

TEACHING WITH ARTIFICIAL INTELLIGENCE

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Recent innovations in large language models (LLMs)—artificial intelligence programs so sophisticated that they respond to human prompts with clear and well-organized writing that cannot be distinguished easily from writing done by a human—have stirred our imaginations . . . or anxieties. What will teaching in the humanities be like when a powerful AI is integrated with all the tools we use to communicate?

Below we offer resources for humanities professors who want to refine their teaching practices in response to LLMs.

[WHAT ARE LLMs?](#)

[HOW DO LLMs CHALLENGE OR SUPPORT THE MISSION, AIMS, AND OUTCOMES OF HUMANITIES AT BYU?](#)

[AS A TEACHER IN HUMANITIES, WHAT SHOULD I THINK ABOUT FIRST?](#)

[HOW DO LLMs INFLUENCE INFORMATION LITERACY?](#)

[HOW WILL LLMs CHANGE THE TEACHING OF WRITING?](#)

[WHAT DOES ACADEMIC INTEGRITY MEAN WHEN LLMs ARE AVAILABLE?](#)

[WHAT ARE SOME STRATEGIES FOR TEACHING WITH LLMs MOVING FORWARD?](#)

WHAT ARE LLMs?

In November 2022, the tech company OpenAI published its ChatGPT program, a large language model that set off a scramble in the tech industry to develop language-generating artificial intelligence for wide use. This is how ChatGPT itself defines LLMs:

Large language models are computer programs that can understand and generate human-like language. They work by analyzing vast amounts of text data, such as books, articles, and websites, and using that information to learn how words and sentences are structured and how they relate to each other.

Once trained on this data, the models can perform a wide range of language tasks, such as answering questions, writing essays, or even holding conversations with people. They can be thought of as a kind of digital language assistant, capable of providing information and insights on a vast range of topics.

ChatGPT is just one of many LLMs available, some of which are free to use. LLMs analyze patterns in billions of texts and predict strings of words based on that data.

HOW WILL LLMs CHANGE THE TEACHING OF WRITING?

Writing has always been a *techné*—a way of making and doing that involves not only ideas but technologies. While we’ve experienced writing innovations in the recent past—spellcheckers or grammar checkers, for example—there is something fundamentally different about the outputs of LLMs: with the right prompt, ChatGPT and its many imitators can intervene at any point in the writing process, from outlining to proofreading to creating nearly limitless original new text, clear and fluent and human-sounding, about practically any topic in whatever genre the human prompt-writer demands.

Tech companies plan to integrate LLMs like ChatGPT into many of the tools we use to produce writing (e.g., Microsoft Word), much like spell/grammar check or predictive autofill have been added in the past. Imagine, then, that in the near future, all our students will have a sophisticated writing partner built into the toolbars of their word processors that can generate functionally endless polished text at little cost.

There are some ways in which LLMs have the potential to assist students in producing more effective writing. If a student is struggling to get started, LLMs can create outlines, brainstorm, potential sources, and other material. If a student has completed a draft, an LLM can copyedit texts to correct deviations from Standard Written English; it might also make changes for cohesion, concision, or style. When fully integrated into a word processor, an LLM will help students for whom English is a second language align their work with expected conventions.

However, considering the ease with which these programs produce writing, LLMs will automate (rather than merely augment) writing activities that instructors assign students. This automation could significantly reduce student learning. It will be nearly impossible to keep students from using these powerful tools, in whole or in part, for writing assignments and short-essay exams. Therefore LLMs have the power to compromise not only academic integrity but the learning process for which writing is essential. If the purpose of writing is to produce more *writing* rather than effective *writers*, then LLMs are a dream come true. On the other hand, we may feel that easy text production compromises the learning outcomes we hope students achieve.

HOW DO LLMs CHALLENGE OR SUPPORT THE MISSION, AIMS, AND OUTCOMES OF HUMANITIES AT BYU?

Advances in technology are used to achieve both good and bad ends. As a result, faculty in the humanities must engage in dialogue to monitor and regulate the use of learning tools to ensure that they lead to the ends we seek. The [BYU Mission and Aims](#), the College of [Humanities Competencies](#), and individual department and course outcomes are helpful guides for assessing the value, use, and limitations of these tools.

