



SPECIAL REPORT

# THE ROLE OF ARTIFICIAL INTELLIGENCE IN HIGHER EDUCATION



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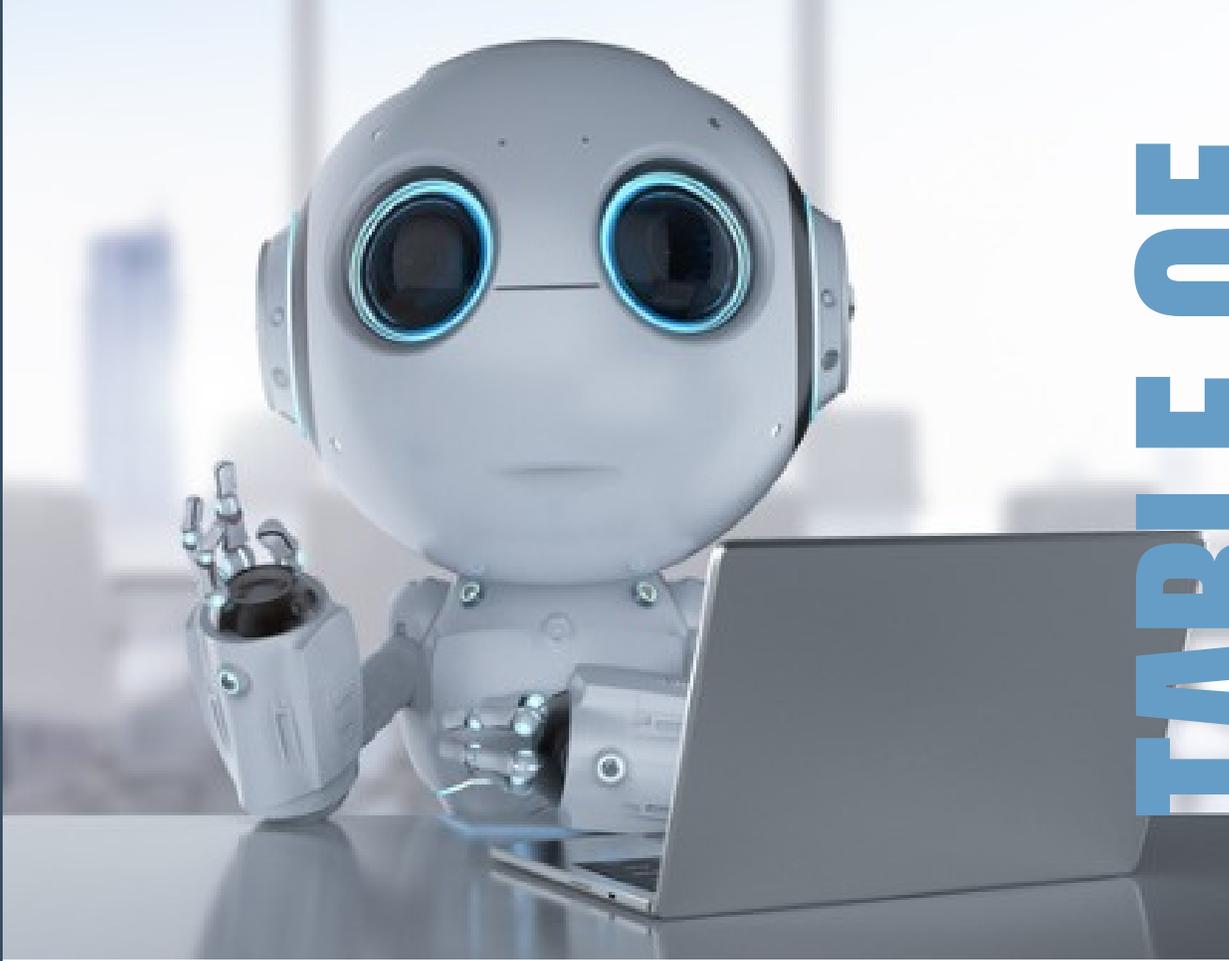
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# CHATGPT OR: HOW I LEARNED TO STOP WORRYING AND LOVE GENERATIVE AI

