Against Tasks and Hallucinations: Returning to Thought in the Age of Machine Learning

Lily Lucas Hodges
Chapman University

IN NOVEMBER OF 2022, the company OpenAI launched a large language model (LLM) for public use called ChatGPT. Since the proliferation of artificial intelligence (AI) products in the preceding years, teachers have grappled with how this new technology might change the way students work and learn. In fields that prize writing, there is a renewed fear of students cheating, this time by using generative AI to complete their writing assignments for them. This fear coexists with uncertainty over students' abilities to develop writing skills or whether such skills are needed anymore, not to mention the deeper, existential fear that technology will replace the teacher's role.[1]

Although none of these fears are new to education, they do take on a new character in this moment. Student cheating has long existed, and automation entered the realm of education decades ago. However, pointing to a historicity should not negate the possibility of contending with the concerns of the present. The two are now intertwined. New technology is heightening their influence, as cheating simply becomes more accessible and teaching becomes more integrated with learning management systems like Canvas.[2]

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As AI scholar Kate Crawford explained, "The intensification of technocratic power has been under way for a long time, but the process has now accelerated."[3]

Moving Past Cheating Concerns

A standard learning outcome for students in humanities courses, from middle school into higher education, is to craft clear, specific arguments based on evidence. A common assignment to develop and assess this learning outcome is the take-home essay. Generative AI models, such as ChatGPT, Copilot, and Grammarly, are quickly able to generate such essays, from the brainstorming process to the final draft. One way teachers assess if students used AI to write their essay is by running student papers through Turnitin, itself an example of AI. Since Turnitin launched its own AI detection tool in 2023, it has reviewed over 200 million papers, finding 11% or 22 million contained text that was at least 20% generated by AI.[4] Since AI is not a word-for-word form of plagiarism, the best Turnitin can do is provide a measure of the probability of AI use. However, students have self-reported high usage of AI in surveys. A 2024 survey by the Digital Education Council found that 86% of the 3,839 students surveyed use AI, with half using it weekly. In addition, 33% reported using AI to summarize documents and 24% to create a first draft.[5] Overall, the data suggests student engagement with AI is common.

Unsurprisingly, teacher concerns over student use of AI have increased. A 2023 study by Tyton Partners found that "preventing student cheating" went from faculty's tenth-ranked challenge in the classroom in 2022 to their first-ranked challenge within a year.[6] These concerns seem well-founded, considering the same report revealed that a majority of students indicated they would continue to use AI even if instructors prohibited it.[7] A 2024 study by Tyton Partners asked faculty what facets of their workload have increased, and the highest chosen response was "monitoring for academic integrity and/or enforcing policy," while the second was "redesigning assessments to counter AI usage."[8] The introduction of easily accessible generative AI programs have changed teachers' relationships to their work in a short time frame.

What is to be done with all this change? In this article, I review student discussions of AI and the take-home essay in a lower- division

history course called "LGBTQ America" at Chapman University in California. After the discussions, students then investigated AI-generated essays through a "deconstructed essay" (see **Appendix A** for assignment) and reflected on the process. An analysis of their class discussion and submitted work offers insight into the limitations and possibilities of engaging with AI, highlighting both a general student desire to continue writing take-home essays and a unique set of teachable moments offered by engagement with generative AI.

From this experience, I suggest that rather than becoming overwhelmed by or dismissive of this technological acceleration, we should recognize that the early, hallucinatory period of generative AI provides a distinct moment to critically engage with the outcomes of *machine learning* and reorient students, instead, towards *human thinking*. This rupture between the concepts of knowledge and thought is rife with pedagogical possibility and offers critical questions about the transformation of education into a task-oriented program—one that is becoming ever more corporatized through learning management structures.[9] How do we shift AI from something that students use to generate an essay for an outcome-based task towards a process-based teaching tool instead? And, do history's core competencies allow for this shift?

