decades of combined experience, each section is grounded in a sense of audience, not guided by any specific overview or theoretical construct. The authors write from a sense of *praxis*, or reflective practice as they move through UNI's unique program for supporting, mentoring, and teaching secondary educators. This webtext, then, is intended for secondary teachers foremost, both in and outside of Iowa. These are not cookie-cutter teaching recipes, but reflective engagement with the tough questions about how literacy and ELA educators might respond to a profound technological development – the ease and widespread use of generative A.I. trained upon Large Language Models (LLMs). If a student can submit a teacher's question about themes in Shakespeare and receive an answer in a few seconds without having themselves read *Romeo and Juliet* or *Hamlet*, how can ELA teachers ensure that the student is meeting the learning objectives, not the A.I.? There is no definitive answer here, but many different responses depending on instructor, lesson goals, and district support.

Because teachers do not teach in a vacuum, this collection is also intended for school administrators, parents, and students earning their degree in secondary language arts. Given the wide array of A.I. tools from Google Search terms to their inclusion in many electronic Learning Management Systems (LMS), their ubiquity seems inescapable. It is almost impossible for a

single teacher to create an A.I.-free zone amidst the plethora of available devices. While many school districts and buildings are opting to create phone-free schools during instructional time, some still work within the legacy of 1:1 computing and Chromebooks. Even further, simply banning digital tools deprives students of critically thinking about what they see and hear in an age when so much is computer generated, yet passed along as real. There needs to be some balance between allowing secondary students the freedom to explore their world electronically and critical guidance on misinformation, conspiracy theories, untruths, and the very real dangers posed by online actors. That balance may not be the same for all, but it is a facet of modern education and life.

These issues and more come up in the following sections. We hear voices advocating for humanity among machines, the work of going beyond A.I. detection tools, how A.I. is affecting student ability to read critically, the value of writing by hand, and how decades of research from composition studies can help teachers focus on the learning A.I. cannot do within the writing process. We also hear about social-emotional learning (SEL) and health issues in the face of excessive attachment to screens. We hear about teaching research strategies in an age when Google prioritizes its own A.I. responses. And we hear about the community effects of A.I. tools and the drastic effect they have on our environment. We are reminded that A.I. is not just affecting what happens in the ELA classroom, but everything. Yet as these teachers will tell you, the ELA classroom is a special place that is not easily separated from community. What happens in the world is what ELA students bring to their creative expressions, their reading strategies, and their passionate arguments for the world they are about to venture ever further into.

Coda

What you will find here is not meant to be read in any particular order. It does not follow a linear sequence, but covers various topics of interest and of design by the ELA teachers in the class. It also offers many different writing styles rather than just a thesis-driven argumentative form. Some sections overlap or share similar concerns and the reader is invited to work through these as they see meaningful to them. We looked at similar texts as models for this work, such as *Bad Ideas About Writing* and *Naming What We Know: Threshold Concepts in Writing Studies*. These helpful guides informed the design of this collection and how we hope it might be of use to ELA teachers. As the professor, I did not design this class to contain any sort of golden rule or transcendent answer, but to be like ELA classrooms across the state and nation: a place to share perspectives and collaboratively inquire about our world. I often described the course as "Where are we all doing about A.I.?" not “Here’s what to do.” I hope that spirit carries through to you, the reader.

Avoiding Issues with AI Detectors

Alexandra Parham

When an assignment calls for instructors to assess students' writing skills, it is necessary that students and not computers complete the writing. But, in this era of emerging generative AI, how can teachers ensure that students are learning writing standards and demonstrating mastery? How can we best use our limited time and resources to meet instructional goals and the needs of our students rather than searching for computer generated content? Many instructors have been frustrated with the amount of time spent screening student work for AI use that is inappropriate for the goals of an assignment. Since this is such a common frustration, companies, products, and programs have arisen that purport to help teachers identify AI like Turnitin or GPTZero. Although I haven't made a practice of it, I've used these programs myself when I sought to confirm my suspicion that I was reading the work of a computer, not one of my seventh grade students. However, just as students should be judicious about the technologies they use in writing, teachers should be cautious about outsourcing their thinking about and assessment of student writing to these programs.

According to GPTZero's website, the company launched its AI detection platform three months after the release of ChatGPT. The company "knew the new challenge that AI could pose to information transparency and academic integrity" ("AI Detector - the Original AI Checker for ChatGPT & More"). Seeing the negative consequences that the technology was already having in classrooms, the company created another product to solve issues with students using generative AI. While there are free versions of AI detectors for teachers to use, there are also more detailed reports available through paid versions of the product. On the other hand, there are free versions

of generative AI for students to use and also paid versions that claim to be more realistically human. The result could easily become an arms race between students using more and more advanced generative AI tools and teachers using increasingly sensitive AI detectors, with companies profiting from both sides. Like most educators, I became a teacher because I like kids and I don't wish to view my students' work with scrutiny and suspicion.

Currently, the homepage of GPTZero claims to be the world's most accurate AI detector with 99% accuracy. However, when you scan a piece for AI, the results also state "The nature of AI content is changing constantly. These results should not be used to punish students." The website also boasts about the large number of teachers already using this technology regularly, so even a high level of accuracy is going to generate false reports. False positives have a negative impact on students and so accusations of academic dishonesty should be carefully considered. AI detectors have been shown to have bias against English language learners, students with Autism, and even novice writers. For teachers working in middle school, with English learners, or with emergent writers, all of our students are novices. According to Gegg-Harrison and Shapiro, AI detectors looks for patterns such as generalizations and boosters but "empirical research on student writing has found that novice writers tend to use these patterns frequently ask well; they need to learn over time how to offer more contextualized and cations claims" (29). AI detectors are more likely to generate a false positive for these students because they may write in a more simplistic and formulaic way as they develop their skills. These students need time and practice to develop their unique voice.

The consequences of these false reports can vary greatly based on the level of the student and the choices of the academic institution. For older students in high school or college, accusations of plagiarism and academic dishonesty are very serious and can result in failing

classes, losses of scholarships, or even exclusion from programs and institutions. For younger students, such as those in middle school or early high school, the consequences may be less dire, but still demoralizing. In my middle school English department, when a student is found to have submitted an assignment that is not their own work, they are given a zero, a behavior referral, and an opportunity to complete the assignment. According to Kevin Roozen in his contribution to *Naming What We Know; Threshold Concepts of Writing Studies,* writing is "not so much about using a particular set of skills as it is about becoming a particular kind of person, about developing a sense of who we are" (51). Educators do not want to deter students from developing that identity by accusing their writing of being stilted or robotic.They don't want to imply low expectations by assuming a work is too grammatically perfect to be produced by the student. Additionally, wrongfully accusing a student of cheating damages the relationship of trust, respect, and support that teachers strive to build with their students.

Assuming that an instructor does not wish to read and grade assignments generated by computers or engage with the technological arms race of AI generation marketed towards students and AI detectors marketed towards educators and institutions, how can they dissuade students from using AI and ensure academic rigor? The first step is to set clear expectations about what technologies students can and cannot use on a given assignment. For example, Grammarly, once little more than an additional spell and grammar check, has become a lot more sophisticated and can rewrite portions of student work to add more complexity, adjust tone, or clarify the message. If the goal of the assignment is to organize thoughts into clear paragraphs, Grammarly could be a useful tool to help students form cohesive sentences. However, if the instructor is assessing students' ability to write clearly or vary sentence structure, Grammarly would not be an appropriate tool because too much of that thought process is removed from the

student. Now that students have access to a wide variety of AI tools, usually on school issued devices, instructors must be clear about the goals of each assignment, what writing skills are being assessed, and what tools are allowable for that assignment. Of course, assistive technologies such as predictive text or speech to text should always be available to students who require them to meet the goals of the assignment.