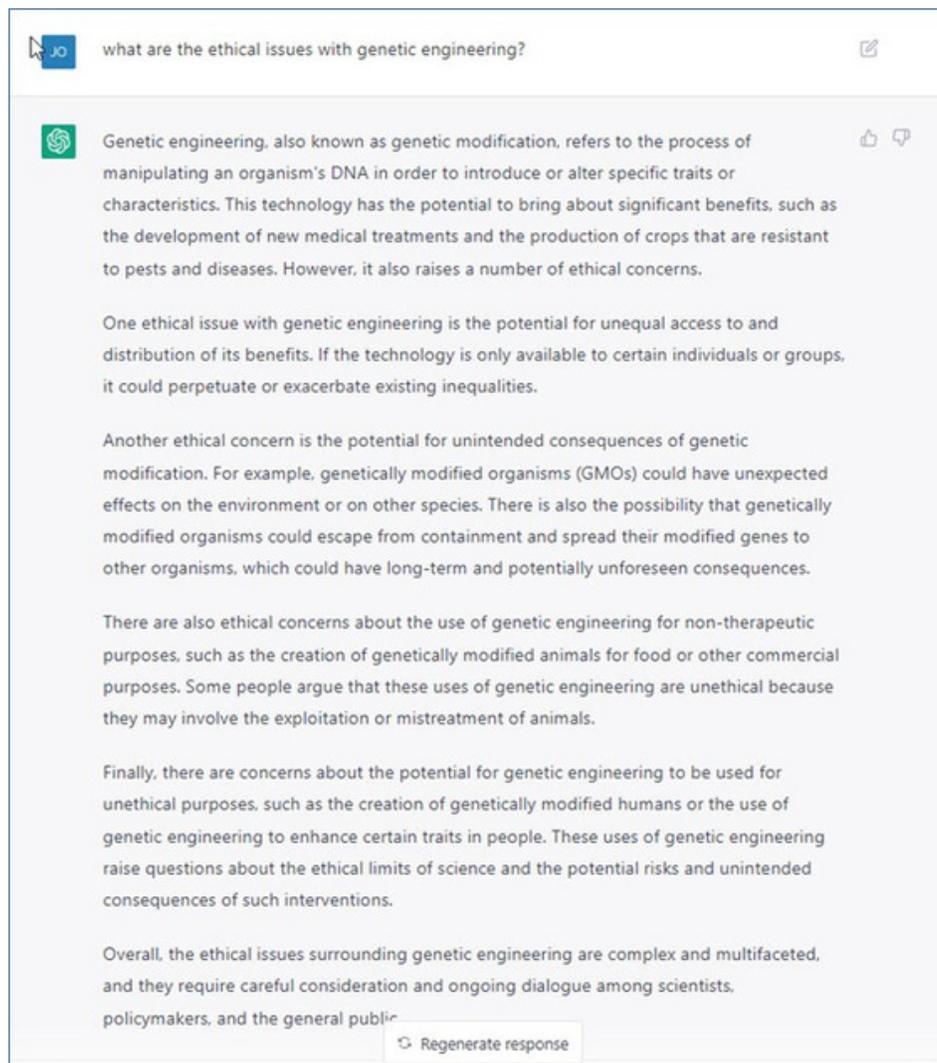
BY JOHN ORLANDO

*"At the moment, it's looking a lot like the end of essays as an assignment for education."*

—Lilian Edwards (as cited in Stokel-Walker, 2022)

The recent emergence of [ChatGPT](#) has hit higher education like a lightning bolt, leaving many educators trying to process its implications. ChatGPT is a free website that allows users to type in questions and get a remarkably well-written response that looks like a college essay. These can be either research topics or creative writing; it will even write a poem for you on a topic you give it. Not surprisingly, students are already submitting work created by it for their assignments (Stokel-Walker, 2022).

While prior versions of artificial intelligence tended to produce clunky text with obvious factual or writing errors, including the early version of ChatGPT, the recently released update is generally free of writing errors and other obvious indications that the response is machine written. Consider the reply I received below when I asked it, "What are the ethical issues with genetic engineering?"



what are the ethical issues with genetic engineering?

Genetic engineering, also known as genetic modification, refers to the process of manipulating an organism's DNA in order to introduce or alter specific traits or characteristics. This technology has the potential to bring about significant benefits, such as the development of new medical treatments and the production of crops that are resistant to pests and diseases. However, it also raises a number of ethical concerns.

One ethical issue with genetic engineering is the potential for unequal access to and distribution of its benefits. If the technology is only available to certain individuals or groups, it could perpetuate or exacerbate existing inequalities.

Another ethical concern is the potential for unintended consequences of genetic modification. For example, genetically modified organisms (GMOs) could have unexpected effects on the environment or on other species. There is also the possibility that genetically modified organisms could escape from containment and spread their modified genes to other organisms, which could have long-term and potentially unforeseen consequences.

There are also ethical concerns about the use of genetic engineering for non-therapeutic purposes, such as the creation of genetically modified animals for food or other commercial purposes. Some people argue that these uses of genetic engineering are unethical because they may involve the exploitation or mistreatment of animals.

Finally, there are concerns about the potential for genetic engineering to be used for unethical purposes, such as the creation of genetically modified humans or the use of genetic engineering to enhance certain traits in people. These uses of genetic engineering raise questions about the ethical limits of science and the potential risks and unintended consequences of such interventions.

Overall, the ethical issues surrounding genetic engineering are complex and multifaceted, and they require careful consideration and ongoing dialogue among scientists, policymakers, and the general public.