If generative AI essays can meet learning outcomes in history classes, then I suggest a deconstructed essay assignment to return the focus to the processes involved in learning rather than the end results. After all, for teachers, the goal is not about the paper itself; it is about the skills learned along the way.[10] By focusing on the process, we can pull student thinking out of the business model of streamlined productivity, where technology companies view paper writing simply as a task to complete. The deconstructed essay thus enters the conversation that scholar Lara N. Dotson-Renta provided on the state of education:

> As a culture, the [United States] has come to place decreasing value on thoughtfulness, abstraction, and nuanced critical thinking that poses big (uncomfortable) questions rather than presuming answers. Those charged with overseeing learning often want "outcomes" rather than process, even if those outcomes are temporary, even if the picture they paint is incomplete.[11]

AI itself favors this culture. As a countermeasure, the steps in the deconstructed essay are meant to guide students through a process

without a clear destination. In other words, to borrow from historian and pedagogy expert Kevin Gannon, the process becomes the outcome.[12] Ultimately, using AI for a process-based assignment asks what new critical thinking skills a history student should practice by stitching AI literacy skill-building into syllabi or grade-level curriculum.

Current Learning Outcomes and Student Essays in the Age of AI

In 2016, the pedagogy-focused Tuning Project of the American Historical Association outlined robust core competencies and learning outcomes for history students. Since these outcomes take time and practice to achieve, 100-level courses do not guide students towards mastery of each outcome and competency. Instead, teachers of 100-level courses often assign shorter take-home essays rather than longer, in-depth research projects. In doing so, they move students towards the Tuning Project's core competency: "Create historical arguments and narratives," which is sub-pointed with a learning outcome to "Craft well-supported historical narratives, arguments, and reports of research findings in a variety of media for a variety of audiences."[13]

AI-generated essays can meet these learning requirements. As of 2024, for example, ChatGPT generated grammatically correct yet conceptually vague essays, often good enough to get a passing grade.[14] AI is passing as an average student when a student is understood as capable of knowing, not thinking. In this sense, the potential issue with the take-home essay is its ubiquitousness, a form that fits too neatly into standard learning outcomes. The short take-home essay assessment is so disciplined that a machine can achieve its aims.

The term "artificial intelligence" conjures a mystic power, but the companies that build it refer to the technology as "machine learning." The distinction between intelligence and learning here is important.[15] Intelligence implies something greater than the acquisition of knowledge. Machine learning has not acquired intelligence. Instead, people train generative AI writing tools to learn what to predict (the "GPT" in ChatGPT stands for generative pre-trained transformer). In this sense, generative AI "knows" the probability of what to say next. It can know, not think, yet this is enough to meet the demands of some of AHA's learning outcomes, which poses new questions.

Do learning outcomes encourage students to think if a tool that often knows what to predict, but never thinks, can meet the outcome? Is the take-home essay an appropriate way to assess these learning outcomes in the age of generative AI?

The Student Perspective

Perhaps just as importantly, what do students think? In Fall 2023, I turned to my students for insight. In a class discussion broadly on AI, students reflected on the question: "Is there value to a take-home essay?" Below are notes from student thoughts during an open discussion in class:

- I had a professor that mandated in-class essays, and it pissed me off—why am I being punished for the few that are using ChatGPT? But also, an in-class essay isn't using primary sources, so is it historical writing?
- Bigger skills like thinking, how to persuade, and language are still at play in the take-home essay.
- Writing is personal, it's expression, like sewing. You don't need to know how to sew, you can buy clothes, but there's something personal to the act of sewing.
- As a bio-chem student, writing is not important to me. I took an English class, applied what I learned to bio reports and got in trouble. I think it's cool that ChatGPT can write it for you.
- ChatGPT is like what a calculator is to math classes. People still learn math.
- In-class essays feel stressful. Like APs and SATs, it's just cramming.

I was surprised to find that most students were in favor of professors continuing to assign take-home essays. It helped reorient my concerns away from student cheating.

A year later, I asked the same question to a new group of students in the same course and received somewhat different results. When asked if there was any value to the take-home essay in 2024, students commented:

- Writing helps you express your own opinion. The whole point is for personal growth, to better yourself.

