Themed Article



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Abstract: This paper considers the impact of technological processes on human thought, specifically the implications of artificial intelligence (AI) on writing instruction. The main purpose of this paper is to present instructional considerations that will elevate human voice and reduce student temptations to turn to AI unreasonably to produce a piece of writing while still providing responsible options for the incorporation of AI in the writing process.

Keywords: artificial intelligence (AI), writing process, writing instruction, feedback, human thinking

Thinking. For the future of literacy education and a literate society at large, we teachers must cultivate thinking. This is no easy task. There are endless circumstances, both emotional and physical, that pull our students' minds, as well as our own, away from sustained thinking and problem solving.

If we want thinking students, we need thinking teachers. Because thinking is an essential prerequisite to writing, we need to explore the way we problem solve and both model and support sustained critical thinking, especially

now that artificial intelligence (AI) has fully emerged. We have a responsibility to understand the implications of large language models (LLMs) behind programs such as ChatGPT (2024). And we have a responsibility to our students to openly discuss benefits and drawbacks of AI while keeping our instructional emphasis on the power of human thought.

Launching my teaching career in the very years that the internet began transforming our everyday lives, I can celebrate the increased access to resources and information as well as the awareness and connectivity made instantaneously possible. Parallel to this celebration is an awareness of how the internet has rewired us all. As Carr (2011) established, the internet "grants us instant access to a library of information unprecedented in its size and scope," but it also decreases "the ability to know, in depth, a subject for ourselves, to construct within our own minds the rich and idiosyncratic set of connections that give rise to a singular intelligence" (p. 143). Our distracted brains simply have a harder time with sustained thought, something critical to the writing process. The average attention span on a screen has dropped from about 2.5 minutes in 2004 to around 47 seconds currently (Mills, 2023). The "switch cost" of moving from screen to screen and from thought to thought is more effort in the long run, especially when trying to write and having to "reconstruct" your words and thoughts each time you return to the writing task (Mills, 2023, 9:08).

As technology continues to evolve, so must our instructional strategies and priorities. For writing instruction, our

teaching must guarantee that students truly understand what I am calling "real writing"; these are thoughts created and crafted by humans so that they will have the evaluative power to navigate a world permeated with AI. How can you judge a written outcome produced by AI if you have no understanding of writing yourself?

Understanding Artificial Intelligence

To help students, teachers need to understand how AI works and examine both its potential and its limitations before we can accurately assess how to use AI as a tool for teaching and learning. According to Stanford University, intelligence can be defined as the ability to learn techniques to solve problems, and artificial intelligence is making machines that can learn similarly to humans (Manning, 2020). Through machine learning, AI will not depend on algorithms or step-by-step programming.

Machine learning starts with data—numbers, photos, or text, like bank transactions, pictures of people or even bakery items, repair records, time series data from sensors, or sales reports. The data is gathered and prepared to be used as training data, or the information the machine learning model will be trained on. The more data, the better the program. From there, programmers choose a machine learning model to use, supply the data, and let the computer model train itself to find patterns or make predictions. Over time the human programmer can also tweak the model, including changing its parameters, to help push it toward more accurate results. (Brown, 2021, What is machine learning? section)

Large language models, such as ChatGPT, are large neural networks, trained mathematical models inspired by biological neurological networks. An astonishing amount of data is used to train these neural networks. ChatGPT-3, for example, had over 175 billion parameters and was trained on approximately 500 billion words or word pieces (Breslin, 2022). The extensive training data and the capacity for predictive patterns means LLMs can generate a variety of texts and translate text into another language in addition to providing foundations for additional Natural Language Processing (NLP) tasks (Breslin, 2022).

It is easy to understand why teachers and students would be drawn to the power and benefits of AI. Watching an LLM generate text with sentence fluency and grammatical accuracy is impressive, and even useful at times. However, *real writing* requires human agency and human voice filled with humor, irony, and other emotional nuances. As sophisticated as ChatGPT-4 currently is, OpenAI (2024) still noted in the abstract to its technical report that it is "less capable than humans in many real-world scenarios" (p. 1). An LLM cannot understand or judge accuracy as a human can. It cannot *think* creatively.

It cannot *really* write. ChatGPT is a "syntax regurgitation machine" producing only writing simulations (Warner, 2023, 5:21).