Regenerate response

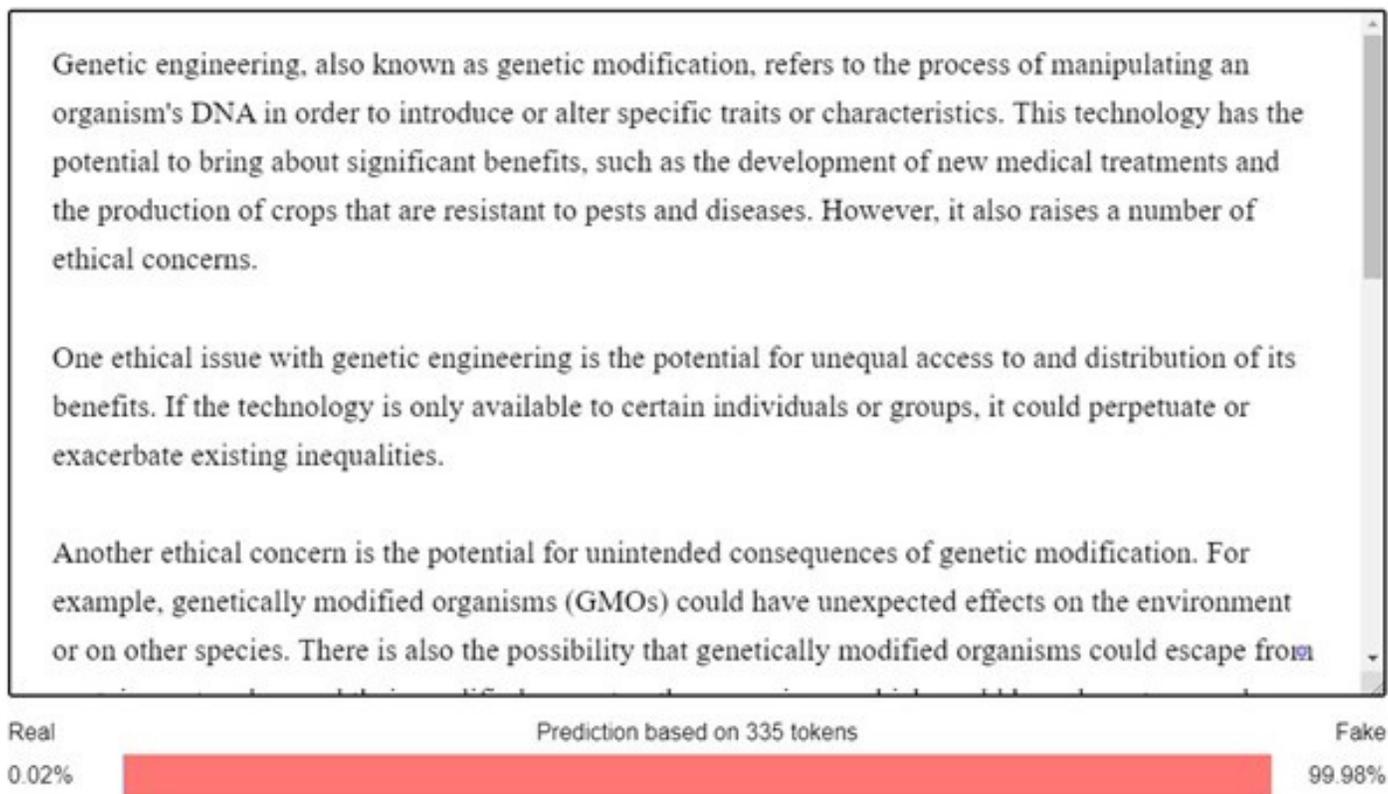
# Reaction

Not surprisingly, the system has caused trepidation among educators who fear it is yet another way for students to cheat. Plagiarism detectors like Turnitin compare submitted work to a database of published and submitted work, but ChatGPT creates the response from scratch, leaving no database against which these tools can check.

[GPT-2 Output Detector](#) comes to the rescue by analyzing text to determine how likely it is that it was generated by GTP. I entered the text that ChatGPT gave me above and received the analysis below:

## GPT-2 Output Detector Demo

This is an online demo of the GPT-2 output detector model, based on the [huggingface/transformers](#) implementation of RoBERTa. Enter some text in the text box; the predicted probabilities will be displayed below. The results start to get reliable after around 50 tokens.



The tool listed it as 99.98 percent fake. I then submitted a few paragraphs from an article that I wrote and was given the opposite response: it found my work to be 99.9 percent real. (Hence, you can feel safe that I'm a real person, or can you?)

## The future

While the immediate concern with ChatGPT is student cheating, it raises far bigger issues about how education will need to transform itself in the future. This change will require illuminating and rethinking some hidden assumptions. Note, for instance, that the GPT-2 Output Detector uses “real” and “fake” to represent human- and computer-generated text, respectively. But how is computer-generated text any less “real” than human-generated text? When Captain Kirk asked the ship’s computer a question and received an answer, did anyone consider the answer “fake?” “Fake” refers to an imitation of something else, and by that token text can’t be fake in itself; it is only fake in how it is used.

But the language demonstrates a deep feeling that computer-generated text itself is somehow illegitimate. Yet we use calculators to do math, and there is no question as to whether the numbers they spit out are legitimate. Similarly, the chat boxes that open on webpages are almost all computer generated.

It will take time for education to get past this feeling of illegitimacy and instead consider appropriate ways for students to use AI. There are actually many ways that students are allowed, even encouraged, to use AI as a tool in their work. They can use Grammarly and spellcheck on their written work to catch errors, and when they do not, we encourage them to do so. A smart student will use a citation tool like RefWorks to create their citations and references; memorizing hundreds of pages of APA rules is like memorizing the URLs of every website in a field rather than learning how to do a Google search.