- It depends how you use AI and when. I have AI write a draft of the essay first and use it as a starting point, but then I write my own essay.
- I love writing for pleasure and for joy and from the heart. But if it's about learning, then the essay in general may not do much. I gain more from discussion, from hearing people with different experiences share. We should make learning more about the people in the room.
- You get out of it what you put into it. The real question is, with AI around, is the take-home essay worth grading?
- I have a teacher who uses AI to write essay prompts. Then students come up to them after class asking questions about the prompts. The value point isn't held.
- I'm a graphic design major, and I was writing a defense of my piece, and my teacher said, "You know you could just use AI to write it." It's like they were saying you can use it for the things that don't entirely matter.
- Early ChatGPT was, honestly, stupid. And now, sometimes you can't even clock it.

There are too many variables between the two classes to draw strict conclusions. Yet the differences suggest that students and teachers might become more ambivalent to generative AI use over time. There are also new ontological concerns about take-home essays now that they can be both created and written by AI and, perhaps unknown to students yet, increasingly graded by AI.[16]

If AI can create and complete a *standard* assignment, how could we *un-standardize* or conceptualize an assignment that moves away from completion and back towards the process of learning? The impetus to find new ways of assessment is twofold: first, to serve the needs of students who will continue to encounter AI technology after they graduate and, second, to address the fear that a lack of innovation in the profession only serves to increase "technocratic power" in education to the detriment of the teacher's role.

The Deconstructed Essay

While it remains to be seen if the take-home essay will become a thing of the past, the topic is at the heart of numerous thought pieces

on AI. Some teachers' reaction is to turn take-home research papers into in-class essays. Others return to exams. Still others choose to stay the course. And a few have tried to find a middle ground that acknowledges AI yet remains authentic to student learner outcomes.[17] I meet my colleagues who have written thought pieces in search for a middle ground between allowing AI use and returning to the handwritten exam.[18]

The deconstructed essay asks students to break down an essay generated by AI in order to examine its parts. This approach concerns the same learning outcomes, but from a different angle, with the idea of keeping the goal yet changing the path to achieve it. The first step is thinking about the goal and the relationship between the student, the machine, and the construction of knowledge. Here, I loosely return to an old process for inspiration—the philosopher Jacques Derrida's concept of deconstruction. On a basic level, deconstruction requires a close reading—in this case, of the essay form—to understand levels of interpretation within the construction of the form. However, it is important to note that deconstruction is not destruction. The point here is not to destroy the take-home essay assignment, nor is it to prove that AI is wrong. Rather, this assignment asks students to engage with the component parts of an essay to better understand the form of a research essay and the skills required to write one.

One example of how this theory can inspire change comes from the renowned, three-Michelin-star chef Ferran Adrià. In the 1980s, Adrià's answer to a seemingly straightforward question—What makes an omelet an omelet?—changed the culinary landscape and created a gastronomic technique named after Derrida's concept.[19] In rethinking the traditional *tortilla española,* Adrià deconstructed the dish, reducing it to its basic components while preserving the essence of its taste. Instead of cooking egg, onion, and potato together in a frying pan, Adrià thought to serve each part, cooked to reveal its own essence, separately on a plate. Adrià's approach can be transferred to the issue at hand. The question becomes not what makes an omelet an omelet, but what makes an essay an essay? The act of deconstructing provides multiple routes to get to the same destination. Currently, most assignments ask students to shop for primary and secondary sources, then synthesize them to cook an essay. With the deconstructed essay, students start with an AI-generated essay and

then pull apart its assumptions and primary and secondary sources to consider them each in a deeper, richer way.

For this assignment, students first encountered an AI-generated essay. Overall, most students were unimpressed, calling the essay "subpar," "vague," and "lackluster," while several used the word "mediocre." Others were not as quick to critique the AI-generated essay, calling it "not bad" and "relatively well written," while one student said it was "impressive." A couple of students found the essay's general quality familiar, like a less developed version of their own work. One student described it as "decent overall, but it resembles work I turn in when I just skim a reading and am searching for things to say to meet a word count." Another offered, "The essay is written in a style reminiscent of a history student who knows how to write these types of essays but simply did not do their research." Beyond overall impressions, students marked two main concerns with the AI-generated essay—use of evidence and a tendency towards revisionist history.