Process Over Product

Current conversations with my students in corequisite English 1301 and developmental integrated reading and writing (DIRW) continue to shape my understanding about what it takes to develop thinkers and writers in a world now infused with AI. My students are those individuals beginning their college path without being college-ready: they have not demonstrated college-ready reading and writing benchmarks on assessments such as the Texas Success Initiative Assessment (TSIA). Many find reading cumbersome at best and painfully clouded and confusing at worst. Most find writing an absolute mystery. It is not an exaggeration to say that in 15 instructional weeks, I must move these students from middle-school level concepts to authentically college-level work. To develop writers, especially in a compacted time, we must value the process over and above the end product. Our teaching energy must go to coaching the thinking that writing demands, not to catching the students in acts that shortcut the writing process.

When all our focus and score points are placed only on the end product, the temptation to get to that final written draft by use of AI or other means is simply too tempting for many students. If the only thing that matters is the end, then why not take any means to get there?

Placing increased energy and focus on the writing process creates an environment and expectations where students experience natural rewards by participating in a community of learners who are open to risk-taking and problem solving when writing. For example, we begin the semester in my class with many low-stakes writings that often take five minutes or less. Students write by hand both to remove digital distractions and to increase the agility they have when working only with their own brain. And—let us be honest—the only guaranteed way to ensure it is the student's writing is to have them write in front of you with only pen and paper. Eventually, you will come to know the students' voices, which will help you detect when they have become too dependent on outside resources.

My students always know that everyone in the classroom is their audience, and the practice of peer feedback begins immediately. It takes almost no instruction for a human to simply tell another human what they think about a piece of writing. It can begin simply: Have students communicate to one another what they like about these brief writings and what they would like to know more about if there were more time to keep writing. These brief conversations about their writing can be powerful for students because they give them opportunities to explain their thinking and refine

the process of matching the words on the page to what is in their heads. Whereas a rubric or a rating is designed to answer how good the writing is, the conversations between writers open up stories that answer, "What's going on here?" (Wilson, 2018, p. 45). Knowing what is going on with a piece of writing, something that AI cannot help them do, allows students to grow as thinkers and writers.

These initial low-stakes writings partnered with opportunities for peer feedback quickly happen simultaneously in class periods where explicit skills-based instruction is occurring. Skills-based minilessons should not be "prepackaged" because you want the instruction to arise from student questions and from your observations of what students need to know next (Kittle & Gallagher, 2022, p. 16). Students will internalize and apply this just-in-time instruction far better than a scripted lesson that is out of sync with where they are in their own writing struggles. As skills-based instruction builds to longer process papers, the value of the writing process and the experience of writing is consistently elevated and celebrated.

Transforming Traditional Writing Assignments

Unfortunately, our overemphasis on writing for standardized tests is the predominant experience with writing for a lot of students. We need to remember that writing designed for a standardized assessment is going to be "fundamentally incompatible with the experiences students must have in order to develop their writing practices" (Warner, 2018, p. 63). We cannot teach students to truly write by just preparing them for a test, but we can prepare them for a test by truly teaching them to write. The text-based writing for standardized exams can still be addressed even when we transform our writing tasks into more authentic and varied writing processes. For example, the Reading Language Arts Argumentative/ Opinion Writing Rubric (Texas Education Agency, 2022) for the State of Texas Assessments of Academic Readiness (STAAR) established that the clarity, organization, evidence, and development and expression of ideas that we would want from any solid piece of writing will fulfill the expectations for the extended constructed response (ECR) on this standardized exam.

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One of the best things that may come from the increasing availability of AI is that we will be forced to rethink many writing practices that should have long ago been abandoned. The overreliance on writing formulas in preparation for standardized tests produces students who "can't imagine how a different form might better engage an audience or how changing structure might better communicate their ideas" (Kittle & Gallagher, 2022, p. 4). In this 2023-2024 school year, I have had college students who would produce all the steps in the formula they learned in high school every time we wrote anything, and they could not isolate a thesis sentence or explain how their words would be understood by a reader. They did not learn to write. They learned to plug words into a step-by-step process without much consideration for meaning. If this is all that students know of writing, then, of course, it makes sense to turn over the process to AI. Instead, we must "deliver content in a way that has contextual value and uplifts the student" and their humanity (Emdin, 2021, p. 2). Giving students some autonomy to make writing choices allows them to discover their writing strengths, to build confidence through successes with problem solving, and to differentiate the process to best fit with the way their brains work.

