

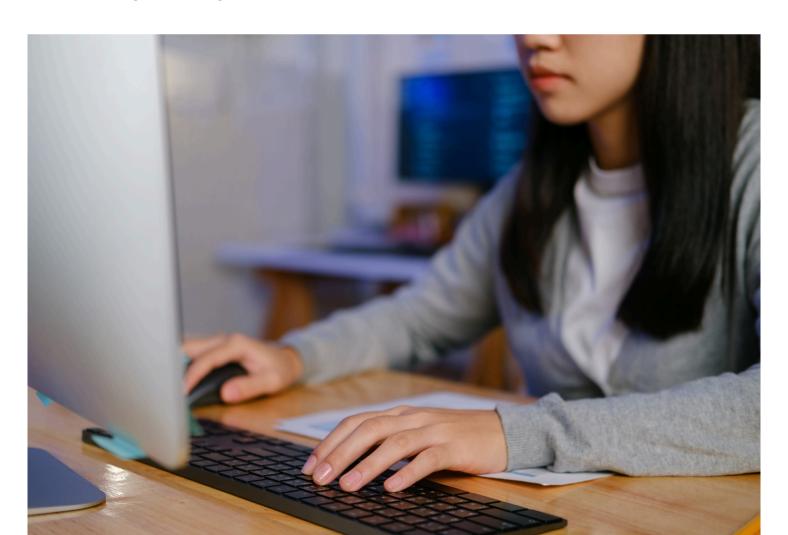
ARTICLE

Writing Instruction in the Age of Al

Implications for How Writing is Taught and Learned

A Keys to Literacy Publication by Joan Sedita April, 2025

www.keystoliteracy.com



Writing Instruction in the Age of AI

Joan Sedita, April, 2025

Introduction

Since the launch of ChatGPT in late 2022, the use of generative artificial intelligence (AI) for writing in schools has captured the attention of educators across the country. Although much remains to be learned about using AI wisely, the technology is here—and students are already using it to write their papers. As a result, educators must consider how AI will impact writing instruction and the role of writing in their classrooms.

Al is also becoming commonplace in professional work environments. In 2024, the Conference Board reported that more than half of U.S. employees—primarily office workers—use Al tools at least occasionally to complete work-related tasks. Among these users, the most common applications involve foundational text-based tasks: drafting written content (68%), brainstorming ideas (60%), and conducting background research (50%). To prepare for the workforce, students must learn how to use Al both effectively and ethically.

The integration of AI into education is not just a technological shift—it is a pedagogical one, with significant implications for how writing is taught and learned. How does the availability of AI influence writing instruction? How can students use AI to support their writing development? Will using AI diminish the cognitive and academic benefits students gain from writing as a tool for learning? And how can teachers leverage AI to enhance writing instruction? This article explores these important questions.

Just because AI can write for students doesn't mean they no longer need instruction to become proficient writers. Given that the use of AI to support student writing is still emerging, there is little research on its effectiveness for teaching and learning. However, decades of research identify best practices for writing instruction. The challenge—and opportunity—is to determine how AI can supplement, not replace, those practices.

What is AI Text Generation?

Generative artificial intelligence chatbots use large-scale language models (LLMs) to produce text. These models are trained on the statistical distribution of words, phrases, and punctuation based on massive amounts of internet-based language. This data "teaches" the model which word combinations are most likely to produce a coherent and contextually appropriate response to user prompts. Users can refine Algenerated responses by submitting follow-up questions, requests, or clarifications. Among many LLMs, ChatGPT is currently one of the most widely used in the United States (Elon University News Bureau, 2025).

It's important for students and teachers to understand that AI does not think, reason, or believe in the content it generates. While it can answer questions and organize information into lists or prose, it is not sentient—it cannot perceive or feel. AI can only summarize, synthesize, or analyze information that already exists online. It cannot determine whether the information is accurate because it operates by predicting language patterns, not verifying truth. Occasionally, AI models generate inaccurate or nonsensical responses by identifying false patterns or "hallucinations"—fabricated facts, citations, or quotations. Students need to remember that AI is not a consistently reliable source of information.