When it comes to using LLMs in the classroom, faculty should consider these questions:

- How can these tools be used to further our mission and aims?
- How might these tools hinder or obstruct our mission and aims?

Faculty should engage students in dialogue on these two questions.

Ultimately, faculty can help students consider how GPT technologies can help to advance the highest and noblest goals of the gospel of Jesus Christ. One starting place may be determining whether and how this technology aligns with [this observation by Brigham Young](#):

“Every discovery in science and art, *that is really true and useful to mankind* has been given by direct revelation from God [. . .]. We should take advantage of all these great discoveries, the accumulated wisdom of ages, and give to our children the benefit of every branch of useful knowledge, to prepare them to step forward and efficiently do their part in the great work” (*Discourses of Brigham Young*, vol. 9, discourse 75, pp. 364–370).

By engaging these issues with each other and with students, BYU faculty can prepare their students now to “[lift, serve, and lead](#)” as we use various technologies to benefit humanity.

WHAT DOES ACADEMIC INTEGRITY MEAN WHEN LLMs ARE AVAILABLE?

We should begin discussions about AI-generated text and academic integrity by considering the aims of a BYU education. As [BYU’s Academic Honesty policy](#) says, “Students come to the university not only to improve their minds, gain knowledge, and develop skills that will assist them in their life’s work, but also to build character.”

While it can be tempting to dwell on the many ways students can cheat using LLMs, this technological advancement also presents an opportunity for faculty to consider exactly what it is we want students to learn and how those outcomes build disciple-scholars. While technologies can augment student learning and character development, they can also automate tasks meant to help student writers grow.

Another challenge is that AI-generated text can be quite difficult to detect. Programs like GPTZero or Turnitin can spot some AI text some of the time, but LLMs have tools that can add stylistic decisions to texts that confound the programs meant to detect LLM writing. Additionally, GPTZero can inaccurately flag writing as AI text when it’s not, making it unwise, as a blanket course policy, to use detection programs to ensure students do not use LLMs for assignments.

If our outcomes require students to write (in part, or in whole) without the assistance of LLMs, then we will need

to express that expectation to students and consider adapting our assignments (See below, “What Are Some Strategies for Teaching with LLMs Moving Forward?”). [BYU’s Academic Honesty Policy](#) states that students should “complete their own work” and “acknowledge the original intellectual work of others” when included in their own. While writing performed by an LLM is not necessarily considered copyrighted information, it is still writing the student did not do and therefore fails as certain evidence of student learning outcomes. In the absence of specific university-wide policies, we’ll each have to determine our own means for protecting the integrity of our curriculum while being aware of the opportunities created by new writing technologies.

AS A TEACHER IN HUMANITIES, WHAT SHOULD I THINK ABOUT FIRST?

We invite you to start by examining the beliefs and values you associate with writing and creative expression. For example, do you believe that writing is a divine gift, a vital means of making and sharing knowledge, and a fundamental process for thinking and doing and engaging deeply in learning itself? What makes writing and creating uniquely human endeavors? What are your goals in assigning writing to your students? How does the act of writing help students achieve outcomes like critical thinking? Is effective writing an outcome in itself?

After identifying the values you place on writing, you are better equipped to consider the role LLMs might play in your teaching.

We suggest two ways to begin:

1. ***Engage the Machine.*** Learn about LLMs from others and by experimenting with them yourself.
 - Read sources from [this list](#) of online articles on LLMs and this “[Quick Start Guide](#)” from the MLA–CCCC Joint Task Force on Writing and AI
 - Enter your assignment prompts or quiz questions into a text-generator to identify how you want to adjust those prompts and to consider whether your prompts invite human writing or thinking skills that LLMs cannot easily replicate
 - Invite students to experiment with LLMs at various stages of their writing process and discuss the advantages and disadvantages of writing with a machine
 - Assess LLM-generated texts with your students using your rubrics
 - Discuss with students the ethics and social consequences of adopting AI as part of our ways of knowing, being, and doing
 - Consider how LLMs can both create linguistic justice (by allowing second language learners to avoid grading docks by adjusting their writing to standard dialect) and jeopardize linguistic justice (by smooching creativity and flattening linguistic variety)

2. ***Express Expectations.*** Determine what you consider appropriate guidelines for learning and writing with AI. Publicize, in your syllabus and other teaching materials, your position on using LLMs for writing

assignments (see sample syllabus policy statement below).