## Incorporating AI into education

Our students will undoubtedly use AI systems like ChatGPT in their future work, and simply forbidding these systems’ use is a Luddite position that undermines students’ preparation for the future. At the same time, the purpose of education is to learn, and the danger of AI is that it replaces needed learning.

Perhaps math is a good model for how education can incorporate AI . Students learn to do addition, subtraction, and the like by hand in elementary school, even though they could be allowed to use calculators instead. We require the manual method because it provides the deeper understanding of math that students will need for higher math in the future.

By contrast, STEM classes in college allow students to use calculators to free up time for the harder math. Similarly, we might allow students to use AI to do research in humanities and social science courses, essentially giving the information-gathering job to machines, so that they can focus on analyzing and evaluating that information.

Some have objected that students cannot verify the quality of the information they are given from an AI machine because that machine does not cite its sources. This is a legitimate concern, but education can treat AI machines like Wikipedia. A Wikipedia page is a good starting point for research as it provides a broad overview of a topic, but students are expected to supplement it with other sources. Likewise, students might be allowed to use AI machines to get a broad overview of a topic but be expected to triangulate and blend the results with other sources to ensure accuracy and depth. As the GPT-2 Output Detector seems to be very good at distinguishing AI-produced text from human-produced text (which raises the interesting question of what exactly it is finding to distinguish the two), instructors can use it to enforce this rule. In fact, ChatGPT calls itself a “research preview” (Stokel-Walker, 2022), which suggests that it considers itself just the first step in research. Beyond this, instructors will probably start weighting analysis and synthesis more than factual accuracy as we are reaching a Star Trek–computer-like world where getting basic information is trivial.

Finally, instructors in research courses should have an open class discussion of the use of AI in education. Explaining that students pay a lot of money for an education, the instructor can ask what rules are best for ensuring students receive that education. I have found that students are quite willing to suggest limitations on themselves when the issue is crafted in this light.

Instructors might also use ChatGPT as a launching pad for a conversation about future issues in AI. For instance, many thousands of people die every year in car accidents that are almost all due to human error. Self-driving cars are on the horizon and can save those lives, but every once in a while, the computer will itself make an error that results in injury or death. Should people be allowed to sue car companies when that happens, even though the computer system saved 100 times as many lives as it lost? Alternatively, imagine a medical device that measures heart rates and administers a shock when it detects a problem. This system proves to be far more reliable than human decisions and saves many lives, but is not perfect. What happens if a doctor overrides it, believing it to be making a mistake, but it turns out that the doctor is wrong and kills the patient? Conversely, what if a doctor refrains from overriding it on grounds that it is more likely to be right than the doctor and the machine kills the patient? Is the doctor responsible for the patient’s death in either case?

These are the sorts of questions that our society will need to answer, and ChatGPT provides an ideal segue into those discussions. We can’t stop the advance of technology, nor should we want to, and as educators we serve our students best by preparing them for the world they will inhabit.

*This article first appeared in The Teaching Professor on January 17, 2023. © Magna Publications. All rights reserved.*

## **Reference**

Stokel-Walker, C. (2022, December 9). AI bot ChatGPT writes smart essays—Should professors worry? Nature. <https://www.nature.com/articles/d41586-022-04397-7>

# CHATGPT: A MUST-SEE BEFORE THE SEMESTER BEGINS

BY CYNTHIA ALBY

I have seen friends on Facebook create decent songs and stunning artistic creations with little knowledge of music or art, all after spending a bit of time getting to know an AI art or music generator. But since the grammar assistants in my word processors often flag what is already correct and miss what I wish they should have caught, I've never felt AI writing was advancing very quickly. And then I met ChatGPT. The Facebook teaching page for my university has taken off on the topic, so I took a deep dive into what it can do. I've seen it create (in a flash) movie scripts and comic strips, sonnets and grant proposals, graduate course syllabi and lessons. It can execute math problems, showing all its work with written explanations. Nearly any writing prompt one might assign to be completed outside of class (with a few notable exceptions) can be written pretty well, quickly, at no cost, and undetectable by our current plagiarism software by anyone who takes a little time to learn the nuances of ChatGPT. I am spending the day after Christmas writing this because I don't want anyone to lament, "Why didn't anyone warn me about this sooner?"

This coming semester were you planning on asking students to explain the difference between operant and classical conditioning, compare and contrast the writing styles of Octavia Butler and Louise Erdrich, write a lab report, analyze a speech, create an LLC, or design a brochure? ChatGPT has them covered.

Let me be clear about my first goal; I desperately hope that I can convince you to take an hour to get a feel for what ChatGPT is and what it is capable of right away. I've collected [some ideas and resources](#) to get you started. A few will walk away from this exercise thinking, "What a relief. Nothing needs to be modified in the courses I teach; ChatGPT will not impact my instruction, but I'm glad I can converse about it." But I suspect the vast majority, and especially those who teach online courses, will recognize that this is a game-changer that may require substantial course revisions before the new semester.