Through their analysis, students then began questioning if the parts succeeded in supporting the essence of historical research. The following provides a synthesis of student work as it relates to the core competency's call for "well-supported historical narratives." Students deconstructed this competency in two ways: investigating the inaccuracies or "hallucinations" of the AI essay (evaluating the "well-supported" aspect of core competency) and outlining AI's revisionist tendencies (evaluating the "historical narratives" aspect).

AI Hallucinations as a Teachable Moment

The early days of AI present an interesting phenomenon that the deconstructed essay reveals: AI hallucinates. Meta, which owns Facebook and Instagram amongst other platforms, defines AI hallucinations as "confident statements that are not true."[20] According to internal documents from Microsoft, which owns Copilot, AI is "built to be persuasive, not truthful."[21] Ethan Mollick, Professor at the Wharton School of the University of Pennsylvania, put it another way, calling ChatGPT "an omniscient, eager-to-please intern who sometimes lies to you."[22]

I chose to test out AI's tendency to hallucinate on an understudied topic in the field—LGBTQ history. While plenty of universities offer

survey courses in "general" U.S. history, African American U.S. history, Women's U.S. history, and so on, few offer the same on the LGBTQ community. How might the relative lack of LGBTQ source material for machine learning manifest itself in the AI-generated essay? Most essays were too general to provide hallucinations. However, they still appeared. For example, an AI-generated essay on the policing of the LGBTQ community provided the following cited quote from James Baldwin:

> "In the face of police harassment, the LGBTQ community found strength in unity, creating support networks and safe spaces that became the bedrock of resistance" (Baldwin, 1993 p. 109).

The quote sounds good and is cited, so what's stopping a student from believing it is true? Can we teach students to question the confidence or persuasiveness of AI-generated work? How might hallucinations become their own teachable moments?

The field of history presents a unique opportunity to provide students the tools to do so. It is a field that asks students to consider nuance, an essential skill in a world where social media algorithms favor binary thinking. Students who use AI are skipping the thought process needed to write an essay. The deconstructed essay provides students with an opportunity to return to the process by questioning how AI comes to its conclusions. Further, by de-emphasizing a particular outcome for the assignment and focusing on the process instead, students explore historical methodology, an attribute that can make students less naïve.[23] The act of studying history becomes not just about the final conclusion, in which there is a correct or wrong interpretation, but also about a subject of inquiry that also requires an evaluation of sources.

As for the Baldwin quote, one student's critical engagement with AI led them to point out that James Baldwin passed away long before the moniker "LGBTQ" was in use, while another went to the cited source and found the quote to be fake.

From Hallucinations to False Citations

Students discovered many faults in ChatGPT's generation of evidence. Some of them revolved around hallucinations such as the Baldwin quote above or, for example, ChatGPT "stating that

George Chauncey is a Sociologist when he's actually a historian." Most student reflections, however, revolved around ChatGPT's use of citations, probably because students were prompted to investigate the sources in the assignment. For example, one student noted: "ChatGPT included the page number of 102 in its footnote citations; however, this source is a movie and thus does not have page numbers." As this student explained: "As soon as I discovered that ChatGPT cited a movie as a book, the entire essay lost credibility even though its information about the event was still accurate." Other students had similar reasons to doubt the cited information:

> As for the quotations, oh boy. The first citation is the [Lillian] Faderman book that we read a chapter from for class one week. I found an ebook of *Odd Girls and Twilight Lovers* from JSTOR, and I went to the page cited, but the page did not talk about private gatherings. There weren't even the words "postwar America"!…I did my control+F to search "in the bars" [used by AI] throughout, and there was no such phrase.

A different student thought further about quotes that didn't exist:

> When running the AI, the sources that I received were unfortunately unavailable online. Searching for the sources and coming up with nothing made me think, where is the AI getting the information or quotes? This leads me to believe that the AI found these quotes or pieces of information used in another website or paper and used them from there. This case raises a fascinating question: How does AI find its evidence, especially in cases where information is blocked or private?