Additional Concerns

Beyond its potential to produce inaccurate information, several other concerns about AI have been raised (*Ethical Issues in AI*, 2023; Chetwynd, 2024; Stewart, 2024):

- Bias: The datasets used to train LLMs may not represent diverse viewpoints, language practices, or cultural perspectives. As a result, AI can reproduce and even amplify existing societal biases and stereotypes found in online content.
- Academic Integrity and Plagiarism: Although AI does not copy content verbatim from sources, it can produce text that resembles existing works. This raises concerns about originality and authorship. Students may unknowingly submit AI-generated content that borders on plagiarism.
- **Equity and Access**: Not all students have equal access to AI tools or the latest technology, which may lead to disparities in opportunities to develop writing skills using these resources.
- Data Privacy and Security: Al platforms collect user input, which may include personal or sensitive information. This raises ethical questions about how this data is stored, used, and shared.
- Dependency on Technology and Skill Development: Overreliance on AI for writing tasks can limit students' engagement in the mental processes required for effective writing, such as critical thinking, planning, drafting, and revising. This may hinder the development of essential writing and communication skills. Moreover, students are often required to write independently—both in and outside of school—without access to AI tools. Therefore, it is critical that they learn to express themselves through writing without depending on technological assistance.

Why Students Must Learn to Write in the Age of Al

As generative AI continues to advance, a critical distinction has emerged: students who use AI to support their writing versus those who rely on AI to write for them; this distinction is important. The availability of AI does not eliminate the need for students to learn how to write, nor does it replace the importance of explicit writing instruction. Instead, educators must guide students to use AI as a supportive tool—not a substitute—for learning to write, think critically, and communicate effectively.

Writing Supports Critical Thinking and Content Learning

Writing is not merely a final product—it is a process and a powerful tool for critical thinking that enhances students' understanding of content across all subject areas (Graham & Perin, 2007; Graham, Harris, & Santangelo, 2015; Graham et al., 2020). Research supports writing about texts and other sources to build both comprehension and writing skills (Biancarosa & Snow, 2006; Graham & Perin, 2007; Graham & Hebert, 2010). Research finds that writing about text improves reading comprehension and learning more than reading alone, rereading, or discussing (Graham & Hebert, 2010). Studies also show that students' comprehension of science, social studies, and language arts texts improves when they write in response to their reading, including writing personal reactions, analyzing and interpreting

the text, writing summaries and notes, and answering and creating questions about text in writing (Graham & Hebert, 2010; Graham et al., 2020).

As educators often say, "The one who does the work does the learning." When students write about what they are reading and learning, they are *thinking on paper* (Sedita, 2020). Writing helps them organize, clarify, and better understand information by extending their thinking and connecting new information to prior knowledge. As they write, students become more engaged, making judgments about what is most important, analyzing and evaluating information, and synthesizing information from multiple sources. Writing tasks can take the form of essays, notes, summaries, responses to prompts, or authentic writing pieces such as letters, editorials, proposals, brochures, blog posts, or résumés and cover letters.

Dr. Steve Graham (2024b) explains why it is important that students not lose the power of writing to learn:

"The power of writing resides in its use as a tool for thinking. For example, when we use writing as a tool for exploring information presented to our students visually, verbally, or in print in class, it allows them to analyze the ideas presented and provides a tool for thinking about them. Students must decide what is most important out of that information that they see, hear, or read. They must integrate that information — such as by writing a summary.

As they write, they must connect new ideas from what they're seeing, hearing, or reading with old ideas. It also forces them to reconsider information that they're working with as they transform it into their own words. At that point, it gives them (and their teachers) a sense of whether they understand the material.

Writing puts us in a position to form a personal involvement with the information as we wrestle with new concepts and must decide how to treat those new ideas. **We don't want to lose that power.**"

This holds true for creative writing as well—poetry, plays, personal narratives, fantasy, and realistic fiction. Relying on AI to generate these forms of writing deprives students of the opportunity to express themselves and develop their creative voice.

Writing Builds Long-Term Memory

Dr. Michael Hebert (2025) notes that writing fosters explicit thinking and supports memory. Rather than merely thinking about ideas, students must determine what is most important about those ideas and express this clearly in writing. Writing also encourages reflection and transformation; its permanence makes it easier to review, revise, and construct deeper understandings of ideas and information.

In contrast, when students rely on AI to generate writing, they become passive consumers. This dependence robs them of the opportunity to rehearse content, reflect on their learning, and build long-term understanding. Educators must ensure that AI remains a *support* for writing, not a replacement for thinking (Graham, 2024a). For example, note-taking and summarizing are essential tasks for writing to learn. When students create their own notes or write summaries—whether from a text, lecture, or video—they process and internalize information in a way that copying or pasting AI-generated content cannot replicate.