Text structures, such as narration, comparison, description, and cause/effect, are often underutilized in writing instruction, and text structures can be a straightforward and powerful way to equip students with writing choices that build confidence with writing practices. In The Writer's Practice, for example, Warner (2019) transported a writer back in time with just two words: cinnamon rolls. The writer needed to use their descriptive skills to fully develop a sense memory detailing where the mind goes when thinking about cinnamon rolls and all the sensations experienced while there. By writing from personal experiences, this exercise built writing confidence while sharpening the use of a descriptive text structure. Explicitly teaching text structures with brief writing exercises does not demand a lot of time, and the skillful use of text structures can improve both informational and argumentative writing, which are the demands of many standardized exams. One reason that students may not score well on extended constructed responses for STAAR or free response questions for Advanced Placement (AP) exams is that they struggle to develop their ideas fully. Text structures can help students with strategies of thought that yield more reasoning and explanation and descriptive detail.

As students begin developing longer, multi-paragraphed pieces of writing, teachers should offer dimensions beyond just a basic writing prompt. In addition to the question that the writing will answer, consider providing a problem that will be solved by answering the question as well as an audience, a process, and reflections (Warner, 2018, p. 159). When my students have been offered these additional

dimensions (see Figure 1), they've found it easier to hit their writing goals. It is simply easier to complete writing tasks when there is purpose behind it and an audience in front of it. Additional dimensions to writing prompts will also make it more difficult for a response produced from AI to measure up adequately, especially if you intentionally call for student voice. Note the difference between a response from ChatGPT and a student-developed response (see Figure 2) when exploring whether people should always have the right to wear what they want.

The ways to transform writing assignments into more authentic writing experiences are numerous. Whether it is in a two-minute Quick Write or the development of a podcast, the most important consideration will always come from those *human considerations* that drive the assignment design.

Scores Don't Teach Writing

Most of us work in systems that require grades, so we must consider how the way we grade can remove the temptation to turn to AI. An assigned grade does not teach anyone anything. Those numbers in a gradebook are a backwardslooking justification of a past outcome (Warner, 2023). Formative feedback and reflection during the process matter so much more than grades. So, the processes discussed earlier need to be part of the final assigned grade. If we value the thinking and adjustments that happen during the writing process, and we should, then we must signal to students through the grade that those things matter.

I assign a numerical grade to as few tasks as possible. Thirty percent of my college class is a process category, and almost all learning tasks are simply cataloged as

Argumentative Writing Spring 2024

Your second extended composition will be an argumentative essay that synthesizes credible sources to support your position. The goal of argumentative writing is to make and support a claim about an issue for which there can be more than one perspective. A solid argument will have convincing points even for a skeptical or disagreeable audience. In this essay, you will examine multiple perspectives, including those that counter your claim, as you logically defend and support your position.

You will be utilizing multiple modes of writing, such as definition, comparison, and cause/effect, to craft your argument. And, you will craft your writing with a variety of sentences as you continue to improve your sentence craft.

SITUATION

Free speech and the exchange of ideas are fundamental aspects of a democratic society. Your
essay will be a reasonable expression of your position, with an acknowledgement of other views,
a practice all democratic citizens should cultivate.

AUDIENCE

 You are writing to a skeptical or disagreeable audience. To not alienate or offend your audience, you must acknowledge multiple perspectives as you defend your position.

PURPOSE

You are making and supporting your claims so the audience will consider your perspective. You
do not need to completely persuade your reader to a way of thinking or to specific actions. But,
your audience should admit that you have made valid points.