But I have a second, more important mission once you've taken a look, perhaps worried about how to approach this technology, and wondered how swiftly AI is going improve and expand. I want to beg you not to turn to increased punishment, surveillance, and control, and instead consider how this fascinating turn of events might be a reason for rejoicing. Might this be an opportunity to turn away from assembly line efficiency and toward a model where we help students use AI to extend their capabilities, allowing them to pursue interests and solve wicked problems? Could this be a chance to design a model where students wouldn't dream of using AI unethically or allow it to steal their learning, a model where educators find more meaning and purpose in their work as well?

At a time when it may feel like AI is stripping away our humanity, I wonder if it might be possible that it is handing us an opportunity to work with students far more than we talk at them. What if students bring strengths, interests, technical knowledge, and comfort in thinking outside the box and we pair that with our own substantial learning and talents and then bring what AI can contribute into the mix? What could we accomplish then?

Let's say, for the sake of argument, that basic writing will now be generated by AI initially, tweaked with a few additional prompts, and then polished by the human writer. Or for more creative, personal, analytic, or cutting-edge writing, the work will start with the human writer and be polished in the end by AI. We'd all continue to do a lot of "writing to learn"—writing to help us think, brainstorm, and make sense of our thoughts and feelings, with no desire to use AI. Would all this be so terrible? Already when I write I use loads of "assistants." Word checks my spelling and grammar, and I use its thesaurus to find the ideal word. Google helps me fact-check. A friend might make suggestions. Citation generators help with APA style. If I am writing something that follows conventions I am less familiar with, such as a book proposal or grant, I look at others' examples. Is any of this "cheating?" How might what constitutes as "cheating" change in the age of AI?

My hope is that this shake-up will force us to address the underlying problem—that while humans are naturally curious and will often pursue out-of-school learning with great fervor, much in-school learning feels trivial and tedious. The pandemic brought even more students to the conclusion that much of the educational endeavor is not worth the considerable amount of time it requires. But as I noted in [\*The nail in the coffin: How AI could be the impetus to reimagine education\*](#), we could "enchant learning in higher ed in such a way that people flock to it when they need to be energized, when they need a balm, when they are trying to figure out their why, when they have burning questions they want support in pursuing."

What might this look like? Students would need to direct their own learning with our guidance; I suspect that's a non-negotiable prerequisite for learning that beckons. We may need to let go of our attachment to a common curriculum marched through in a specified order. When a student is pursuing learning, almost nothing can stop them. When they are forced, developing the intrinsic motivation needed for quality learning is a tall order. What could we imagine if we move beyond our fears that teaching in our particular field might need to drastically change?

We would spend far more time developing information literacy, teamwork, research skills, study skills, and metacognitive skills so that students wouldn't be so dependent on us and could engage in more self-directed learning. We'd have loads of discussions on what constitutes ethical use of AI in this brave new world and ethics in general. What do we want our world to be like? How can we move in that direction?

While foundational knowledge is required for higher-order thinking, we often focus primarily or almost exclusively on the foundational. In this new paradigm, we would point students toward the appropriate modules to develop that foundational knowledge, and we'd move students as soon as possible into problem/project/case-based learning, much of it personalized and experiential or field-based. We would be mostly working with, working alongside, facilitating and supporting, and letting AI do some of the heavy lifting.

What if a key task for more expert students was to create modules for more novice students with your support? These students would select meaty resources, devise interesting ways to engage others with those resources, and create fascinating and [interactive modules](#) that build on what we know about how to make learning stick. The more expert students could learn to work with the novices to clear up confusion, discuss nuances of understanding, and so forth.

That's my vision. [Running with robots](#) is a wonderful collection of other possible visions, some real and some imagined. While it is focused on high school, the majority of the concepts would be transferrable to higher education. What is your vision? If your goal was to make learning so meaningful, worthwhile, and alluring that students wouldn't dream of cheating themselves AND make your own job deeply satisfying, what would that look like? What role might you play in getting this conversation started at your institution? I'm going to facilitate a faculty learning community on reimagining higher education; perhaps you'll do the same.

*This article first appeared in Faculty Focus on January 9, 2023. © Magna Publications. All rights reserved.*

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# SIX WAYS DEANS SHOULD BE LOOKING AT CHATGPT AND THE AI EXPLOSION

BY CONSTANCE C. RELIHAN

When Harry Potter's Aunt Petunia recalls the arrival of her sister's Hogwarts letter, she remembers her parents' response and her own reaction: "We have a witch in the family. Isn't it wonderful?' I was the only one to see her for what she was. A freak!" (Harry Potter and the Sorcerer's Stone). This dichotomy of responses in the Evans household is being repeated as academics explore the implications of easily accessible artificial intelligence software. It is tough to keep up with the explosion of articles that are appearing on a seemingly daily basis about the latest iteration of OpenAI's freely available [ChatGPT](#), although I am grateful that [Peter Paccone](#) is trying to do just that.

My goal is not to add to or replicate that raft of documents but rather to try to think through the implications of the ChatGPT explosion for academic administrators concerned with supporting faculty and undergraduate students as they confront the opportunities and challenges the technology brings with it. While it will probably be a while until we can fully imagine the impact this technology will have on our colleges and universities, here are some initial frameworks and contexts in which we would do well to try to situate our faculty's engagement with technologies like ChatGPT.