Writing Improves Reading Skills

As noted in the *Writing to Read* research guide, teaching students how to write strengthens their reading comprehension, fluency, and word reading skills (Graham & Hebert, 2010). The act of composing text helps students gain insights that support text reading, causing them to be more thoughtful readers, more attuned to how meaning is constructed. Research shows that instruction in the writing process (planning, drafting, revising), sentence construction (including sentence combining), paragraph development, and text structures improves reading comprehension. Moreover, teaching spelling and sentence construction supports reading fluency, and spelling instruction specifically improves word recognition.

Writing Demonstrates Learning

Writing is a form of formative assessment that allows teachers to evaluate students' depth of understanding. It can serve both formal grading and instructional planning purposes. Writing tasks such as quick writes, summaries, journal entries, note-taking, responses to teacher-generated prompts, or essay questions on tests allow students to demonstrate their grasp of content. To complete these tasks independently, without relying on AI, students need foundational writing skills. Exceptions may include adaptive technologies such as speech-to-text, spelling checkers, or grammar checkers for students with disabilities like dyslexia or dysgraphia.

Writing Serves Multiple Purposes in Life

Beyond academic assignments, writing serves many purposes in everyday life (Hebert, 2025; Graham, 2024b). People write to communicate with family, friends, and colleagues (emails, texts, and letters), to share personal stories (memoirs, biographies), to inform (articles, blog posts, slide presentations), to persuade, and to entertain. Writing is also needed to complete forms, such as job and college applications. Writing also provides a space for emotional expression and self-discovery through journals or diaries. These deeply human acts—expressing emotion, developing a personal voice, and conveying lived experience—cannot be authentically replicated by AI. While AI may refine writing, it cannot replace the writer's unique perspective, creativity, and voice.

The Writing Rope: Al and Multiple Writing Components

The Writing Rope framework (Sedita, 2019; Sedita, 2023) provides an instructional framework that supports writing instruction across all grade levels. A substantial body of research identifies effective instructional practices for teaching writing, many of which are represented in this framework (Graham & Perin, 2007; Graham & Hebert, 2010; Graham et al., 2012; Coker & Ritchey, 2015; Graham, Harris, & Santangelo, 2015; Graham et al., 2016). The Writing Rope organizes the essential skills, strategies, and techniques students must master to become proficient writers into five interwoven components, represented as strands in a rope: critical thinking, syntax, text structure, writing craft, transcription. Students develop proficiency by activating and integrating the skills within each strand. Although Al tools can support the use of these skills and strategies, they cannot replace the need for students to learn how to independently integrate and apply them when writing.

The five strands are described below, along with commentary on how AI may support—but not substitute for—student learning.

Critical Thinking:

Students engage in critical thinking as they decide what they want to communicate and build background knowledge on a writing topic. This strand also includes understanding the writing process: thinking, planning, writing, and revising. During the thinking stage, students benefit from explicit instruction in brainstorming strategies and in gathering information from written and multimedia sources, including note-taking and summarizing. Instruction in planning strategies, such as the use of graphic organizers, helps students structure their ideas. They should also develop metacognitive awareness and work intentionally through the recursive stages of the writing process, supported by direct instruction in revising and editing.

Al can assist at each stage of the writing process, but it must be used judiciously. Over-reliance on Al may deprive students of the benefits that come from using writing as a tool for learning. Students must develop the ability to make decisions about the ideas to include in their writing, synthesize information from multiple sources, organize ideas before drafting, and express those ideas in their own words. Suggestions for using Al to support each stage of the writing process are provided later in this article.

Syntax

Sentences are the building blocks of written expression. A strong understanding of sentence structure supports both comprehension and effective communication when speaking or writing. Explicit instruction in sentence-level skills—such as sentence combining and elaboration—lays the foundation for fluency and clarity in writing.

Al can provide feedback to help students improve their sentences, but they must still learn to craft clear, concise, and well-developed sentences on their own. Writing strong sentences requires students to think critically about the ideas they want to convey, how those ideas relate to one another, and how to express them using precise language. Mastering sentence construction enhances students' ability to articulate complex thinking.

Text Structure

Text structure is a defining feature of written language. Understanding its multiple layers strengthens both reading comprehension and writing development. Students benefit from direct instruction in the following areas:

- Types of writing structures: Recognizing the features of narrative, informational, and opinion/argument structures, including how to organize introductions, body paragraphs, and conclusions.
- Paragraph structure: Organizing paragraphs around a main idea supported by relevant details.
- **Patterns of organization**: Incorporating formats such as description, sequence, cause and effect, compare and contrast, and problem and solution in writing pieces.
- **Transitions**: Using appropriate words and phrases to connect sentences, paragraphs, and sections of text, as well as signaling specific patterns of organization.