Secondly, writing instructors must focus on the writing process rather than the product. In *Naming What We Know,* contributors Collin Brooke and Allison Carr assert that "when assessment is tied too completely to final products, students are more likely to avoid risking failure for fear of damaging their grades" (63). The goal, then, should be improvement throughout the process and not a perfect final draft. Students at all levels should reach the understanding that writing is a process and that throughout that process they may have successes and failures. Brainstorming, mindmapping, outlining, research notes, rough drafts, and reflections can be used as artifacts of this process. For beginning writers, such as middle schoolers, teachers usually dedicate class time to guiding students through the steps of the writing process and therefore some steps such as brainstorming and outlining may be paper artifacts or even separate assignments. Older students and more proficient writers are often able to choose which parts of the writing process they will employ in the creation of a piece, much of which occurs individually or outside of class time. However, even the most practiced writers do not jump from a concept to a polished and publishable final draft without intervening steps. Some technologies, such as the version history of the document or extensions like Draftback and Revision History can help teachers and students identify these artifacts in a finished work. In short, rather than scouring a finished product for evidence of plagiarism and AI, engage with students throughout their writing process as they strive for improvement. By the time my

students are completing a large writing project, I've met with each of them several times. If the final product is not a continuation of the work that we've been engaged with in class, that's an indication that it was perhaps not written by the student.

Next, writing classrooms should be social places that emphasize communication. Even when done in isolation, writing is a social act. It's a way to communicate ideas and feelings to a reader. According to the NEA, "Learning happens, and knowledge is constructed through social engagement and collaboration, making interpersonal interaction between students and educators irreplaceable" (National Education Association). By emphasizing the social aspects of writing such as giving and receiving feedback and collaboration, instructors can incentivize students to engage with writing rather than rely on a machine to make their meaning clear to classmates. In this same vein, instructors should consider allowing more group work and collaborative writing. Many K-12 educators shy away from group work because it can be difficult to manage behaviors and grade student work. However, the conversations that students have when they are generating ideas, making decisions about form, and crafting sentences together are much more rich and nuanced than when they are simply giving feedback on someone else's nearly finished product. I was skeptical about allowing students to complete writing assignments collaboratively, but after giving my students the option and listening to the rich discussions that emerged, I now give students that option for many assignments.

Finally, students will be less incentivized to use AI if they have adequate time and support to engage with writing tasks. In K-12 classrooms, most of the writing process should be undertaken in class and not as homework. When choosing writing tasks that help students develop skills, teachers should consider the scope that is necessary for the assignment. For example, if the goal of the assignment is to convey a mood by describing the setting, students

who are motivated to write an entire short story may do so, but other students might only write a descriptive paragraph, similar to the box text that sets the scene before a Dungeons and Dragons adventure. Whatever tasks students choose to undertake to demonstrate mastery, they should have access to templates, examples, and outlines. Throughout the process, students should be able to meet with each other and with instructors to discuss their ideas and receive feedback. When students are working on a larger project, instructors will have collaborated with them several times and therefore would be able to recognize text that was suddenly generated by a computer and not the student. Students will be less likely to turn to generative AI when they feel confident that they will be able to complete the writing task and know that their effort, improvement, and originality is valued more than the technically perfect draft a computer can create. Also, teachers will be aware of students' thought process.

While writing is an important skill and teachers, especially K-12 teachers, are beholden to teach writing, speaking, and listening standards, there are other, nonwritten ways that teachers can assess students' knowledge. Is a research paper the best way to assess that students' were able to locate credible sources and use evidence to support an argument, or would those skills be best showcased through a presentation or a debate? Must poems be written in short, enjambed lines or can they be performed orally with body movements and facial expressions that convey more meaning than mere words? Is writing a short story the best way for students to show their understanding of characterization, or could performing a skit meet the same learning target? Even when writing is the best way to demonstrate understanding of standards, that writing does not need to occur solely on word processing software. According to Carter and Matzke in the article "The More Technology, the Better" from *Bad Ideas About Writing*, "when technology isn't mindfully incorporated into the classroom, it can become a distraction that significantly

impacts learning" (321). Teachers should provide students with a variety of opportunities to practice communication skills, written and verbal, digital and analog. Furthermore, many students crave these interactions and are tired of the majority of their assignments being pixels on a rectangular screen.

As writing teachers, our aim is to help our students develop as writers and communicators. To do that, they need to practice writing and communicating. Rather than use the very technology that we are asking students to avoid, educators should create a classroom environment that values improvement throughout the writing process, collaboration, and originality.

Works Cited

Adler-Kassner, Linda, and Elizabeth A. Wardle. *Naming What We Know: Threshold Concepts of Writing Studies*. Logan, UT: Utah State University Press, 2015.

"AI Detector - the Original AI Checker for ChatGPT & More." *GPTZero*, 2023, gptzero.me/. Accessed 30 July 2025.

Carter, Genesea M., and Aurora Matzke. "The More Digital Technology the Better." *Bad Ideas about Writing*, edited by Cheryl E. Ball and Drew M. Lowe, West Virginia University Libraries Digital Publishing Institute, 2017, pp. 320–24, textbooks.lib.wvu.edu/badideas/badideasaboutwriting-book.pdf.

Gegg-Harrison, Whitney, and Shawna Shapiro. "From Policing to Empowerment ." *Rethinking Writing Education in the Age of Generative AI*, 1st ed., Routledge, 2025, pp. 26–41.

National Education Association. "VII. Full Statement Text | NEA." *Nea.org*, 2025, www.nea.org/resource-library/artificial-intelligence-education/vii-full-statement-text. Accessed 30 July 2025.

Licensing

Blood, Sweat, Tears: A Case for Handwriting Papers in the Digital Age

Ashley Webb

As I navigated the impossibly difficult world of first-year teaching, I thought I had at least one thing figured out: that it was best practice to use technology in the classroom whenever possible. My many teaching classes in college had encouraged it—technology was the language this generation spoke after all, so how could you keep their attention and get them to learn without it? I felt a little skeptical, since I tend to prefer writing things by hand, but I figured it was better to do what I had learned instead of testing my unproven theories.

Very quickly, though, I realized this was not the case. Sure, my students liked working with technology for some things, but more often I heard the same request. “Can I do it on paper instead?” I couldn’t come up with a reason, so I printed off copies of assignments. I allowed handwritten in-class essays. I gave them physical study guides. As the year progressed, I realized that my “digital native” students preferred to work on paper, and actually did better work when they did so.

Okay, then, I thought as I gathered all this evidence during my reflection of my first year. *I can work with that.* Fast forward several years, and the option to work on paper is always present in my classroom. Using their laptops is an exception rather than the rule. My plea for teachers is this: do not feel that the only way for students to write is on their computers. Instead, use handwriting to help students embracing the glorious chaos that is writing.

The Physical and Cognitive Benefits of Handwriting

It is widely accepted that it is better for students to handwrite their notes rather than type them. Handwriting notes during a lesson or lecture leads to "better conceptual understanding of material," and handwriting also dramatically improves overall literacy thanks to a higher recognition of words and letters (Lambert). This is because handwriting is an incredibly complicated task to effectively accomplish. It requires precise motor control and coordination as well as a deep cognitive understanding of language and its relationship to the words being formed. Neuroscientist Marieke Longcamp explains in an article from NPR that "handwriting is probably among the most complex motor skills that the brain is capable of." But beyond that, handwriting creates associations between what one sees and what one hears, which is an extremely important part of learning to read and write effectively.