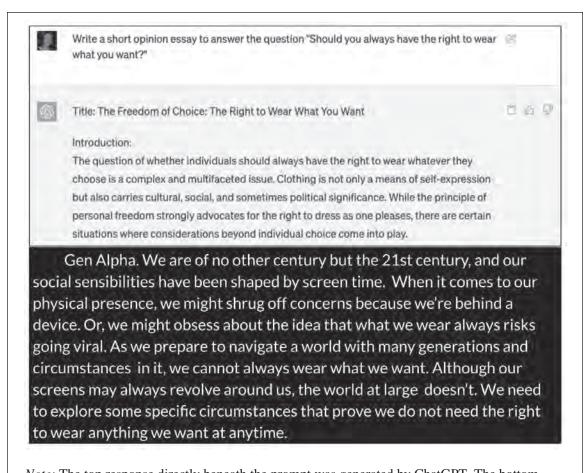
PROCESS

- March 18: Topics & Research
- March 20: Development of Argument with Cited Sources / Guided Writing Workshop
- March 25: Completed Draft Deadline / Peer Conferences
- March 27: FINAL DRAFT DEADLINE

Figure 1. Writing Assignment With Additional Dimensions

completed. I provide feedback on these items during class, during the reading and writing tasks themselves. Feedback ranked among the top 10 influences on student achievement: the "metacognitive and self-regulatory

skills of students are strengthened through feedback from the teacher" (Fisher et al., 2016, pp. 32, 100). Every few weeks, the students complete a learning process reflection where they must assess their own performance and



Note: The top response directly beneath the prompt was generated by ChatGPT. The bottom response was written and revised by a student whose audience was her peers in class.

Figure 2. ChatGPT Introduction Compared to Introduction by a Human Writer

metacognitively consider their strengths and goals. When I assign a numeric grade in the process category, it is based on their evaluation of their learning (see Figure 3). According to Hattie (2012), an emphasis on "accurate calibration" between student self-reported grades and

the actual level of achievement "is more effective than rewarding improved performance" (p. 60).

For the larger writing tasks that will allow students to synthesize a variety of skills, grades are assigned in a product category counting 70 percent of the class grade.

Week 8 - Learning Process Reflections - Grade 2 of 4

Ms. Gunn's DIRW & English 1301 Course Participation in Learning Processes (50 points) Review your "Class Progress" text feedback entries in eCampus. Week **Assignment Name Associated Reading** Feedback short answer / 2 responses / Vocab Week 5 "Heaven & Earth in Jest" "My Grandmother . . . Week 6 "Today" Phrases / perspectives / evidence "To the Police Officer. . ." Week 7 comparison writing "Linguistic Battle of the Sexes" Week 7 cause & effect writing "Tools of the Mind" "What the Fact?!" Review your numeric grades in eCampus. Grade Main Reason for Earned Grade **Numeric Grade Assignment Name** Type PROCESS (30%) Learning Reflection 1 (Weeks 1-4) PRODUCT (70%) Photo Prompt Argument Essay PRODUCT (70%) Academic Short Answers READING REFLECTIONS (10 points) Explain reading strategies from this class that have helped or will help you in reading for other classes, for general information, or for work. Be specific. WRITING REFLECTIONS (10 points) Describe what you are most proud of when writing now. Include at least one aspect of writing that you are glad to have learned. Be specific. Provide explanation.

Figure 3. Sample Learning Process Reflections

Even these product grades, however, still assess for process and growth (see Figure 4). Since my class heavily depends on discussion and collaboration, most everything the students write is happening in front of me so that I can coach and counsel the process. Even if a student did manage to produce a product with AI, they would not have evidence of a process to match that final writing product.

Navigating the Future

While we carefully design writing experiences that foster critical thinking and problem solving and develop systems of evaluation that elevate process to at least equal measure to the final product, we must also consider how we will responsibly address and utilize AI. As Schmoker (2018)

