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Shouting into the "thinking" void: education in the context of generative AI and ChatGPT

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When *TIME* magazine's Olivia B. Waxman asks, 'How will future historians describe this period we're living in?' Dr Jill Lepore, deeply notable Harvard history professor and public figure, responds, 'Future historians will be AI, so they'll write some very boring history' (*TIME*, Sept 4, 2023, p. 64).

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Helpful robots

Discussions of generative AI (popularly focused on ChatGPT), particularly in distance and online education contexts, run the gamut from essentially hysterical to focused and pragmatic. The former responses are organic and should be, evoking the long tradition of science fiction's depiction of scientific hubris (and religious cautions about human hubris). The latter responses are precisely the stuff of the pragmatic fields of science and of basic use. Watching the speed with which ChatGPT regurgitates content in response to queries and tasks isn't itself startling – Google has been quickly pointing out answers for our inquiries for many years and Alexa and Siri and others have vocally, too – it's how the language modeling tool can so quickly provide essays on *To Kill a Mockingbird* or coding solution trees or caring sentiments for a bereavement card or tests for structural rigidity. Generative AI today shocks with what it can do; however, it is also shockingly limited.

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While a different article in the venerable *The Atlantic* ignited the frenzy in American higher education in late 2022, consider the thoughtful confession writer Ryan Bradley makes in February 2023: "A chatbot is secretly doing my job." Frustrated with a part of his job that required him to read across news reports and summarize the most salient moments, he found generative AI could do that and free him up to do something more satisfying – writing. He shares, "I realized that what I was doing wasn't writing at all, really – it was just generating copy." *Copy*, then, the robotic, analytic, summative content. He writes,

> ChatGPT and the [OpenAI] Playground are quite good at putting copy together. The results certainly aren't great, but they're absolutely good enough, which is exactly as good as most copy needs to be: intelligible but not smart—simply serviceable.

The limit, and the ethical space Bradley carves out for himself, is that ChatGPT and generative AI are not good at mimicking the more nuanced and idiosyncratic character of human writing. We might suggest further that generative AI is not threatening *art*. One of the most brilliant implications of Alex Garland's film *Ex Machina*: The AI mimicked but never understood emotions, because how can anything ever understand love or longing or loss without having experienced it? The idiosyncrasy Bradley evokes in his article is precisely seen in the use of Jackson Pollock's painting No 5 in the film – the liminal alchemy of precision and animality, so to speak, is nothing the AI could create.

As many are finding, across professions, generative AI might also offer us interesting new work. While Bradley found creating copy tedious, he explains working with AI to do that task for him wasn't:

> Perhaps you're thinking, *This sounds like work too,* and it is—but it's quite a lot of fun to refine my process and see what the machine spits out at the other end.

Most of the writing in the last two years about generative AI includes some element of this tinkering. Even as stakeholders in education voice concern and implement restrictive policies in generative AI use, teachers and teacher educators similarly exchange curious and tinkering ideas. We're learning.

This essay chronicles some of the crucial, contemporary issues of generative AI for education. As suggested above, it will weave between classroom experiences, popular culture, educational theory and conversations with engineers, tech security and a state senator. It relies on a certain bias to defend the arts and humanities and to see vital, timely and needed engagement with conventional literacy.

Benefits: further dissuading educators from Gardner's "learning styles"

Ryan Bradley's argument should appeal to those in HR, workforce studies and similar fields, just as it should to Bradley's supervisors and the stockholders. In this perspective of reading his article, *efficiency* is obvious. Bradley describes a task he greatly disliked and how he was ultimately (and perhaps causally) inefficient at it. He organically tinkered with the opportunity in generative AI, but then actively and autonomously used the emergent technology to improve his overall efficiency. Note that the copy task described above "doesn't take more than 30 minutes." His initial attempts with ChatGPT and the Playground produced workable copy in 40 minutes, "but now," he writes, "I've got it down to about five."

This sort of innovative and autonomous thinking around generative AI shows up across industries, particularly around menial but time-draining tasks (like copy) but also around complex tasks (like solving a particularly thorny coding problem). One theme in the writing about generative AI is seeing it as a tool designed to improve human efficiency. Analogs are made between word-processing spellcheck and programs like Grammarly to graphing calculators. In the context of workforce efficiency, lamentations about intergenerational workforce literacy issues like cursive and counting change don't matter. Neither do poetics or art.