Handwriting also forces the brain to slow down and focus on the given task, in part because of handwriting's complexity. In an age where it is increasingly difficult to keep our students focused on a task and move beyond surface level thinking, that is a valuable thing. Social media and short-form content has literally started to rewire our students' brains. Our students are now "better at scanning for information and retrieving information, but they are less able to concentrate deeply" (Carter and Matzke 321).The removal of technology—or at least the avoidance of it—in the classroom is one way to help with this struggle. When I asked my students why they preferred handwriting to typing, this was one of the most commonly cited reasons. They explained that they really did want to write well, and they found the computer too distracting. It was too easy for them to get off task or not fully think about the answers they were writing. But, they said, they could write better responses in much less time if they wrote it on paper.

The Behavioral and Educational Benefits of Handwriting

Beyond memory and focus, though, there are other reasons why I believe we should utilize handwriting more in the English classroom. Any time I catch a student plagiarizing or using unauthorized AI on an assignment, I ask that student why. The overwhelming majority cite fear of failing as the reason. “I’m not a very good writer, and AI can write something better than I ever could, so why wouldn’t I cheat?” one student explained to me, shame-faced. Another said that he had procrastinated because he couldn’t come up with a perfect introduction and had then used AI in order to get the assignment done on time. Fear of failing and the desire to create “good writing” is a crippling condition for many students. They want to create a perfect, highly polished essay on their first attempt—a feat that is functionally impossible for all but a lucky few. And though we as teachers try to structure out their writing, break it into chunks and try to show students that writing is a process and not a product, that fear and insecurity remains. Eventually, it grows to a point where they can’t take it anymore, and they cheat.

Handwriting is messier than typing. It never looks as neat, and it’s a lot harder to go back and change something once you’ve written it down. Because of that, it is a helpful tool for getting students to move past this mindset. It encourages students to get their ideas written down on paper rather than getting them ‘right.’ Usually, the result is something better than they expected, and the initial hurdle has been crossed.

Another problem with focusing on using technology for everything in the classroom is, of course, that students never seem to stay on task while using their computers. No matter what controls districts place, students still find ways to play and get off task. For many students, their computers are closer to a second smart phone than a tool for work, and this is reflected in their inability to stay focused while using them for school work. The Center for Internet &

Technology Addiction found that in 2024, nearly 60% of teens showed signs of cell phone addiction, feeling compelled to check their phones whenever they receive a notification (Marais). Since school laptops have nearly all of the same capabilities, this only fuels students' struggle with self-regulation surrounding technology. One way to help students learn this self-regulation is to limit the time they spend on these devices, keeping it to highly specific and focused tasks whenever possible. While this is a complex issue that extends far beyond the scope of the classroom, structuring time to help students be more productive in their work is a small way to help. Encouraging them to write work by hand rather than solely online is another.

Write on Paper and Embrace the Chaos

Despite all these benefits, there is one main reason why teachers will never fully get rid of technology in their classrooms: efficiency. It is undeniably faster and more convenient to type long-form essays (particularly those with research) than to handwrite them. I also acknowledge that we have a responsibility to familiarize our students with technology, since it is so heavily integrated into nearly every modern workplace. But the efficiency argument doesn't hold up, in my opinion.

Teachers are being told to teach faster and faster to cater to our students' apparently decreasing attention spans. But why should we make allowances for something that we openly recognize as a serious challenge to this generation? Shouldn't we as teachers be searching for ways to force our students to slow down and focus deeply on the task at hand? And in that case, isn't the fact that handwriting a paper takes longer than typing an advantage?

The demand for efficiency means that most teachers give one or two days to outline and research, several days to type their drafts, maybe one class period to revise, edit, and turn in the paper. There isn't anything actually wrong with this process, but it does impart to students that

revision and editing are largely the same thing, and therefore the first "draft" should in essence be a nearly perfect and 100% complete paper. Students (and much of society in general) is terrified of failure, and their views on writing in the classroom reflect that. Anyone who writes on a professional level can tell you that this is not at all the correct balance. Allison D. Carr explains in *Bad Ideas About Writing* that closing off the ability to fail as a writer removes "permission to make a mess, to throw something away, to try thirty different ideas instead of toiling away on one" (79). I certainly agree with this sentiment. The revision process usually takes me just as long as writing the rough draft, often much longer if the piece is particularly long. Teachers know this, and want to show this to their students, but it is an incredibly difficult task.

Here is a recommendation, pulled from my Senior English classroom after several years' trial and error: have students write their rough drafts on paper. It can be messy. It can be out of order. It can have crossed out sentences or paragraphs when you had an epiphany. It can even be shorter than what the assignment calls for. The important thing is for students to get all of their ideas out on paper in semi-coherent sentences and paragraphs—to try things and fail, and therefore become more comfortable with the idea. I usually have my students gather evidence throughout the reading of a text and gathering it into a common document, thus minimizing the amount of research or rereading necessary during the drafting process. In fact, I tell them not to do additional research at this point. Instead, they can simply write in their drafts that they would like more research in this paragraph, and their peers can give them suggestions during feedback.

Once their terrible and messy first drafts are complete, they can move on to that terrifying task called revision. Students, I have found, are much more intentional and thoughtful with their feedback when it is written on paper. Rather than Google Doc comments or pre-determined

checklists, let students underline and write in the margins. Let them give suggestions for points or evidence to add that would improve their arguments. Let them circle things they love, let their feedback be messy and chaotic. Sometimes, I've even told students to cut the papers into pieces if they think that they would make better sense in a different order. The result is some level of chaos, yes. But writing is chaotic and messy, and anything that helps students move past their crippling fear of failure and into active revision is worth trying.

After a draft and revision, I have my students type their final drafts. I hear your shock. What? Didn't you say they should actually handwrite the papers? Yes, but the purpose of the handwriting is to help my students process their thoughts and make meaningful revisions to their work. It is not to veto technology entirely. While I avoid technology where possible, I also accept that it would be irresponsible of me as their teacher to not have them actually create the types of finalized papers expected of them in college. The cognitive tasks I needed them to accomplish are through, and now comes the much simpler task of typing out what they have already written, adding new evidence or ideas when needed, polishing it and creating a finalized product that they are proud of (and yes, is much easier for me to grade).

A Final Defense

Our students spend more and more of their time online, where they are urged to move faster and faster, to not think deeply and cut corners in the name of getting something done. They know this, and many of them are actually searching for ways to learn and think more deeply beyond the bounds of technology. Handwriting forces students to slow down and create writing with their own two hands, to become aware of their own thinking and understand the content.

I understand that technology does make our jobs as teachers easier, and it is not realistic nor best practice to remove it entirely. But taking deliberate steps to encourage students to write

more by hand will help improve students' writing skills, as well as help with AI use plagiarism. The next time you feel frustrated with your students' papers, instead of looking for another online tool to help, consider going the opposite direction. Help them embrace the fact that failure is essential to writing, that writing is difficult and messy but so, so rewarding. You will be amazed at the results.

Works Cited

Carr, Allison D. "Failure Is Not An Option." *Bad Ideas About Writing*, by Cheryl E. Ball and Drew M. Loewe, edited by Cheryl E. Ball and Drew M. Loewe, Digital Publishing Institute, 2017, pp. 76-81. Accessed 31 July 2025.

Carter, Genesea M., and Aurora Matzke. "The More Digital Technology, the Better." *Bad Ideas About Writing*, by Cheryl E. Ball and Drew M. Loewe, edited by Cheryl E. Ball and Drew M. Loewe, Digital Publishing Institute, 2017, pp. 320-324. Accessed 31 July 2025.

Lambert, Jonathan. "Why writing by hand beats typing for thinking and learning." *NPR*, 11 May 2024, https://www.npr.org/sections/health-shots/2024/05/11/1250529661/handwriting-cursive-typing-schools-learning-brain. Accessed 31 July 2025.

Marais, Saya D. "Technology Addiction Statistics 2024." *The Center for Internet and Technology Addiction*, The Center for Internet and Technology Addiction, 2025, https://virtual-addiction.com/technology-addiction-statistics-2024/. Accessed 2025.