- Make your communication outcomes clear; teach students that the writing process is a form of thinking and learning
- Express how much you value thinking, style, originality, and other non-AI communication virtues; make sure your rubrics prioritize these virtues
- Remind students of BYU's Academic Honesty Policy
- Create a variety of assignments that allow students to write with AI and to experiment with different ways of collaborating with machines
- Teach students communication ethics and expectations in your field

Sample AI Policy Statement for Your Syllabus

Below is an example of the kind of policy statement you may want to include in your syllabus. Teachers' opinions will vary on what role they want AI to play in their classroom. Adapt this in whatever ways best meet your learning objectives or write your own.

As a teacher in the humanities, I value the opportunity writing provides us to come to know our own thoughts and to communicate those thoughts to others. Artificial intelligence text generators are powerful and useful tools, but I want you as a writer to engage with the challenges and triumphs of staring down the blank page, working to organize your thoughts in writing, and striving to select the best language to communicate your meaning to readers. In response to questions about automating work like writing, essayist and environmentalist Wendell Berry [says](#),

There is such a thing as human relations. And there is such a thing as getting a lot of satisfaction, joy, fun from human relations. And I don't understand why people are willing to give up on that. When you write an article for a magazine, you're offering half – you're part of a conversation. The reader is invited to complete it, perhaps by disagreeing. This is a relationship.

The only motive that's worth anything is love. If you don't do the work that you love, and if you don't do it for love, your artistry is not informed by love. It can't be any good. So there's the argument, as far as I'm concerned, against robots.

There are three different ways I'll ask you to engage AI text generators in your writing this semester:

First, on certain assignments, I'll ask you not to use AI at all in your writing process. I hope you'll be willing to bring your own human artistry and love to your writing on these assignments.

Second, on some assignments, I'll ask you to engage with AI tools as part of your writing process in different ways: brainstorming, drafting sections, revising. I'll invite you to reflect on the advantages and drawbacks of using AI in different stages of the writing process.

Finally, on other assignments, you may choose to use AI tools in your writing process or not. If you do use them in these cases, I'll ask you to acknowledge how you've used them and cite any work that is not your own, in alignment with the [BYU Academic Honesty Policy](#) and [OpenAI Sharing and Publication Policy](#).

WHAT ARE SOME STRATEGIES FOR TEACHING WITH LLMs MOVING FORWARD?

We offer four principles to guide you as you decide how to teach with AI in the classroom: 1) favor context over content, 2) favor process over product and writers over writing, 3) expand modes of communication, and 4) treat AI as a multiplier. We also share possibilities for assessing work in a classroom that involves AI.

favor context over content	favor process over product, writers over writing
<p>orient assignments & teaching to <i>situations</i> of communication: writers, audiences, media, genres, purposes</p> <p>require students to analyze/target specific audiences for their work</p> <p>ask students to study the “discourse communities” that value certain kinds of writing—to understand, describe, and write to specific specialized audiences</p> <p>do not assign information-heavy “research papers to no one”</p> <p>assign writing that asks students to make personal connections with your class or other classes</p> <p>teach students to develop metacognitive habits. Require students to:</p> <ul style="list-style-type: none"> <i>write about what they hope to learn</i> <i>set goals for projects / course</i> <i>write about professional communities they will join</i> <i>write about communities they belong to now</i> <i>reflect on how content is meant to be applied</i> <i>reflect on what they learned while completing writing projects</i> 	<p>create opportunities for students to experience the creative process (and hold them accountable for it): coming up with ideas, planning a writing task, gathering information, making outlines or initial drafts, getting feedback, revising, and reflecting</p> <p>ask students to talk about their work with others—peers, peer tutors, TAs, you—and explain the decisions they made as writers</p> <p>use peer reviews, teacher-student conferences, presentations, writing center visits, etc to draw out students’ experiences with their writing process</p> <p>ask students to write process essays to describe the steps they took to produce writing and what they learned as a result</p> <p>scaffold longer assignments into smaller parts and deliverables</p> <p>ask students to use GPT during different parts of the writing process (brainstorming, planning, drafting, revision) and then reflect on the experience</p> <p>emphasize what endures about the writing process no matter what tools are used: even if you’re using AI, you still have make judgments how to generate, organize, and present ideas</p> <p>encourage students to consider the affordances of a variety of the writing tools available to them: AI, word processors, pen and paper, brainstorming strategies, revision strategies, peer readers, etc.</p>