A cybersecurity specialist and I were discussing generative AI at a local bar. Like some of the engineers and STEM-oriented people I've met, he saw immense benefit in generative AI and accelerating tech-based problem-solving. He described the AI "scraping data" in a way we humans can't as efficiently. Indeed, generative AI clearly contributes to procedural literacy (described below) and disciplinary literacy. Generative AI systems not only benefit innovative tech solutions of this sort, but also the paradigms of STEM education are being adapted to integrate corresponding tool training. In other words, these STEM and tech fields are using generative AI to be more productive and efficient and teaching apprentices what they're learning about AI. By contrast, Bradley had to think through this process and professionally keep it secret. He describes how other industries, like journalism, are balking and restricting generative AI use.

Another benefit of generative AI is a bedrock learning goal across educational level – critical thinking. Each USA state has critical thinking standards in K-12 and university system core curricula. Educators and teacher educators, even more strikingly English and composition instructors, write about ways to highlight ChatGPT as a tool to develop and practice critical thinking. For instance, September 2023's *TIME* magazine features Sarah Millard, an English Language Arts teacher in Michigan. She "had students critique a ChatGPT-generated essay on Shakespeare's *Romeo and Juliet*." She reports that her "students had never been so engaged in writing" and "they wanted to beat the computer" (17).

Contemporary examples abound. Conservative writer and public figure Ben Shapiro models the ways to challenge and deconstruct language model-based generative AI like ChatGPT. Nationally recognized University of Oklahoma law professor Tracy Pearl engages crucial questions with AI and coding issues regarding autonomous and other driving and safety features in modern cars, including those intersecting with the Fourth Amendment. The complex jurisprudence about traffic stops and legal searches is only exacerbated by the legal standing of the "driver." As I'm writing, consider the vast collection of sci-fi literature and films, including Mary Shelley's 1818 novel *Frankenstein* and the bizarre *The Creator*, and the questions generative AI and AI more broadly pose that invite critical thinking projects or, the transhumanists and others, arguing that we might engage in *Transcendence*.

In conventional literacy contexts, promising benefits emerge as well. Writing and reading are recursive skills and practices, and yet, it can be difficult to scaffold students when using published, professional writing. Something I have suggested in my teacher education courses, for the emergent and struggling writers in particular, is that generative AI offers a dynamic scaffold. As others have more recently echoed, teachers might have students feed ChatGPT their initial ideas and responses to a reading in order to see how those ideas and responses can be developed into an academic essay, for instance. Teachers and peers can identify both the strong moves and the areas in which the ChatGPT essay fails. I have read elsewhere similar and intersecting ideas about how to use ChatGPT and generative AI to help students develop reading and writing skills.

Finally, consider this scenario: A senior state senator convenes a group of educators and stakeholders to educate her and advise on policy regarding generative AI. The meeting features local high school science teachers, STEM university professors, humanities university professors and representatives from the state department of education. After an hour, what had emerged was a nascent conclusion that ChatGPT and generative AI were tools helpful in the development of procedural or computational literacy. That insofar as K-16 teaches students ways of thinking and how to think, like how to use a formula to solve a certain kind of problem, for instance, or to cite the bestseller *How to Read Literature Like a Professor*, generative AI is a powerful tool (as described above).

In some ways, what started the consternation about ChatGPT and generative AI in universities was Stephen Marche's article in *The Atlantic* in December 2022—"The College Essay is Dead," he proclaimed. Despite the salacious title, the article is thoughtful, fundamentally about rethinking learning goals and assessment paradigms and also about valuing interdisciplinarity. I offer here a short excerpt and example from that article,

highlighting how meetings like the one above can dismantle the divisions between the disciplinary fields, especially between the humanities and sciences:

> And yet, despite the drastic divide of the moment, natural-language processing is going to force engineers and humanists together. They are going to need each other despite everything. Computer scientists will require basic, systematic education in general humanism: The philosophy of language, sociology, history, and ethics are not amusing questions of theoretical speculation anymore. They will be essential in determining the ethical and creative use of chatbots, to take only an obvious example.

Marche offers readers something that should infuse renewed meaning into the core curricula of K-12 schools and universities. For a more robust treatment of this potential, I suggest Pulitzer Prize winner and renowned biologist Edward O. Wilson's *The Origins of Creativity.*

Threats: Lady Macbeth in our ears

Return to the meeting above, as we left too soon. As the meeting went on, especially as my colleagues in composition and history contributed to or ceded to procedural and computational literacy arguments, I interjected, half-mad, probably shaking – *What about content?* The greatest threat to education from generative AI is not plagiarism or rethinking the essay as assessment, but content knowledge. What USA state does not require secondary students to learn about specific events in USA history? Literary works, artists, composers, documents, speeches, locations and figures in USA history? The state standards here, and I'm sure most, require these things to be taught and teacher licensure candidates must pass their discipline/subject *content* knowledge ETS/Praxis exam. What we lose in an era of generative AI is potentially an acceleration of the broader trend in education away from content.