Licensing

The Essay in the Age of AI: In Defense of the Writing Process

Kimberly Cavalier

Introduction

Our students often face the troubling misconception that "good" writing just happens. For generations, students have spit out an entire essay in one sitting and considered themselves finished without any real regard for feedback. Perhaps this is why so many argue that while Artificial Intelligence LLMs like ChatGPT should not be solely responsible for writing students' essays, they can, in fact, be a valuable tool for fulfilling the "less important" tasks -- generating and organizing ideas, outlining, and proofreading. This is a proposed use for AI that has been touted not just by those in tech, but even by some educators. It's not just clout-chasers on TikTok, either; huge organizations rooted in educational services proudly publish thinkpieces on how schlepping off these "simple" tasks can give students more confidence to attack the "actual" task: writing the essay (Wells).

What this perspective conveniently ignores, though, is the age-old pedagogical mantra: that writing is a *process*, not a *product*. This is an idea that professionals in the secondary English language arts field have held true for decades, so why does the field seem so ready to sacrifice it at the altar of efficiency and simplicity? For starters, we have rarely had the space, resources, or instructional minutes to actually implement this idealistic mantra into practice. Many have long held it as a philosophical cornerstone of their practice while, often through no fault of their own, implementing writing practices into their classrooms that clearly emphasize the *product* over the *process*. This seems to have created a dissonance within the field of English

education: we know in our bones that the process of writing is paramount, yet we are tempted to eliminate essential pieces of that process. Tasking AI with brainstorming and outlining on our students' behalf would free up that precious instructional time in an educational context that increasingly demands all learning take place exclusively within the classroom. It would identify us as team players that open-mindedly embrace progress and change in an educational context that socially rewards teachers deemed as innovative and punishes those seen as clinging to outdated practices. But, as is often the case, the efficient solution is not always the most effective one.

This essay will explore why, in the face of Artificial Intelligence, it is more important than ever to emphasize the writing process in the classroom. It will integrate well-known pedagogical concepts and theories to elucidate the fact that allowing AI to co-opt any part of a students' learning experience not only disenfranchises them, but actively stands at odds with core beliefs that the secondary ELA field has held true for generations.

Writing as a Process, Not a Product

Any English teacher worth their salt will unequivocally tell you that writing is much more than the final artifact. In fact, many might argue that a writer's task is never finished. In the book *Naming What We Know*, numerous professionals in the field of rhetoric and composition compile core principles of writing studies. Their fourth "threshold concept" states that "all writers have more to learn," further acknowledges that "learning to write effectively requires different kinds of practice, time, and effort," and finally asserts that "revision is central to developing writing" (Adler-Kassner and Wardle vii). These concepts are proposed by Shirley Rose, Kathleen Blake Yancey, and Doug Downs, all of whom have a strong background in writing studies and are dedicated to the field of secondary English education. Their threshold

concepts directly communicate the truth about what English teachers know: that writing is a living, breathing skill, is developed and refined through critical thinking tasks, and is, technically, never finalized. Similar to athletic performance, one can be incredibly well-trained and effective in their craft but can never achieve perfection; writing is likewise non-quantifiable and infinitely developing.

Even in our standardized system of secondary education, the powers that be seem to at least implicitly understand the importance of the *process* of writing. Indeed, the Iowa Academic Standards, published by the Iowa Department of Education, outline specific standards that acknowledge the value of drafting and revision. As young as kindergarten, the Literacy Standards require that students can "respond to questions and suggestions from peers and add details to strengthen writing as needed" ("Iowa Academic Standards for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects"). By third grade, this standard evolves to "develop and strengthen writing as needed by planning, revising, and editing ("Iowa Academic Standards for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects"). For secondary students, this standard remains in place and adheres to the exact same wording. Furthermore, the eleventh and twelfth grade standards additionally call for students to be able to "Use technology to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information" ("Iowa Academic Standards for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects"), and that they should be able to "Write routinely over extended time frames (time for research, reflection, and revision)" ("Iowa Academic Standards for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects"). While many English teachers would likely object to the implication

that planning, revision, and editing can be measured and assessed, these standards nevertheless prove that even a system deeply entrenched in efficiency and productivity recognizes the value of the writing process.

Therefore, the newly popular suggestion that secondary students' learning can be maximized by allowing AI chatbots to generate ideas, create outlines, or make revisions runs contrary to the widely accepted notion that writing must involve a process. In fact, for many students, these tasks may even be more important than the final writing artifact itself. Many of them will not go on to write cleanly formatted, traditional essays in their personal or professional lives, but many of them will, in fact, utilize the brainstorming, outlining, and revision skills that they glean from participating in the full writing process. These skills are not solely relevant to the writing process; they are transferable to real-world problem solving and can enhance our students' organizational management and critical thinking skills. The following sections will expand on how engaging in the writing process to its full extent is not only integral to developing strong writers, but further integral to developing well-rounded, independent thinkers.

Brainstorming

Every excellent piece of writing starts with a mere idea. Be it fiction or nonfiction, audiovisual or textual in nature, the heart of communication, in many ways, is the idea that it began with. While ideas often can -- and in fact, should -- change and evolve over time, that initial spark holds just as much importance as its subsequent iterations. The ability to generate ideas, evaluate their validity, and eventually expand upon them is not just evidence of creativity, but also the ability to effectively respond to one's rhetorical situation. Ideas do not simply appear from thin air. Rather, they are informed by the writer's prior experiences, consciously or not, and often created by stimulating, writing-based activities. In the aforementioned collection, *Naming*

What We Know, Heidi Estrem, an English professor at Boise State University, asserts that "writing is a knowledge-making activity" (19). She explains that "We don't simply think first and then write… We write to think" (Estrem 19). Estrem's claim directly opposes the assertion that AI chatbots can replace the brainstorming stage of the writing process. Many reputable academic institutions unabashedly declare that this is one of the most effective ways to utilize generative AI in the classroom. The University of Kansas' Center for Teaching Excellence, for instance, states in a blog post that "Most students struggle to identify appropriate topics for their writing. Generative AI can offer ideas and provide feedback on students' ideas" ("Using AI ethically in writing assignments"). It's worth noting that this blog post does not list an author -- not uncommon for these bite-sized tech thinkpieces. Why should educational professionals trust faceless, uncited, untraceable advice over credible, well-known individuals?

If we accept Estrem's idea that we must write to think, then perhaps we can contextualize The University of Kansas' statement that students often struggle to generate ideas for their writing. How, exactly, are these students being asked to generate ideas? Are they being exposed to interesting, multimodal brainstorming activities? Or are they simply being asked to spit out a topic on command like a trained animal? If students are having trouble identifying a topic, the solution should not be to remove the burden of thinking, it should be to engage more deeply in thinking. Instructors must equip students with adequate time to brainstorm and engage them in activities that call upon their past experiences to exploit their creativity. Encouraging students to cognitively offload these paramount tasks will only harm them in the long run, as evidenced by Dr. Michael Gerlich, a researcher at the SBS Swiss Business School. Therefore, while it may be tempting to save those instructional minutes by having AI generate ideas on behalf of students, it is counterproductive to what we know about creating effective writers and thinkers.

Outlining

We have established that brainstorming is a vital piece of the writing process, but perhaps once students have their ideas in mind, they could call upon the help of ChatGPT to organize their thoughts into a logical, natural structure. This is a premise that even some English teachers might support, as the validity of utilizing a formal outline as part of the writing process has been called into question by some in the field. For example, Kristin Milligan, an educator from East Central College, has advocated that formal outlines stifle students' individuality in their writing. In her contribution to the book *Bad Ideas About Writing*, Milligan references Howard Gardner's concept of "multiple intelligences," stating that those with a mathematical type of intelligence prefer outlines, while others prefer to prepare for writing an essay in different ways (164). It can therefore be concluded from Milligan's statement that rigid outline templates do not benefit every student. As most educators can attest to, differentiating material based on student interests, abilities, and preferences is vital. Milligan concedes, though, that "It's good for writers to collect their thoughts before jumping into the physical process of writing…" (163), so likely the best approach would be for an instructor to create several "outline" options for students to select; or even better, to have students create their own outline according to their needs.