**1. ChatGPT is energizing faculty discussions of classroom pedagogy and student learning.** Even though it is early February, the academic term has just gotten underway, and faculty are feeling swamped by work, lots of formal and informal conversations, workshops, and discussions about ChatGPT are in progress. On my campus, for instance, it is the third week of the semester, and there have already been at least two formal faculty sessions related to the platform, and more are scheduled in the next two weeks. Reports from colleagues at other campuses are similar: faculty are eager to play with ChatGPT, share their experiences, and reflect on how the technology might affect their teaching and their students. Not only are the conversations about [how to rethink assignments and exams](#) to forestall students using Chat GPT to cheat, they are also about how the technology can be used to promote active learning, enhanced brainstorming, and critical reflection. [In other words, simply as a heuristic tool for instructional faculty, the technology already has clear value.](#)

**2. It is motivating conversations about the need to create new courses, revise curricula, and reevaluate our general education programs.** ChatGPT isn't only energizing discussions about classroom pedagogy. It is highlighting the wide-ranging and interdisciplinary importance of creating opportunities for students to develop facility not simply with the current interaction of available AI tools but with the deep logic and infrastructure on which they are based. This is not to say that it is pushing arguments that [all students should know how to code](#) (although they certainly should) but that students will need curricular opportunities that permit them to engage in concentrated study of the nature of AI tools and their likely impact on our culture, public policies, and social structures.

On my campus, discussion of ChatGPT is supplementing conversations that were already in progress about the need to ensure that all of our undergraduates develop digital literacy as part of their required general education program so that they have the opportunity to engage with such texts as Robert Aoun's [Robot-Proof: Higher Education in the Age of Artificial Intelligence](#), Caroline Criado Perez's [Invisible Women: Data Bias in a World Designed for Men](#), and Safiya Umoja Noble's [Algorithms of Oppression: How Search Engines Reinforce Racism](#).

**3. While these conversations occur among individuals on our campuses who are meeting AI's burgeoning presence on our campuses with enthusiasm, we need to simultaneously guard against the possibility that such growth will contribute to inequity, the [digital divide, and increased educational disparities](#).** The question of who has the bandwidth (both literal and figurative) to access AI tools to aid them in such activities as preparing college applications and scholarship essays will need our attention, just as will the question of who is able to access this technology to cheat once they are enrolled. Access to AI tools will further add to inequities once their makers decide to place them behind a paywall. At the same time, AI-assisted instruction may provide under resourced campuses with [an opportunity to decrease inequities](#).

Our concern with inequity should extend beyond the borders of our campuses and consider as well the ethical implications of how AI software has been developed. In addition to the implications of ChatGPT's use of all the data that its users enter into it (and that we can see enhancing the program on a daily basis), we ought not ignore such reports as [Time's recent article](#) on the exploitation of Kenyan workers who were paid less than \$2 per hour to train the technology away from a tendency toward "blurring out violent, sexist and racist remarks." (Apparently, ChatGPT is like Shakespeare's Caliban: "You taught me language, and my profit on't / Is I know how to curse.")

**4. While we are on the subject of inequity, it is important to acknowledge the fears that a long-term goal of university administrators is to reduce the number of tenure-track and full-time faculty and increase the use of contingent faculty.** Given the complex and conversational way in which ChatGPT responds to prompts, there may be anxiety on some campuses that ChatGPT could lead to a devaluation of the professorial role, especially in English composition and humanities classrooms. While university administrators may strongly push back against fears of increased adjunctification, it is important to recognize the possible implications on faculty positions. Recently, I asked ChatGPT how likely it was that the technology would "lead to a reduction of tenure-track and full-time faculty and increase the use of contingent faculty on university campuses." Here is the response I received (with emphasis added):

*It is possible that ChatGPT and other language generation models could lead to **a reduction in the need for some types of faculty positions**, such as those that focus primarily on proofreading and editing. However, it is unlikely that ChatGPT would lead to a significant reduction in the number of tenure-track and full-time faculty positions on university campuses. Writing instruction is a complex and multifaceted endeavor, and ChatGPT is not able to provide the same level of personalized feedback and guidance that a human writing instructor can. Additionally, **the role of a university faculty member extends beyond writing instruction, to include conducting research**, mentoring students, and contributing to the intellectual life of the university. These are tasks that ChatGPT cannot perform. Furthermore, teaching is a human-centered activity, and the interaction between a student and a teacher is a unique and valuable experience that cannot be replaced by technology.*

*It is also worth noting that the use of contingent faculty on university campuses is a broader issue that is driven by multiple factors, such as budget constraints, changing student demographics and changing educational models. **The use of ChatGPT or other language generation models as a tool in teaching might lead to a reduction in certain tasks or responsibilities** but it is unlikely to cause a significant shift in the overall trend of using contingent faculty. (<https://chat.openai.com/chat>, 1/27/23)*

This response suggests the reasons for anxiety. On many campuses, instructional faculty are not expected to conduct research and may have limited service responsibilities. The “certain tasks and responsibilities” that are referred to may be exactly those that anxious contingent faculty are hired to perform.