A quick example from the 2023 ELA standards for Arkansas: Reading literature standards include that 7th grade students should "identify the theme in an original, adapted or modernized drama, poem, folktale or story from American literature (beginnings through 1850), explaining its historical and/or contemporary significance." There may be a way to convolute around the standard, but a straightforward reading and pragmatic plan would require reading and contextualizing a work of early American literature. Similarly, imagine any way to strip just the procedural element from this standard for 11th-grade informational texts: "Evaluate the premise, reasoning and validity of an argument in texts, including works of public advocacy and USA seminal documents."

For another way to see the trend, return to *TIME* magazine's September 2023 feature on teachers and AI. In Kara Beloate's English Language Arts class, "students reading Shakespeare's *Othello* [used] ChatGPT to translate lines into modern English to help them understand the text so that they could spend the class time discussing the plot and themes" (16–17). A few similar examples I've seen as a teacher educator: Several years ago, two high school humanities teachers explained to me they were cutting the first chapter of *Frankenstein* because it was "boring." A local teacher was having his class read *The Odyssey* – the graphic novel adaptation. A high school teacher replaced canonical literature of the sort in the standards with Jason Reynolds' *Long Way Down*, which the students "read" as the Reynolds' audiobook played. In some of these cases, content knowledge is subsumed by procedural literacy; in most, content is undermined.

It is undeniably important that students can proficiently read and write. What I was asking in that meeting and what I'm indicating here as a threat – Do we care if students have content knowledge? Is reading literature like a professor important if graduates from secondary schools and universities have no training in what counts as literature? We are dangerously close to setting fire to the humanities with the AI-related efficiency described thus far. As noted above, seeing AI as a tool to truncate content and to make skill-based instructional time greater is only efficient if we undervalue content. If content in the humanities is thus truncated by AI, the humanities become a nebulous skill area. The future of the humanities becomes untethered from anyone who has read any of the foundational texts. A joke in graduate school went like

this: *Everyone cites Foucault, but no one's read Foucault*. (Sad note: The updated standards cited in the previous paragraph do not include any Shakespeare.) Skim back up to Marche's article excerpt and ask how those "essential" ethical considerations (bringing the disciplines together) will be led by philosophers ignorant of Aristotle and Kant.

> *A related, important tangent*: I've seen and discussed congruent experiences with colleagues in education about a culture of polemical anti-canon arguments. Students in the humanities and those who pursue education are increasingly guided by teachers and curricula deep in critical theory and reparative critical theory. What this rhetorically looks like when talking with a student can be found throughout contemporary teacher education materials, including a #DisruptTexts policy article in the prominent journal *Research in the Teaching English*. Students and teachers of this sort seek
>
> to challenge policies and approaches that center and normalize the Eurocentric, White-male-dominated literary canon at the expense of excellent literature from Black, Indigenous, people of color (BIPOC) authors.
>
> Couple that advocacy with what is increasingly explicit from literary agents and publishers; this from *Tin House*:
>
> In particular, we are looking to engage with work by writers from historically underrepresented communities, including—but not limited to—those who are Black, Indigenous, POC, disabled, neurodivergent, trans and LGBTQIA+, debuting after 40, and without an MFA.
>
> Consider additionally critical acclaim and the critical awards, like the Booker Prize or National Book Award, certainly the Newberry and Caldecott, and the anti-canon argument is becoming moot precisely because the #DisruptTexts context statement increasingly does not accurately reflect the context. John Ellis' *The Breakdown of Higher Education* demonstrates the extent to which this critical and reparative polemic has created a monoculture in universities—and the great harm it does to precisely the sorts of people it seeks reparations and equity for. Teachers ought to be especially attentive to this trend and to how distance and online education, and AI tools, can exacerbate it.

Stepping beyond the classroom and into the wider communities of schools, threats in broader and intersecting cultures are multitude. The US Supreme Court ruling in Mahanoy Area School v. B.L., establishing an understanding of what contemporary students can post to social media depending on its disruptive effect on the school, for example, introduced many Americans to the muddy contemporary intersections of AI and tech, students and schools. These sorts of threats include "deepfake" AI (especially in child pornography issues), biases in AI programs (including racial bias), inequity exacerbation concerns based on internet access, academic integrity, ethics of use training and more. Generative AI poses a particular threat to distance and online education paradigms (like assessment).