This conclusion directly negates any arguments in favor of utilizing an AI chatbot to outline a students' essay for them. First, asking AI to create an outline based on an idea will likely generate the type of "formal" outline that Milligan is referring to. According to OpenAI, the artificial intelligence company that developed ChatGPT, the software is "designed to understand and respond to user questions and instructions by learning patterns from large amounts of information" ("How ChatGPT and our foundation models are developed"). It is likely, then, that if a student were to ask ChatGPT to generate an essay outline for them, it would

simply generate an organizational style that is popularly used, not necessarily one that best fits the students' topic or individual writing style. Perhaps more importantly, ChatGPT cannot differentiate according to our students' unique needs because it does not know our students. Milligan definitively asserts that rigid outlines stifle creativity and progress because they do not account for the individuality required in the writing process; therefore, how would handing the task of outlining a paper off to a chatbot alleviate this issue? It would only hinder student writing that much more. Again, it is clear that the only benefit to utilizing AI for a particular writing task is that it would save time. If we truly want students to become improved writers, though, we are better off exercising our professional abilities to give them pre-writing activities that honor their individuality and learning styles.

Revision

One of the most important factors in emphasizing the *process* of writing over the *product* is to have students engage in revision. Like brainstorming and outlining, though, having students complete multiple drafts of one essay can be a time suck, so it's no wonder why some educators have turned to artificial intelligence for solutions. Many have posited that ChatGPT could act as an editor: students plug in their essay, and ChatGPT regurgitates an "improved" version. In defense of this theory, another unauthored blog post from The Writing Center at The University of North Carolina at Chapel Hill posted: "AI tools can help you improve your text at the sentence level… AI-generated text is generally free of grammatical errors. You can insert text you have written into an AI tool and ask it to check for grammatical errors or offer sentence level improvements" (Generative AI in Academic Writing"). Again, though, this does not account for the fact that every writer's individual voice and style is different, and the secondary classroom is

where students hone those skills. Still, though, if students can engage with AI revision critically, is there really a problem?

The pedagogical findings of English educators would suggest that it is. Doug Downs, a professor at Montana State University who has been teaching composition for nearly thirty years, states that "Revision works because writing shares a characteristic of other language-based endeavors: using language not only represents one's existing ideas, it tends to generate additional language and ideas" (66). Just like Heidi Estrem's earlier claim that writing is a knowledge-making activity, Downs demonstrates that revision is more significant to the writing process than simply fixing grammatical errors and line editing; it is a vehicle for actually improving an essay's ideas. Downs offers the metaphor of a car driving with headlights on: at any given moment, the driver can only see what is several feet ahead of them, but by the end of the drive, they have a complete picture of their trip (66). In a similar way, writers often spark fresh ideas or make new connections as they write, and revising the essay as a whole to include these can help them achieve their purpose with increased accuracy. ChatGPT could offer suggestions for new ideas, but that causes a serious disruption in the writing process: rather than these ideas occurring organically as the result of "writing to think" (as Estrem puts it), ideas are simply fed to a passive student. Again, this kind of cognitive offloading could endanger students' critical thinking abilities, like Dr. Michael Gerlich theorized.

Conclusion

There can be little doubt that every part of the writing process is vital. Brainstorming, outlining, and revising are central to developing not just effective writers, but critical thinkers. As evidenced by the many professionals mentioned in this essay, writing is more than words on a

page. Rather, it is a series of connected cognitive processes, a knowledge-making activity, a task that is never finished. Texas educator Chanea Bond puts it exceptionally well:

> "It's crucial that my students develop authentic voices. Many come from historically marginalized backgrounds and have been led to believe that their perspectives are less valuable. I want them to know that their contributions are significant, and their thoughts are worthy of being heard. Students deserve the opportunity to acquire essential skills. That's what education is! That's our job! While some teachers say that AI can serve as a brainstorming partner or an outline generator, I believe it's so important for students to learn these skills themselves."

Allowing machines to do our students' thinking for them, no matter how seemingly minor the task, is not advantageous to them. It is robbing them of their ability to think critically, develop true writing skills, and use their voice. This is simply not worth the handful of instructional minutes it would save.

The dawn of AI is exciting. There is no doubt that this new technology will change some facets of life. Still, educators should not lose sight of the pedagogical truths that have been central to our practices for generations. Rather than allow themselves to be swept away in the glamor of the "next greatest thing," it is paramount for teachers to pause and consider what is truly best for our students. So many of them are already struggling with critical, nuanced thought and with shortened attention spans. Perhaps, in this new age, it is more important than ever to emphasize an intentional writing process. So many claim that the most successful members of

the new generation will be those who can effectively use AI, but it seems instead that it will be those who are able to think without it.

Works Cited

Adler-Kassner, Linda and Wardle, Elizabeth. *Naming What We Know*. University Press of Colorado, 2015.

Bond, Chanea. "What Happened the Year I Banned AI." *Edutopia*, 29 July 2025, https://www.edutopia.org/article/banning-ai-tools-class/.

Estrem, Heidi. "Writing Is a Knowledge-Making Activity." *Naming What We Know*, edited by Linda Adler-Kassner and Elizabeth Wardle, University Press of Colorado, 2015, pp. 19-20.

"Generative AI in Academic Writing." *The Writing Center University of North Carolina at Chapel Hill*, https://writingcenter.unc.edu/tips-and-tools/generative-ai-in-academic-writing/.

Gerlich, Michael. "AI Tools in Society: Impacts on Cognitive Offloading and the Future of Critical Thinking." *Societies*, vol. 15, no. 1, 3 Jan. 2025, https://doi.org/10.3390/soc15010006.

"How ChatGPT and our foundation models are developed." *OpenAI*, https://help.openai.com/en/articles/7842364-how-chatgpt-and-our-foundation-models-are-developed.

"Iowa Academic Standards for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects." *Iowa Department of Education*, June 2024, https://educate.iowa.gov/pk-12/standards/academics. Accessed 31 July 2025.

Milligan, Kristin. “Formal Outlines Are Always Useful.” *Bad Ideas About Writing*, edited by Cheryl E. Ball and Drew M. Loewe, West Virginia University Libraries, 2017, pp. 163-167.

Wells, John. “Empowering Student Writers: How Teachers Can Use AI to Transform Writing Instruction.” *Keep Indiana Learning*, 25 June 2025, https://keepindianalearning.org/empowering-student-writers-teachers-ai-transform-writing-instruction/. Accessed 26 July 2025.

Licensing

It's Inconvenient, and It's Worth It: The Hard Work of Reducing Technology to Retain Humanity

Erin Neebel

I recently listened to a podcast with John Delony, *An Honest Take on Parenting Today With Dr. Becky Kennedy,* and Dr. Kennedy made a comment that having kids is "inconvenient" which goes against the convenience our culture seems so fixed on finding. She went on to discuss how despite the inconvenience, having and raising kids is incredibly worthwhile. As a mother, I related to this a great deal. There's so many things that having changed in my life since having children, and now with two under three, my time is rarely my own. And yet, I know it's worth it. It's worth it to stay home and see their milestones, the millions of tiny moments of trial, joy, sorry, and simplicity that add up into their childhood, into the memories I'll want back one day, even if today it is hard, it is inconvenient, to wait for my toddler to choose her clothes and THEN to put them on, to watch the tupperware spilled across the kitchen again as the baby explores, to finish a grocery run with two screaming children because the toddler couldn't push the cart and the baby wants to be held again.