And yet another student took the issue to its logical conclusion:

> When I asked ChatGPT to give me the paragraph where it pulled the quote from, I was given the response: "I apologize for the confusion in my previous responses. The quote attributed to Robert Christgau in the essay is fictional, as I generated it for illustrative purposes. Unfortunately, I do not have direct access to specific quotes from copyrighted texts, and as of my last training data in January 2022, I don't have access to specific page numbers or quotes from particular books."

ChatGPT generated false citations and mistaken identities to convince students that the information it provided was accurate. These are small examples of how the information that a student might receive from AI is prone to be compelling, but not true. What conclusions did students draw from hallucinations and false quotes?

A few students reflected on the work of historians: "In my standards, this essay did not go in as much depth as I had hoped for as it seemed to summarize the topic rather than coming up with arguments, which is what historians do." Another student wrote, "From this process, it was a good reminder to always check the sources of a paper before considering using it as a secondary source or as a reference." Another considered the role of context, stating: "The work of historians requires finding the little details the AI paper is missing. While the AI paper was not bad and was correct, it lacked personality and details that provided the bigger picture of an event." These student reflections point towards an analysis of the research essay as a form, one that requires a certain kind of work, and these reflections can serve as a new way of understanding their own work required to write in this form.

Evaluating AI's Historical Narratives

Most interestingly, students also examined the character of the AI text, keenly observing AI's tendency to act as the "omniscient, eager-to-please intern who sometimes lies to you." These students thought deeply about the negative implications of the eager-to-please function of AI in the realm of history. One student wrote:

> This essay explores how lesbian subcultures "flourished in response to the restrictive cultural norms of postwar America," which sounds strange. Lesbian subcultures didn't flourish. They formed out of survival from the restrictive norms.

Another student wrote, "It didn't add anything new to the topic and seemed to just use buzzwords about solidarity and resistance without discussing why it was important or what they were resisting." Yet another wrote, "The synthesis of the works cited tried to paint a neat and polite picture that was simply not historically accurate, nor accurate to what the authors had both written in their respective pieces." These students seemed to be contending with what yet another student pointed out—that the AI-generated essay "fails to include the nuance." But these comments speak to a larger issue. As an essay coded to be compelling, the AI-generated essays tended towards the main flaw of an uncritical historian: a desire to find change over time to be a story of progress. One student summed up these critiques rather bluntly, categorizing AI as a "revisionist historian's rallying speech for pseudo-activists."

Returning to the Tuning Project's core competencies, how might these points of analysis influence a student's understanding of their work to "craft well-supported historical narratives, arguments, and reports of research findings" and the "strategies to answer them" in ways that the repeated task of writing essays might not do on its own? The deconstructed essay provides an assignment that differs from the norm, offering students a chance to consider the nature of the traditional argumentative essay that undergirds academic historical writing from a new angle. Beyond the existing Tuning Project framework, the deconstructed essay also provides an opportunity to teach to different competencies—namely, ones that are yet to be outlined, such as AI literacy.

Limitations and Considerations

As with the creation of any new assignment, the final step appears dauntingly on the horizon—how to grade it. The question becomes, what do I want students to get out of this assignment? The purpose of the deconstructed essay is to lead students through a process-based assignment that, unlike AI itself, emphasizes thinking over knowing. The end result is meant to achieve some of the same competencies outlined by the Tuning Project, even though students are not writing their own essay. However, I avoided strict learning outcomes by design in this assignment, following studies that show how "the idea that the criterion of competence is what someone can do downplays the importance of how the person arrives at this competence."[24] Here, I invoke the questions asked by Shaunna Smith about invisible learning: "Can one measure the story of someone's learning? And if so, what really 'counts?'"[25]