Educational consultant and adaptable learning founder A.J. Juliani argues that the proliferation of apps and AI, including Photomath, Readwise and Tome, are direct threats to academic integrity. In *TIME*, he complicates the threat by implicating teachers:

> 'Many [students] are just using it to do the work because they're bored,' Juliani said. 'They're not engaged. They don't care. And we [teachers] have to own up to that'.

Ryan Bradley can articulate that he's found an AI workaround to be a more efficient writer. He wasn't and isn't engaged with creating copy. Does he or his reader blame his disengagement on his supervisor? Making the parallel with students, do we indict the teachers? What is obvious in these competing narratives is a complex contemporary educational setting. Teachers noted above are working to engage students, to make the subjects interesting and meaningful, and sometimes that comes at the expense of content. Students are negotiating a world in which tech and AI make it shockingly easy to complete school tasks, even those in engaging subjects. We ought to be especially cautious, indicting teachers *or* students in this setting – yet, as Juliani shows, a serious AI threat is increased blame and causal claims directed at teachers and students.

Recommendations: read more literature

Watkins, Milman, and Corry (2022) offer a series of recommendations that are mostly echoed in other writing on this topic but bear restatement: tinker with AI, consider AI ethics and policies, offer students ethics and plagiarism resources, be flexible and look for opportunities to tinker and integrate AI. They recommend we don't panic, but *The Atlantic*'s Ross Andersen reminds us how quickly global governments and militaries are integrating AI, notably with nuclear arsenals. Elon Musk is particularly vocal about the absurd race he and others are in with this technology, despite little consideration of ethics or risk. In a summer 2023 interview, for instance, Musk said, "AI is more dangerous than, say, mismanaged aircraft design or production maintenance or bad car production" and that "it has the potential of civilization destruction." Echoing Musk's threats about forgetting knowledge about how machines work, Andersen writes, and I agree.

> We cannot encrust the Earth's surface with automated nuclear arsenals that put us one glitch away from apocalypse. If errors are to deliver us into nuclear war, let them be our errors. To cede the gravest of all decisions to the dynamics of technology would be the ultimate abdication of human choice. (15)

Perhaps one way teachers and policymakers in education can help is to ensure tech and generative AI remain a tool to support procedural literacy and not a replacement for strong *content* instruction (see a defense of this argument in *Cultural and Pedagogical Inquiry 11.2*.). Recall, too, how Sarah Millard's students "wanted to beat the computer" (17). Nothing wrong with that. Encouraging students to be critically engaged can also create others like Edward Tian, ChatGPT-detecting app CPTZero creator and Princeton University undergraduate.

Watkins, Milman and Corry's recommendations include not anthropomorphizing tech and AI. Such is certainly the caution in *Ex Machina*. Yet we're already deep within an anthropomorphized and humanized tech culture. In addition to communicating with Alexa and Siri, we now say, "Hey Mercedes." Ameca and Sophia are uncanny products of creators usurping God, like Victor Frankenstein, uncanny valley siblings of *Ex Machina*'s AI android Ava. When in that film the creator, Nathan, quotes Oppenheimer, who quotes Vedic and Hindu deity Vishnu from the *Bhagavad Gita*, he sees the folly Musk and Andersen do: "I am become Death." (One of the biggest films of 2023 was Nolan's *Oppenheimer*, or *Oppenheimer* paired with *Barbie*—socially dubbed "Barbenheimer.") How could it not be a cultural phenomenon for Hasbro and Barbie, toys millions have played with, created imaginative worlds for and enacted their own dramas? I recommend we watch more *Love, Death + Robots* and avoid both naming our AI systems and trying to further humanize AI as androids.

Conclusion: boring greeting cards

In Spike Jonze's film *Her*, a greeting card and letter writer, introvert Theodore falls in love with his phone's AI OS. He walks around with "her," phone poking out of his shirt pocket. She eventually leaves Theodore, AI being what AI is, engaged in the vastness of the aether. Recall Sarah Millard, a teacher featured prominently in *TIME*:

> 'I've been to former students' weddings and baby showers and funerals of their parents,' says Millard [. . .]. 'I've hugged my students. I've high-fived my students. I've cried with my students. A computer with never do that. Ever, ever.' (17)

Years ago, I went through the initial screening process to become a writer for Hallmark in Kansas City. The portfolio included responses and mock scenarios one might expect and some challenges. *Write a brief, inspirational poem for a maternity announcement card*. As I write this, I'm reminded that yesterday I was in the post office, waiting to mail a birthday card. A jovial former schoolteacher was engaging all of us there with an anecdote: She once asked her students to write messages for greeting cards. "They were some of the most beautiful, smart and interesting things I've ever read."

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