But isn't this paper about technology and AI in the classroom? How does it fit with raising kids? In short, sometimes we have to do the hard work before we can understand the benefits. Don't let this completely deter you from AI either - there are merits, as other essays will discuss, into how AI can be useful in the classroom, how it can be a powerful tool to bridge gaps and support students and teachers alike. AI has been touted as a convenience, something to help reduce the time it takes to complete tasks, and for students (and even teachers), this is

enticing. Who doesn't want more time? We're starting to see how AI is showing up in other areas of our day-to-day lives, not just in how our students use it. However, I write caution to leaning too far into technology, especially in the early years of understanding AI usage and the effect it has on our brains and our mental health. There's something incredibly powerful about our humanity, our ability to critically think and reason and take in a myriad of things that allow us to make a decision that no complex computing or AI could ever replicate (Mairn 21). We need to encourage our students to train their own minds, to challenge themselves in tasks without technology before we can encourage them to utilize it safely.

One of the early articles that has examined the effects of ChatGPT, *Your Brain on ChatGPT,* investigated how the use of AI influenced students writing an essay. Using three groups, one using a LLM, one using Search Engines, and one using Brain-Only, participants were asked to write an essay with their assigned support (Kosmyna 2). Researchers used electroencephalography (EEG) to record participants' brain activity (Kosmyna 2). Among their findings, the researchers noted "AI tools, while valuable for supporting performance, may unintentionally hinder deep cognitive processing, retention, and authentic engagement with written material. If users rely heavily on AI tools, they may achieve superficial fluency but fail to internalize the knowledge or feel a sense of ownership over it." (Kosmyna 138). The need to internalize knowledge, though seemingly less pressing given the overabundance of information literally at our fingertips, is still something that is essential in building cognitive processing skills. We might not need to internalize everything, but knowing information and being able to recall and utilize it, especially given personal connection and ownership over that understanding, is a skill that supports critical thinking. This study was conducted over a four month time period, so the results are only a snapshot of the effects we're beginning to see with AI usage. In the end,

"these findings support the view that external support tools restructure not only task performance but also the underlying cognitive architecture…As reliance on AI tools increases, careful attention must be paid to how such systems affect neurocognitive development, especially the potential trade-offs between external support and internal synthesis" (Kosmyna 136).

The caution shared from this research is not the only example of caution among academia regarding the use of AI. An article from the British Journal of Educational Technology cautions against the potential of "metacognitive laziness" (Fan 489). While GenAI can certainly help with some of the cognitive load, something teachers are well accustomed too, the continued use of GenAI has potential to "lead to habitual avoidance of deliberate cognitive effort, a phenomenon echoing the emergence of what we term metacognitive laziness " (Fan 492). If we feel like our students are already cognitively lazy, the overuse of AI could further exacerbate the issue. These researchers noted the need to continue developing "self-regulated learning" which requires "self-generated thoughts, feelings, and behaviours directed toward achieving personal goals," as well as its complement, metacognition (Fan 491). As secondary teachers, we are at the forefront of encouraging and teaching students to use these self generated thoughts, feelings, and behaviors. As they continued their study, these researchers clearly state that the existing research shows "the results are mixed and inconclusive" (Fan 494).

Our understanding of the effects AI has on our motivation, our writing, our very thought processes, is still in its infancy at this time and more longitudinal research is needed to better understand the effects. Mazhar Bal and Emre Öztürk, also writing for the British Educational Research Journal, after reviewing writing with technology (especially AI) in the K-12 world concluded: "It is important to examine the relationship between technology use and cognitive development through neuropsychological research, to investigate the long-term effects of

AI-supported writing systems and to analyse technology-supported writing processes in different sociocultural contexts" (1309). Approaching AI and technology in our classrooms requires we take intentional consideration about how we're asking our students to use technology and how that is or is not encouraging their ability to think critically and maintain high levels of cognitive development. At the heart of our teaching, we have to truly see each student as a unique individual, not one that fits into the cogs of the education machine we're so often forced to push them towards, especially when it comes to incorporating technology.

Michael Gerlich, a professor at the Swiss Business School, conducted some of his own research to examine how AI impacts critical thinking skills and to look more closely at the role cognitive offloading plays in AI usage and critical thinking (2). In a study of over 650 participants from the United Kingdom, a survey of 23 questions was conducted (Gerlich 8). While participants were self evaluative in their use of a Likert scale, the results are particularly interesting for the young generation (Gerlich 8). Gerlich found " Younger participants (17–25) exhibited higher AI tool usage and cognitive offloading, but lower critical thinking scores. In contrast, older participants (46 and above) showed lower AI tool usage and cognitive offloading, with higher critical thinking scores (10). Additionally, using the demographic variables collected, Gerlich also noted that "education level, age, and occupation were found to have significant effects, highlighting their critical roles in shaping cognitive engagement" (13). Seeing how quickly differences of age, education, and eventually, occupation influence critical thinking in the age of AI further demonstrates just how important our job as secondary teachers is as we continue to confront the usage in our classroom and our society.

Up to this point, a lot of the research I have shared has been rather bleak, showcasing the difficulties AI poses to teachers. We know that there are many benefits that AI has, and delving

further into benefits for cognitive offloading (and teaching students when and how to do so) are elements that must also be considered. The "collaboration between learners and AI in future learning and hybrid intelligence is inevitable, so offloading and onloading cognitive and metacognitive load should be a dynamic and developmental process…and learners do need scaffolding to learn how to ethically and effectively divide labour with AI and actively develop their metacognitive skills (Fan 506). Thankfully, other authors in this collection have begun to cover some of those strategies for incorporating AI, and I encourage readers to further explore their writing for additional ideas and resources on how to incorporate AI. My suggestions, in contrast, will focus on keeping AI out of the classroom in favor of the elements we need most - our students and their unique humanity as they come of age with technology.

Adrienne LaFrance, the executive editor of *The Atlantic*, poignantly suggests that "we are on this planet to seek knowledge, truth, and beauty - and that we only get so much time to do it" (20). She reminds us that "tapping a 'like' button is not friendship; it's a data point" and we owe our relationships more than existence and sustainability in a digital world (LaFrance 19). Instead, in our classrooms, we need to focus on providing spaces for our students to authentically connect with each other, through conversation, discussions, writing (yes, more handwritten options), and shared reading experiences. We need to teach them how to tap into their own humanity, the power that their personal observations and thoughts and feelings have when given the time to explore without the aid of technology. They deserve the opportunity to figure out who they are outside of a screen and to grow into that potential.

Michael Peters and his colleagues in their research of *AI and the Future of Humanity,* opted to ask ChatGPT about its intelligence, and shared that the response received indicated "ChatGPT-4's intelligence is limited to language processing and does not encompass other forms

of intelligence such as emotional intelligence, spatial intelligence, or social intelligence." (833). These types of intelligence, the emotional, spatial, and social realms, are where we can focus and encourage our students to grow in understanding. Much of this work needs to be done outside of the use of technology too, especially since the value of human interaction, particularly face-to-face interactions, can't be replaced by screens or algorithms.

The work in our classrooms goes much further than ensuring our students can read, write, and think. Often, especially in the secondary classroom, we are helping our students better understand themselves, their unique personhood and identity. Adrianna Prothero, writing with Education Week, looked further into some of their survey data regarding students and their SEL support at schools post pandemic. I found it interesting that "many students indicated they could use more guidance in answering some of the big questions around identity. When asked if adults at their school were helping them figure out their identity—who they are, what they want to be, where they belong, and what they believe—a little less than a quarter of students said they completely agreed with the statement (Prothero). Students are seeking connection and understanding, and turning to technology to answer some of those big life questions isn't helping. Prothero also found "forty-four percent of middle and high school students reported…that their level of social anxiety and loneliness has gone up" since the pandemic. Even this information is dated, published in 2021. GenAI can help us to find information, but we must be the critical processors of that information and what it means outside of the "complex computing" that artificial intelligence really is (Mairn 21). We must encourage our students to work together. We must build safe spaces for them to do the messy and slow work of learning about themselves, of learning how to learn and think and communicate.