To assess an alternative to the standard take-home essay, I chose to incorporate alternative ideas on assessment. The concepts of "ungrading" and equity-based grading informed my assessment model. The movement towards ungrading questions the value of traditional grades, with the argument that grades tend to be limiting, inconsistent, and unreliable.[26] Further, in line with the ethos of the deconstructed essay, ungrading proponent Jesse Stommel argued, "Grades are not a good incentive. They incentivize the wrong stuff: the product over the process, what the teacher thinks over what the student thinks."[27] Another challenge to traditional grading

systems is equity-based grading, as put forth by Joe Feldman, who critiqued, among other things, the traditional 100-point scale.[28] Ultimately, I chose to value the process over the outcome and used Feldman's 4-point scale rubric to assess student work, with the number reflecting the level of completeness. The advantage of this grading model for such an assignment is the de-emphasis on a particular outcome and, in turn, an allowance for student exploration and discovery. To improve upon this model in relation to the deconstructed essay, another professor might move further in this direction by removing some of the structure of the assignment and providing students with a more open-ended assignment instead. Conversely, a teacher could move towards a gradeless model, providing feedback that a student then responds to in order to push critical thinking further.

In addition to questioning the assessment style for an alternative assignment, it is important to consider what context or scaffolding might benefit student success for an assignment like the deconstructed essay. For any engagement with AI, students should understand the ethical concerns before starting. I will briefly touch on environment, labor, bias and the university's existential concerns, (with more teaching resources available in **Appendix B**).

First, AI has a negative environmental impact that is only thought to get worse. The alarming rate of energy use by language learning models is well documented.[29] AI energy demands are so strong that Microsoft and Google are now returning to nuclear power.[30] Further, the electricity needed to run massive data systems is enough to overheat when in use and, thus, each use of platforms like ChatGPT also requires a significant use of water.[31]

Second, generative AI is software built from underpaid labor. Returning to the notion of AI as machine learning, companies creating AI need humans to teach their machines, yet this work is often underpaid.[32] Some folks are not paid at all, as is the case with the fast-growing trend of companies selling their information as fodder to help machines learn, including scholarship published by Wiley and Taylor & Francis.[33]

Third, the data and algorithms contain bias. A widely cited study by Bloomberg, drawn from the analysis of over 5,000 AI-generated images, found that AI is more racist, sexist, and classist in its image profiling than the average person.[34]

Finally, the enmeshing of technology industries in education continues to influence the universities' *raison d'être*, with the risk of teacher and student work becoming streamlined into business ideas of productivity. Most tellingly, a recent partnership between OpenAI (parent of ChatGPT) and Arizona State University bills itself as an opportunity to "enhance student success," as outlined by one of its three identified areas of concentration: "[helping] students to learn, learn more quickly and understand subjects more thoroughly."[35] Here, the measurement of learning success is not measured to the process of thought. Rather, like machine learning itself, it is measured by the speed of the supposed acquisition of knowledge.

Conclusion

Students reported in our discussions a general sense that understanding generative AI is important. In debriefing the assignment, one student brought up a telling point: current high schoolers, future freshman, are growing up only ever knowing a world with generative AI. Are they being taught critically about AI or understanding how AI works before college? To which I add, how can policymakers imagine new competencies that support teacher and student success in a world with AI?

Students would benefit from developing AI literacy skills in the same vein as the push for media literacy. As scholars in the study of knowledge remind us, AI "[raises] new epistemic questions about what we can know, whom we should trust, and how we can justify our beliefs."[36] Turning to Finland, the country ranked highest in media literacy in Europe by the Open Society Institute - Sofia, provides a model for how to answer such difficult epistemic questions.[37] In 2016, Finland started implementing a "multiliteracy" K-12 curriculum to teach students how to question sources and build resilience to misinformation from the Internet and social media.[38] The success of this initiative points to adoption by teachers elsewhere. Though the deconstructed essay adds to the conversation about how students might locate nuance, or its absence, in AI and how this could translate to critical engagement within other technological realms, it is only one attempt. However, it does take seriously the notion that the age of generative AI might require a new approach to meeting the competencies needed to make students better historians.