**5. A common anxiety that faculty have about the technology is, of course, the fear of cheating. Our campuses will need to revise and supplement our honor codes and academic honesty policies to clarify when student use of AI-generated text is cheating and how such text should be documented in the settings in which it is allowed.** Headlines such as [“ChatGPT Bot Passes Law School Exam”](#) inflame worries that cheating ([which has already become a greater problem since the start of the pandemic](#)) will become impossible to restrict. Some might argue that if a tool such as ChatGPT can pass our courses, then your instructional methods and your curriculum need some revision. We already let our students use a range of technologies to make their work easier; consider the various [citation generators](#), [online map generators](#), and even the lowly calculator on your phone. We need to clarify our policies about when each available technology may be used and ensure that our students learn the rules. And, of course, we need to encourage our faculty to actively engage with their students and their courses to discourage cheating and motivate students to learn. While some faculty have discussed wanting to emphasize [in-class, pen-on-paper written exams or oral exams](#) to circumvent cheating, such strategies aren’t appropriate ways to measure all learning goals, even if faculty have the time to devote to them. Of course, we need to [prepare for potential abuses](#) by scholars and researchers as well.

The concerns about cheating emphasize what we know to be true about student learning: faculty and students both need to be actively engaged in the creation of classroom activities, assignments, and curricula that matter to them. Inasmuch as ChatGPT is spurring us to think creatively about our courses and how our students' learning might be enhanced, it is a tool we should embrace with thoughtful enthusiasm.

**6. The other common anxiety is that technologies like ChatGPT will cause the end of not just faculty positions but the written essay altogether.** As Daniel Herman [laments in \*The Atlantic\*](#),

The arrival of OpenAI's ChatGPT, a program that generates sophisticated text in response to any prompt you can imagine, may signal the end of writing assignments altogether—and maybe even the end of writing as a gatekeeper, a metric for intelligence, a teachable skill.

If you're looking for historical analogues, this would be like the printing press, the steam drill, and the light bulb having a baby, and that baby having access to the entire corpus of human knowledge and understanding. My life—and the lives of thousands of other teachers and professors, tutors and administrators—is about to drastically change.

But the sky really isn't falling. The essay became an important pedagogical tool because it permitted students a strategy by which to develop critical thinking and analytical skills and gave faculty a tidy object through which to observe those skills. Students still need to develop skills in thinking, analysis, and communication, and faculty will continue to need to determine whether students have developed those skills. And writing will continue to be a means by which all of us—faculty and students alike—come to know what our ideas are. The act of writing refines and clarifies our thinking. Technology won't replace that; it is more likely to prompt students to examine their ideas more closely.

Recently, I asked ChatGPT to write an essay on how university leaders should prepare for the growth of ChatGPT. The bot's response concluded as follows:

*In conclusion, university leaders should be aware of the capabilities and potential of ChatGPT and other large language models, and take steps to explore and prepare for their growth. This includes exploring how this technology can be used in their institutions, considering the ethical implications, investing in necessary infrastructure and resources, and fostering collaboration and partnerships. By doing so, university leaders can ensure that their institutions are well-positioned to take advantage of the opportunities presented by ChatGPT and other large language models, and to stay at the forefront of the field of education and research. (<https://chat.openai.com/chat>, 1/26/23)*

Whatever else is true, ChatGPT knows how to sound like an administrator.

*This article first appeared in Academic Leader on February 6, 2023. © Magna Publications. All rights reserved.*

# EMBRACE THE BOT: DESIGNING WRITING ASSIGNMENTS IN THE FACE OF AI

BY ERIC PROCHASKA

Just as pocket calculators, personal computers, and smartphones have posed threats to students learning math skills, AI (artificial intelligence) seems to be the new tool poised to undermine the use of writing assignments to assess student learning.

In November 2022, a tool called ChatGPT made headlines for its ability to “write” any content. As an instructional designer, I immediately heard from worried faculty that the sky may be falling, wondering what chance they had in the face of robots that could write student papers.

After some reflection, I have come to believe that, in the long run, worrying about how students might use AI to cheat is not the most productive question to focus on. The better question is, even in the era of AI, how can we best teach our students? Below are three methods of designing writing assignments in the face of an AI incursion.

## Method 1: Ignorance is bliss

On the extreme responses, we have “ignorance is bliss” and “resistance is futile” approaches. These attitudes are lumped together because both favor avoiding the core issue. In the former, an instructor may simply be unaware that students can now type a writing prompt into a website and copy the answer it generates into a document to submit. In the latter, an instructor may be aware of AI’s ability to write, but may metaphorically throw up their arms at the overwhelming notion that they can no longer know whether a student has written a submitted paper.

At worst, instructors with this mindset could resign themselves to grading work written by AI and hope most students are still writing their own papers and learning from feedback. For instructors who evaluate to help students develop their writing skills, it would be a waste of time to respond to anything their students did not write – and these students would have little invested in reviewing the feedback.

For instructors who are aware of AI’s ability to write a paper but who don’t feel ready to tackle the robot head-on, the key strategy is one already used to thwart students from passing off another’s work as their own.