Works Cited

"*An Honest Take on Parenting Today With Dr. Becky Kennedy.*" *The Dr. John Delony Show*, 16 June 2025, https://podcasts.apple.com/us/podcast/an-honest-take-on-parenting-today-with-dr-becky-kennedy

Bal, Mazhar, and Emre Öztürk. "The Potential of Deep Learning in Improving K-12 Students' Writing Skills: A Systematic Review." *British Educational Research Journal*, 2025, pp. 1295–1312. https://doi.org/10.1002/berj.4120.

Fan, Yizhou, et al. "Beware of Metacognitive Laziness: Effects of Generative Artificial Intelligence on Learning Motivation, Processes, and Performance." *British Journal of Educational Technology,* 2025, pp. 489–530. https://doi.org/10.1111/bjet.13544.

Gerlich, Michael. "AI Tools in Society: Impacts on Cognitive Offloading and the Future of Critical Thinking," *Societies,* vol. 15, no 6, 2025, pp 1-28. https://doi.org/10.3390/soc15010006

Kosmyna, Nataliya, et al. "Your Brain on ChatGPT: Accumulation of Cognitive Debt When Using an AI Assistant for Essay Writing Task." *Arxiv* (preprint), https://doi.org/10.48550/arXiv.2506.08872.

Lafrance, Adrienne. "In Defense of Humanity." *Atlantic Monthl*y, vol. 332, no. 1, July 2023, pp. 18-20. EBSCOhost, research.ebsco.com/linkprocessor/plink?id=4474a65d-7d08-3580-b23f-48ad0def7804.

Marin, Chad. "AI and Emerging Technologies in Education: A Conversation With Sid Dobrin." *Computers in Libraries,* Nov. 2024, pp.19-21.

Peters, Michael A., et al. "AI and the Future of Humanity: ChatGPT-4, Philosophy and

Education – Critical Responses." *Educational Philosophy & Theory*, vol. 56, no. 9, Aug. 2024, pp. 828–62. EBSCOhost, https://doi-org.proxy.lib.uni.edu/10.1080/00131857.2023.2213437.

Prothero, Adrianna. "Middle and High School Students Need Social-Emotional Learning, Too. Are They Getting It?" *Education Week,* 12 October 2021. www.edweek.org/leadership/middle-and-high-school-students-need-social-emotional-learning-too-are-they-getting-it/2021/10.

Licensing

Navigating the Impact of Digital Reading Environments and GenAI on Reading Processes and Comprehension

Amber Schouten

The morning of April 17, 2020, I logged into Zoom—a digital service that was unknown to me just a month prior—for a routine staff meeting. We had been meeting together as staff this way since Governor Kim Reynolds first closed Iowa schools on March 15 due to the COVID-19 virus. During our staff meeting on April 17, the governor announced that schools in Iowa would remain closed for the duration of the school year. Following the announcement, video screens went dark one-by-one as the tears came as each teacher mourned what we had lost and what we would undoubtedly lose in the future. From that moment, it was evident that education would never be the same.

The return to in-person education in the fall of 2020 brought with it many unknowns and a misguided turn to technology to save us all. Physical print books were viewed as dangerous vehicles that spread disease rather than knowledge. As a result, school and classroom library books were required to go through a quarantine process to contain the virus, and in the process quarantined students from reading too. Michael Morpurgo, a middle grade author, contends that "access to books and the encouragement of the habit of reading: these two things are the first and necessary steps in education…It is our children's right and it is also our best hope and their best hope for the future" (Miller and Sharp 7). And essentially just the opposite of this happened for our students with the removal of book access and the shift to digital reading environments in the classroom.

Digital Reading Environments Impact Reading Comprehension and Processes

Budget numbers and the argument that students will need to use technology in their future professions are common talking points in favor of shifting to fully digital reading environments. But at what cost? The cost is that digital reading environments have a negative impact on reading processes and comprehension. A study conducted by Norwegian psychologist Anne Mangen and her colleagues showed that when it came to reading comprehension performance, high school students "who read the texts on paper performed significantly better than subjects who read the texts on the computer screen" (65). Specifically, students were better able to sequence details and put plot elements in chronological order. I have seen examples of this in my own classroom. Often, students who choose to complete their assignments on paper include more details and reflect a deeper understanding of the reading than their classmates who choose to complete their assignments digitally.

Further studies by Pablo Delgado, an assistant professor and educational researcher at the University of Seville, supported Mangen's findings and additionally revealed that when there is a time limit imposed on reading, such as in standardized testing, "factors indicated that the advantage of paper-based reading is significantly larger" (34). When the need to scroll is then factored in, reading digitally further puts the student at a disadvantage. Delgado cites a study by Mary Pommerich, Director at the Defense Testing and Assessment Center and a psychometrician, that "found that participants who read non-scrolling digital texts outperformed those who read scrolling texts," but participants still performed significantly worse than those that read on paper (35). Scrolling adds an unnecessary cognitive load to reading by making spatial orientation more difficult for readers. Gone are the days of remembering that Pony Boy's pivotal conversation with Johnnycake began about halfway down the page near the end of the

chapter. Instead, students find themselves scrolling endlessly in the hope that they will stumble across the conversation in their digital reading environment.

The digital reading environments our students are required to navigate are designed to be "fast, multi-task oriented and well-suited for large volumes of information" (Wolf, "Skim Reading"). According to a series of studies conducted by Ziming Liu from San Jose State University, "the 'new norm' in reading is skimming, with word-spotting and browsing through the text" (Wolf, "Skim Reading"). This means that readers use an F or Z pattern where they sample the first line, and then proceed to word-spot for the remainder of the text. Inevitably, this reading style transfers to print reading as the reader develops new reading habits. As a result, the time allocated to deep reading processes is greatly reduced regardless of medium. This is detrimental to students in all educational realms, not just English language arts.

Maryanne Wolf, Director for the Center of Dyslexia, Diverse Learners, and Social Justice in the Graduate School of Education and Information Studies at UCLA, asserts that through deep reading students develop important intellectual and affective processes such as internalized knowledge, analogical reasoning, inferencing, perspective-taking, empathy, critical analysis, and the generation of insight ("Skim Reading"). Digital reading is putting these critical processes in danger. As UCLA psychologist Patricia Greenfield observes, "the result is less attention and time will be allocated to slower, time-demanding deep reading processes, like inference, critical analysis and empathy, all of which are indispensable to learning at any age" (Wolf, "Skim Reading"). These negative effects of digital reading can appear as early as fourth or fifth grade according to Tami Katzir, a cognitive scientist from Haifa University (Wolf, "Skim Reading"). Digital reading environments work against the very reading processes teachers endeavor to develop in their students.

In addition to developing shallower reading processes in digital environments, "readers using digital devices may find it difficult to engage in challenging tasks, such as reading comprehension requiring sustained attention" (Delgado et al. 34). While working on an electronic device such as an iPad, students are at the mercy of one distraction after another. Students observe, "when they read on a screen, they are 90 percent likely to be multitasking and only 1 percent likely to multitask when reading on print media" (Wolf, *Reader Come Home* 114). By multitasking students "enter an addiction loop as the brain's novelty centers become rewarded for processing shiny new stimuli" (Wolf, *Reader Come Home* 109). In my classroom when digital reading is the intended task, it is not uncommon to encounter a student that, in addition to his reading assignment, also has tabs open for his March Madness brackets, the weather, YouTube, and Cookie Clicker. Deep reading processes are clearly not happening for this student and he is not alone. This lack of deep reading processes is not unique to the secondary classroom. Mark Edmundson, an English literature scholar and professor, is observing the effects of distractions and shortened attention spans at the collegiate level too. He has noticed "many college students actively avoid the classic literature of the 19th and 20th centuries because they no longer have the patience to read longer, more difficult texts" (Wolf "Skim Reading"). This may be due in part to the introduction of generative artificial intelligence (GenAI) and its summary skills.