Final Written Product (50 points)	Expectations & Process (50 pts)
Final Written Product (50 points) A (50) = Written Communication is Highly Effective The ideas expressed are insightful and confident. The support is precise and clearly meaningful. (from 4 Sources) The writer demonstrates a well-reasoned response to the task. The writing is skillfully structured and fluent. The diction is appropriate and effective. The syntax is controlled and varied. Errors are almost completely absent. Minor errors do not take away from the effectiveness of the writing. B (40) = Written Communication is Clear and Proficient The ideas expressed are thoughtful. The writing is relevant and purposeful. (from 3 Sources) The writing is clear and generally fluent. The diction is appropriate and focused. The syntax is controlled. Errors are present. Minor errors do not take away from the clarity of the writing. C (30) = Written Communication is Satisfactory The ideas expressed are appropriate. The support is straightforward, perhaps even obvious. (from 2 Sources) The writer demonstrates a satisfactory response to the task. The writing is generally clear. The diction is adequate but tends to be general rather than specific. The syntax is generally correct. Errors may be frequent. Despite frequent minor errors, the writing conveys a message with understandable conventions. D (20) = Written Communication Needs Development The ideas are only somewhat relevant or are largely undeveloped. The support is inappropriate or lacking. The writer demonstrates only a partial understanding of the task.	Expectations (30) MLA format Times New Roman 12 pt Double Spaced 1" margins Heading in upper left of first page Last name and page number if upper right corner of all pages Works Cited with corresponding in-text, parenthetical citations Three pages + Works Cited Fully-developed argument Introduction Multiple Body Paragraphs with Claims, Evidence, & Reasoning Rhetorical Appeals Closing / Reflections or Solutions 2-3 writing modes skillfully utilized Narration (as evidence) Description Example / Illustration Definition Comparison Cause & Effect Academic Language Specific and concise diction Avoid 2nd person (you) Be careful with 1st person! ONLY use it when it is essential to narrative evidence. Avoid statements such as "I think," "I believe," and "in my opinion." Sentence Fluency & Variety Compound sentence Complex sentence Descriptive phrases, such as prepositional or appositive phrases
☐ The ideas are only somewhat relevant or are largely undeveloped. ☐ The support is inappropriate or lacking.	Descriptive phrases, such as prepositional or appositive phrases
F (0) = Assignment Task Not Submitted	☐ From draft to final, clear efforts to pursue writing growth

Figure 4. Sample Rubric for Final Product and Writing Process

declared, "To restore sanity to literacy instruction, we should begin by honoring its first principle: that every year, every student needs to spend hundreds of hours actually reading, writing, and speaking for intellectual purposes" (p. 116). We do not have to ban AI to accomplish these goals. In fact, students need experiences to help them understand how AI works, including how it can be misused, because they will be surrounded by generative AI programs (Roose, 2023).

We must proactively and clearly address our expectations for AI. My current syllabus includes this statement:

For the purpose of this course, assignments generated with AI tools will be considered an act of academic dishonesty. AI is an emerging tool and skillset, and you are welcome to use ChatGPT/AI tools in the following ways and will be shown how to use AI tools in these ways: (1) for help with brainstorming, and (2) for help with revising or editing. (Gunn, 2024, p. 5)

Ferlazzo (2023) has informed my practices for having students utilize AI for revising or editing (see Figure 5). If students do elect to use AI for revising or editing, then they are required to complete a reflection about the

changes made by AI. For example, I may ask them to identify a change the AI made for revision that they want to reject. Perhaps AI made a change that removed the writer's intended tone, or I may ask students to identify how specific changes to conventions made by AI would affect the reader's experience.

Turning unreasoningly to AI "may lead to a loss of creativity, critical thinking skills, and human intuition" (Marr, 2023, 5. Security Risks section), but we can strike "a balance between AI-assisted decision making and human input" (Marr, 2023, 7. Dependence on AI section). Examining reading in a digital world, Wolf (2018) recognized the dangers to society "if we do not educate our children and reeducate all of our citizenry to the responsibility of each citizen to process information vigilantly, critically, and wisely across media" (p. 201). The internet has had an undeniable effect on our brains and our learning, and AI has only begun to infiltrate the way we approach thinking and learning. We would be wise to carefully contemplate the actions we can take to ensure that future generations can evaluate AI and not have their thinking usurped by it. We must openly acknowledge that we now live in an AI world, but we do not have to sacrifice real writing because the human voice will always prevail.

"Please make light improvements in the following essay through word choice and sentence structure: [paste your essay here]:

What is a change in word choice that you want to keep? How does it improve the clarity of your message?

Specifically describe a change in sentence structure that solidified your tone. Be specific about the structure and the tone!

Discuss change(s) that you do not want to keep. Explain WHY your original style and voice is a better choice.

"Please correct any punctuation, grammar or capitalization errors in the following essay: [paste your essay here]."

Select two specific changes that ChatGPT made. How do these edits change the way your reader will process your message?

Note. Adapted from Ferlazzo (2023).

Figure 5. Al Prompts for Revising & Editing

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