**Employ plagiarism checkers.** Just as we have never known for sure that a student's classmate or sibling didn't write their paper, we now fear we will not be able to discern if a computer has done their work. Many instructors already rely on plagiarism checkers. But while a plagiarism detector cannot tell us who wrote a paper if it is not in a database of papers to be checked against, there is now at least one plagiarism detector dedicated to sniffing out AI-generated content. If an epidemic of AI work is submitted in school, or even if instructors are convinced of the possibility, there will probably be a proliferation of tools to detect AI writing. As promising as this may sound, I want to add a caveat: In over ten years of teaching freshman English, I learned that the more I policed student work, the less energy I had to be a good teacher. Be prudent in how much effort you devote to this strategy.

## Method 2: Know the enemy

Second is the "know thy enemy" approach. AI isn't going away. It's going to expand and improve and become more nuanced. Instead of focusing solely on detection, instructors can work to circumvent the submission of AI text in the first place. The strategies of this method rely on designing work that AI cannot perform. Here is a representative sample, in order of increasing promise.

- **In-class writing.** Use in-class writing prompts. The popular conception is that if you watch your students write, they can't cheat. But in-class writing doesn't produce every type of writing or engage every skill we want to assess. It might preclude the writing process in favor of a product and it might well assess how someone writes under pressure. Although in-class writing can successfully be adopted to measure comprehension and subject matter knowledge, it does not appear to be the best method of assessing various forms of writing.
- **Writing alternatives.** Assign visual organizers or other assignments instead of papers. In time, AI will probably generate any form of assignment we can devise. For now, though, instructors could measure how well a student's thesis is supported by ideas, evidence, and arguments, and whether optimal organization is used. This could lead to presentations in place of written papers, or even collaborative writing sessions during class, if appropriate for the course outcomes.
- **Topics that avoid AI's wheelhouse.** Assign highly specific prompts. AI is less likely to convincingly address prompts written with granular specificity. This is even more true if the prompt relates to a discussion that occurred in class or some other content that students encountered (guest speakers, peer presentations, field trips, in-class debates, etc.), of which the AI is not aware.
- **Writing based on human experience.** Assign writing that relies on student perspective, experience, and cultural capital. This approach aligns with a diversity, equity, and inclusion model of designing writing assignments that could result in the most meaningful analysis and synthesis of information. One underlying premise here is that AI will not produce texts with resonant personal perspective; but even if AI can replicate this type of writing, a second premise is that a writing assignment that invites students to share the ways in which their lives intersect with academia will motivate students to write their own papers.

## Method 3: If you can't beat them, join them

Finally, we have the “if you can't beat them, join them” approach, in which instructors embrace the reality of AI-written content and work with their students to demystify and deconstruct the textual artifacts AI produces. This approach is best suited to classes that have ample time to perform a rhetorical analysis of AI writing and the expectations and assessments of writing assignments.

- **Rhetorical analysis.** Deconstruct the very act of AI writing. Discuss how AI “learns” to write. What assumptions about good writing are revealed when AI writing is analyzed? What is AI incapable of doing in its writing? Are there writing situations where AI should be more or less trusted? What is the role of the human in generating and proofreading AI text?
- **Peer review.** Conduct a peer review and/or class discussion of AI writing. Analyze what it writes. What content does AI include, or not include? How does AI organize its writing? What sentence structures does AI favor? Analyze the style in terms of voice, tone, diction, and syntax. Is there rhythm in AI language? Can the full rhetorical situation be deduced by analyzing an AI text?
- **Revision.** Revise an AI generated text. Aside from correcting factual errors, have students experiment with re-arranging the contents of an AI written piece. Have students expand the paragraphs, combine the sentences, add support, and rewrite conclusions. Students may find it difficult to improve upon “perfection,” but also may find it easier to revise the writing of a soulless program than that of their peers.
- **Class presentations.** Present a comparison/contrast of AI versus human writing. Without knowing the author, can students tell which text is written by a human and which by AI? Who writes better? Which writing “sounds” better? Compare line-by-line, thesis statements, voice, organization, evidence and support, arguments and logic, overall impact, and persuasiveness.
- **Refinement.** Try to make AI refine its writing with a focus on the rhetorical situation. Have students compose several variations of the same prompt to fine tune the result that AI produces. Are there limits to how much we can refine the writing? Are there trade-offs of one element being sacrificed when another is included or enhanced? Have students try to dial in the rhetorical situation by adjusting for audience, purpose, voice, tone, etc. Ultimately, is it easier to have AI write the perfectly appropriate text for a specific situation or to write it on our own?

There is no wrong or right method of addressing the advent of AI in a writing class. The ideas presented here are not exhaustive, but are offered to promote thought and add perspective. There is so much more to writing than the act of composing sentences that I do not think we need to fear AI will be the death knell of composition in education. In fact, AI may encourage a brave new exploration of higher-order thinking skills. There are surely larger conversations to have about the role of composition courses in higher education—and of assessments in all courses—but the argument can be made that AI is a tool and students who learn to use that tool are learning a valuable skill.

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