GenAI Alters Reading Processes

The introduction of GenAI has exacerbated students actively avoiding reading long texts. "Because A.I. can generate abridgments, summaries, and other condensed editions on demand," struggling, reluctant readers are turning to GenAI to remove reading full length works from the learning process (Rothman). According to Yellowlees Douglas, Ph.D., a consultant on writing

and organizations, “the damage will be profound…worsening reading and writing skills and aggravating already-poor performances across science, math, history, and, of course, both reading and writing.” While students may believe they are improving their educational experience, they are instead missing out on benefits such as vocabulary acquisition, reading fluency, and writing style development that are lost by bypassing deeper reading processes.

“An L.L.M. will ‘read’ and ‘understand’ an unimaginably large quantity of text. Later, it will be able to recall the substance of that text instantaneously (if not always perfectly), and to draw connections, make comparisons, and extract insights” (Rothman). By outsourcing the reading and processing to GenAI, the student misses out on developing these critical processes. This is not preparing our students for the future.

How Should Educators Respond to Digital Reading Environments and GenAI Reading?

It’s not a secret that AI and digital reading environments are not good for our students’ reading comprehension and processes. So in light of what we know, what can we as educators do to help our students develop strong reading comprehension and processes in this digitally inundated age? First and foremost, we should advocate for physical print books whenever possible in our classrooms. In a longitudinal study of 27 countries over the course of 20 years, a direct correlation was found between physical book access and the level of education a child will attain. “Children with access to a 500-book library over the course of their childhoods benefited just as much as those growing up in homes with college-educated parents—gaining an additional 3.2 years of education on average” (Miller and Sharp 7-8). Surrounding our students with physical print books through the school library, our classroom libraries, and classroom materials not only alleviates the detrimental effects of digital and GenAI influenced reading, but it sets our students up for future success. As educators, isn’t that what we ultimately want for all students?

Let's be honest, though. Even though we teachers are experts in our field, often budget numbers and the allure of students needing to use technology in future professions wins out over teacher knowledge acquired through years of experience and sound research-based pedagogical practices. If we are left with only digital resources, what are we to do? The answer is to teach students digital reading strategies. Students are taught reading strategies starting in elementary school and digital reading environments should be approached in the same way. Strategies such as teaching students to annotate actively, chunking reading, and helping students regain spatial awareness will empower students with the necessary tools to be successful when reading physical print materials is not an option. "Helping Students to Best Learn How to Read on Digital Devices" by Jennifer Wood (https://www.edutopia.org/article/teaching-students-read-digital-devices/) and "Smart Strategies for Reading Digital Texts" by The Core Collaborative Learning Lab (https://thecorecollaborative.com/smart-strategies-for-reading-digital-texts/) provide excellent tips and resources to help teachers get started with teaching how to read in digital reading environments.

While we may not be able to stop a student from choosing to use GenAI, we can combat its use through our pedagogical decisions such as requirements for how students respond to their reading. Teachers need to ask students to complete higher order thinking tasks in response to their reading that GenAI simply can't do. An example of this would be requiring students to use at least two direct quotes to support each claim. An instance of GenAI generated quotes could be "easily spotted because the AI typically attributes an off-topic quote from the wrong character to provide a second or third quote" (Yellowlees). Another example of a task that AI could not complete would be asking students to take an unusual perspective in their writing response

assignment such as what might happen if Mrs. Luella Washington Bates Jones from Langston Hughes's short story "Thank You, Ma'am" came upon the school children from Ray Bradbury's short story "All Summer in a Day" shoving Margot in the closet. How would Mrs. Luella Washington Bates Jones react in this situation and how would the children respond? Write this event from Mrs. Luella Washington Bates Jones's point of view, utilizing her speech style and quotes from both short stories. GenAI would be incapable of effectively developing this idea. My personal favorite approach is to use class discussions as the basis for writing assignments. I have students select a point or topic raised in class to prove or disprove. Students must specifically reference the discussion and let's face it, GenAI just can't.

While digital reading platforms and GenAI might be here to stay, that doesn't mean that we as educators need to fully embrace and endorse them. After all, they are hindering student reading comprehension and processes. We know that physical print books are what is best for student learning. "Ignoring the evidence of a robust screen inferiority effect may mislead…educational decisions, and even worse, it could prevent readers from fully benefiting from their reading comprehension abilities and keep children from developing these skills in the first place" (Delgado et al. 36). Teachers, let's continue to advocate for our students and endeavor to make choices that benefit all students.

Teacher Resources

"Helping Students to Best Learn How to Read on Digital Devices" by Jennifer Wood. https://www.edutopia.org/article/teaching-students-read-digital-devices/

"Smart Strategies for Reading Digital Texts" by The Core Collaborative Learning Lab. https://thecorecollaborative.com/smart-strategies-for-reading-digital-texts/

"How AI Could Damage Your Child's Reading and Writing Skills" by Yellowlees Douglas. https://www.psychologytoday.com/us/blog/how-writing-works/202408/how-ai-could-damage-your-childs-reading-and-writing-skills

Game Changer!: Book Access for All Kids by Donalyn Miller and Colby Sharp.

Reader, Come Home: The Reading Brain in a Digital World by Maryanne Wolf.

Works Cited

Delgado, Pablo, et al. "Don't Throw Away Your Printed Books: A Meta-Analysis on the Effects of Reading Media on Reading Comprehension." *Educational Research Review*, vol. 25, no. 25, Nov. 2018, pp. 23-38, https://doi.org/10.1016/j.edurev.2018.09.003.

Douglas, Yellowlees. "How AI Could Damage Your Child's Reading and Writing Skills." *Psychology Today*, 2024, https://www.psychologytoday.com/us/blog/how-writing-works/202408/how-ai-could-damage-your-childs-reading-and-writing-skills.

Mangen, Anne, et al. "Reading Linear Texts on Paper versus Computer Screen: Effects on Reading Comprehension." *International Journal of Educational Research*, vol. 58, no. 58, Jan. 2013, pp. 61-68, https://doi.org/10.1016/j.ijer.2012.12.002.

Miller, Donalyn, and Colby Sharp. *Game Changer! : Book Access for All Kids*. New York, NY, Scholastic Inc, 2018.

Rothman, Joshua. “What’s Happening to Reading?” *The New Yorker*, 17 June 2025, http://www.newyorker.com/culture/open-questions/whats-happening-to-reading.

Wolf, Maryanne. *Reader, Come Home: The Reading Brain in a Digital World*. New York, Harper, 2018.

Wolf, Maryanne. “Skim Reading Is the New Normal. The Effect on Society Is Profound.” *The Guardian*, 20 Dec. 2018, https://www.theguardian.com/commentisfree/2018/aug/25/skim-reading-new-normal-maryanne-wolf.

Licensing

Back Matter: Accessibility Statement

University of Northern Iowa's Rod Library is committed to making its publications as accessible as possible. Images in this resource have alternative text and heading styles are used throughout for compatibility with screen readers.

This ebook is displayed in the software Manifold; detailed documentation is available regarding Manifold's accessibility commitment and features, which strive to meet accessibility standards WCAG 2.1 AA.

Multiple formats are provided, including online ebook, pdf, and .docx. The open licensing of this work allows for translation and changing formats as needed for any user, without additional permissions needed, as long as the individual works' licenses are followed.

If you have any requests for alternative formats or suggestions for improving accessibility of this Open Educational Resource (OER), please contact anne.gruber@uni.edu.