expand modes of communication	treat AI as a <i>multiplier</i>
<p>go beyond the double-spaced word-processed paper</p> <p>stop assigning content-heavy take-at-home short-answer essays that lean more towards <i>knowledge-telling</i> rather than <i>knowledge-transforming</i></p> <p>have students write by hand in class (but consider accessibility concerns)</p> <p>increase chances for students to develop interpersonal competencies, including working with groups, asking good questions, collaborative presenting, etc.</p> <p>assign presentations, multimedia projects (audio, video, web and social media), group collaborations, experiential components</p> <p>require students to interview people, gather and analyze data, or do original research</p> <p>assign impromptu, in-process oral presentations</p> <p>experiment with new genres: storytelling, public writing, case studies, role play</p>	<p>expect more from student writing</p> <p>demand clearer, cleaner, more professional writing</p> <p>expect students to be more aware of strengths, weaknesses of a text, to know the difference between the output of a bot and the creative power of human writers</p> <p>expect more stylish writing; teach students advanced style (specialized terms, sentence variety, transitions and <i>non-transitions</i>, data design, integrating sources creatively, employing humor or metaphors or storytelling, varieties of professional response, etc.)</p> <p>expect students to fact check their work</p> <p>ask students to revise and fact check AI generators' work</p> <p>give students examples of professional work to emulate</p> <p>encourage students to <i>compete</i> with AI for the best response</p> <p>teach students "prompt engineering" to generate work, using AI as a collaborator; encourage students to refine their prompts and request revisions until they are happy with what the machine has produced</p> <p>create assignments that require competencies that have not been mastered by AI</p> <p>write a paper with AI and a separate "slow" paper without AI and reflect on the benefits of writing with and without AI</p>
assessment	
<p>assign and collect handwritten writing such as notecards for fast, informal writing</p> <p>assess students' metacognitive, reflective writing about their learning goals and context</p> <p>require students to refer to class discussions, lectures, class "inside jokes," and other live insights in their work</p> <p>get creative about assessment: assign portfolios of curated work; use "ungrading" practices like grade contracts; assign critical reflections that require students to evaluate what they have written</p> <p>ask students to evaluate—in writing or speech—things the machine can do: writing choices, writing for specific audiences, writing in genres, responding to assignment descriptions and rubrics</p>	

ask students to evaluate—in writing or speech—things the machine can't do (yet): fact-check information, evaluate sources, build authentic relationships with readers

ask students to evaluate the value of writing they produced with AI

ask students to evaluate their experience writing with AI

HOW DO LLMs INFLUENCE INFORMATION LITERACY?

Recently OpenAI, the company that created ChatGPT, [reported on an analysis](#) performed on ChatGPT-4, their most recent model (as of this writing), to determine the range of safety risks that come from using it. The list of risks is sobering. LLMs like ChatGPT can—and have—presented or invented false information, taught people how to make weapons, tricked humans into thinking an AI is human, created propaganda for hate groups, written threatening emails upon request, and produced other shocking text based on human prompts.

Of great concern to educators is the tendency of LLMs to invent (often called “hallucination”) information that is untrue (misinformation) but convincing; of equal concern is the prospect of bad actors using LLMs deliberately to produce false and damaging information (disinformation). Faculty have discovered, for example, that when we ask LLMs to produce sources for scholarly bibliographies, some of the sources do not exist, even if the answer given seems convincing and authoritative. (For more information from OpenAI on educator concerns, [go here](#).)

In a time when what has been called “[truth decay](#)” is a fact of our media environment, The Church of Jesus Christ of Latter-day Saints recently updated its General Handbook to include a section ([38.8.41](#)) on “Seeking Information from Reliable Sources.” Teaching students how to find, analyze, and use information effectively and ethically will be made even more important when more and more text is produced by LLMs.

As students use LLMs in their writing and research, they must learn to

- Study the strengths and weaknesses of LLM responses to academic inquiries
- Develop information literacy competencies [whose frameworks](#) have been developed by professional associations
- Verify information provided by LLMs by checking the sources provided and checking them against other credible sources
- Prompt LLMs to provide sources to support AI-generated assertions
- With instructor guidance, cite texts generated by LLMs like ChatGPT