As the number of majors decline in the humanities, as faculty remain overworked and underfunded, and as universities push to normalize AI, it is hard to break the mold. The hope is that a process-based assignment like the deconstructed essay that engages with AI will foster student thought, rather than the alternative where students use AI to circumvent critical thought. There may not be an outcome to pure thought, and thinking is hard to assess, but it is still worth supporting. After all, as Hannah Arendt warned: "A life without thinking is quite possible; it then fails to develop its own essence—it is not merely meaningless; it is not fully alive."[39] Generative AI can lead to such a life—one with plenty of general knowledge, but without personality. Or as a student opined of the AI-generated paper: "It doesn't appear that the paper directly contradicts anything said by my primary source. It also doesn't seem that the paper directly contradicts anything said in class. However, this is all due to the fact that this paper isn't very good overall. It is a very generic essay."

Notes

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1. Cecilia Ka Yuk Chan and Louisa H. Y. Tsi, "Will Generative AI Replace Teachers in Higher Education? A Study of Teacher and Student Perceptions," *Studies in Educational Evaluation* 83 (December 2024): 2, <https://doi.org/10.1016/j.stueduc.2024.101395>.
2. I am grateful to Rajbir Singh Judge for the keen observation that students have long cheated by having someone else write an essay for them. The change now is that one does not need financial resources to pay for such services anymore. In turn, a substantive conversation around cheating should focus on the "why" rather than the "how."
3. Kate Crawford, *Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence* (New Haven, CT: Yale University Press, 2021), 20.
4. "Turnitin Marks One Year Anniversary of its AI Writing Detector with Millions of Papers Reviewed Globally," Turnitin, April 9, 2024, <https://www.turnitin.com/press/press-detail_17793>.
5. Digital Education Council, *AI or Not AI: What Students Want*, Digital Education Council Global AI Student Survey 2024.
6. Tyton Partners, *Time for Class 2023: Bridging Student and Faculty Perspectives on Digital Learning* (June 2023), 18.
7. Tyton Partners, *Time for Class 2023*, 11.
8. Tyton Partners, *Time for Class 2024: Unlocking Access to Effective Digital Teaching and Learning* (June 2024), 13.
9. The latest trend involves gamification. See Amina Khaldi, Rokia Bouzidi, and Fahima Nader, "Gamification of e-Learning in Higher Education: A Systematic Literature Review," *Smart Learning Environments* 10 (2023), <https://doi.org/10.1186/s40561-023-00227-z>. Martin Erikson and Malgorzata Erikson advised: "Quality assurance staff and academic developers need to look beyond the buzzwords and the convenience of one-size-fits-all simplifications and apply the same critical thinking on all levels or apply a formal set of rules for how educational endeavors should be organized. Regarding institutional management, they must ask themselves whether the foremost goal is to promote critical thinking on all levels…or to apply a formal set of rules for how educational endeavors should be organized." "Learning Outcomes and Critical Thinking—Good Intentions in Conflict," *Studies in Higher Education* 44, no. 12 (2018): 2301, <https://doi.org/10.1080/03075079.2018.1486813>. For a history on this development during the 1990s, see Gary Rhoades and Sheila Slaughter, "Academic Capitalism, Managed Professionals, and Supply-Side Higher

Education," in *Chalk Lines: The Politics of Work in the Managed University*, ed. Randy Martin (Durham, NC: Duke University Press, 1998), 33-68.

10. I am grateful to Kate Flach for pointing analysis in this direction.

11. Lara N. Dotson-Renta, "Humanizing the Humanities," *The Atlantic*, January 17, 2016, <https://www.theatlantic.com/education/archive/2016/01/humanizing-the-humanities/424470/>.

12. Kevin Gannon, historian and director of the Center for the Advancement of Faculty Excellence at Queens University in Charlotte, includes Dotson-Renta's observation in a larger conversation about the overreliance on content mastery as an outcome of supposedly successful teaching. See "The Process Is the Outcome," The Tattooed Professor (blog), January 18, 2016, <https://thetattooedprof.com/2016/01/18/the-process-is-the-outcome/>.

13. American Historical Association Tuning Project, "History Discipline Core," <https://www.historians.org/resource/history-discipline-core/>.

14. A small study by Education Reference Desk found that professors graded a student essay on the history of American exceptionalism with a B, while an AI-generated essay on the same topic received a B-. Education Reference Desk, "What Grades can AI get in College?" February 3, 2022, <https://www.eduref.net/features/what-grades-can-ai-get-in-college/>. The issue is also explored in Stephen Marche, "The College Essay is Dead," *The Atlantic*, December 6, 2022, <https://www.theatlantic.com/technology/archive/2022/12/chatgpt-ai-writing-college-student-essays/672371/>.

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Appendix A

The Deconstructed Essay

This assignment encourages students to investigate AI-generated LGBTQ history. The purpose is not to defend or attack AI. Instead, students will deconstruct the process necessary to write a historical research paper and reflect on the process.

Option A: Prompt an AI program of your choosing to write a 500-word essay on a topic we have covered in our course. In your prompt, include the following: "Include two cited quotes. Provide a page number in the citation. Provide Chicago Manual of Style footnote citations."

Option B: Choose from one of the AI-generated essays posted on Canvas.

The Assignment

1. Read the AI-generated essay.
2. Find and read the chapter or section of the source AI cited.
3. Write an annotated bibliography for the AI paper.
4. Search for one primary source for the topic of the AI paper.
5. Write a 250-word minimum reflection paper that evaluates:
   - The strength of the paper's argument
   - The synthesis of the work cited
   - The accuracy of the work compared to the primary source you found
   - The accuracy of the work compared to course materials
   - Overall quality of the essay
6. In addition, write a 250-word minimum reflection paper on the process. Did you learn anything new about LGBTQ history? Why or why not? Did you learn anything new about the work a historian does? Why or why not?
7. Write a bibliography for *your* paper. Here are more instructions on how to cite AI (external link): https://www.chicagomanualofstyle.org/qanda/data/faq/topics/Documentation/faq0422.html

Appendix B

Ethical Considerations

The following is a little more information about each ethical concern outlined in the article, along with some discussion questions to present to students. Questions are roughly scaled from a middle school to university level.

Environment: A report by the Global Energy Policy at Columbia University projected that "US data centers will consume about 88 terawatt-hours (TWh) annually by 2030, which is about 1.6 times the electricity consumption of New York City."[i] Some companies are now returning to nuclear power. Further, the electricity needed to run massive data systems is enough to overheat when in use. As a result, the use of AI also impacts water usage. An engineering professor at UC Riverside estimated that "a person who engages in a session of questions and answers with GPT-3 (roughly 10 to 50 responses) drives the consumption of a half-liter of fresh water."[ii]

Teachers may find it useful to pose the following thought experiments to their students:

- How much energy does your household use a year? What if you multiply that by the amount of people in the country? Considering how AI use adds to energy consumption, what could you or the state do that's different?
- What is the relationship between technology and extraction? Consider the rhetoric of data, how it is "mined"—is this similar or different to the mining of lithium needed to run AI?

Bias: The Bloomberg report mentioned earlier[iii] is a great teaching tool for illuminating AI's bias. However, other examples abound, such as a study of AI used in hospital settings that found commercial prediction algorithms often result in lesser care for black patients than white patients.[iv]

Teachers may find it useful to pose the following thought experiments to their students:

- Take a character from a book students are reading and have students make a picture of the character, first made by them and then by AI. If it looks different, is AI right or are you right? A gallery walk may help.
- Consider the real world implications of AI bias. Is AI worth using if it reifies bigotry? What steps might we have to take to think critically about an AI-generated text or image? What sources is AI using?

Learning: Environment, bias, and learning concerns intersect at the university. For example, professional development workshops for teachers now commonly offer AI strategies for increasing productivity. Meanwhile, research faculty are increasingly funded by big tech, while institutions become increasingly likely to develop or license their own AI tools for students, instructors, and staff use.[v] Certainly, AI is here to stay.

Teachers may find it useful to pose the following thought experiments to their students:

- Let's say a student's favorite way of learning is Kahoot. Ask students when they learned a certain concept. Did they learn from Kahoot? What is the relationship between knowing something and practicing something? Where does the learning occur?
- What is the purpose of a university? What is the relationship between college degrees and the job market? Why? What is the purpose of learning?

Notes

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