Al can support students by suggesting organizational improvements, headings, transition words, and paragraph groupings. However, students must first develop a foundational understanding of writing structures and patterns of organization. Only then should Al tools be used to refine their writing.

Writing Craft

This strand focuses on the stylistic and rhetorical elements that make writing engaging and effective. Often referred to as "writer's craft" or "writer's moves," these include:

- Word choice: Selecting vocabulary, dialogue, and phrasing to convey meaning and tone.
- Writer's voice: Expressing individuality, emotion, and point of view through style and tone.
- **Literary devices**: Using literary elements (e.g., plot, setting, characters, theme) and techniques such as imagery, figurative language, personification, alliteration, allegory, irony.

This strand also emphasizes consideration of task, audience, and purpose, which shape decisions about tone, length, structure, and style.

When students draft their own writing, their unique voice and style emerge through word choice and literary techniques. If AI generates a draft or significantly revises their work, this personal voice may be diluted or lost, replaced by generic language drawn from AI training data. Students must learn to make intentional stylistic choices and maintain ownership of their writing.

Transcription

This strand includes foundational skills such as spelling, handwriting, and keyboarding, all of which are necessary for translating thoughts into written words. When students develop fluency and automaticity in transcription, they can devote more cognitive resources to higher-order tasks like composing and revising.

Al can be especially helpful in supporting spelling and basic editing—particularly for students with dyslexia, other learning disabilities, or those still learning English orthography. Tools like spell-checkers and speech-to-text can reduce the cognitive load and allow these students to focus on content and organization.

How Students Can Use AI to Support Their Writing

Key Competencies for Effective AI Use

Dr. Mark Warschauer, Director of the University of California's Digital Learning Lab, and his colleagues study the use of generative Al in education. They suggest that students need to develop competencies in five key areas related to using Al—understand, access, prompt, corroborate, and incorporate—as described below (Tate et al., 2022, pp. 8–9):

1. **Understand:** Students should develop a basic understanding of how large language models and AI writing tools function, including their strengths, limitations, and potential biases. While they do not

need to grasp the technical details of the algorithms, they should understand the factors that influence Al-generated output.

- 2. Access: Students must be able to access and navigate AI writing tools to support specific communication tasks, such as writing papers or emails, creating slide presentations, or gathering background information. Many tools beyond ChatGPT are available, including grammar checkers (e.g., Grammarly) that identify issues related to grammar, spelling, and punctuation and suggestions to improve writing; and research tools (e.g., Elicit) that scan large databases of research papers to answer questions.
- 3. **Prompt:** Students should learn how to craft effective prompts that guide AI to generate relevant and high-quality content. Strong prompts require both familiarity with the tool and an understanding of the subject matter, as well as critical thinking skills.
- 4. **Corroborate:** Students must recognize that Al-generated content may include inaccuracies or fabricated sources. They should learn to verify the accuracy of Al output and confirm any references provided.
- 5. **Incorporate:** Students need to understand how to ethically and effectively incorporate Al-generated content into their own writing. This includes clearly acknowledging and citing the use of Al tools in the writing process.

Using AI at Each Stage of the Writing Process

The stages of the writing process represent the steps that effective writers follow (Hayes, 1996; Hayes, 2004; Graham et al., 2012). This process is one of the instructional topics in the Critical Thinking strand of the Writing Rope framework. Research consistently confirms that explicit instruction in strategies to support each stage of the writing process can improve the quality of student writing (Graham & Perin, 2007; Graham et al., 2016). Keys to Literacy developed a model to help students remember these stages: Think, Plan, Write, Revise (Sedita, 2020). Suggestions for using Al are provided below for each stage of the writing process. These suggestions and sample prompts are intended as starting points—students need to revise and refine their prompts through trial and error.

It is important to remember that students need explicit instruction, modeling, and guided practice to learn how to use AI appropriately, without crossing into having AI compose the text for them. They need support to avoid over-relying on AI to generate their writing. Instruction should focus on teaching students how to think critically about their writing so they can use AI to enhance the writing they produce independently.

Think Stage	
At the Think stage, writers identify the audience and purpose for a writing task. They determine the topic they will write about and what they want to say. This includes brainstorming ideas and gathering information into notes.	
Use AI to:	Sample Prompt

Narrow the scope of a writing topic.	What are some appropriate writing topics for grade _(grade level)_ related to the subject of?
Build knowledge about the topic.	Generate a _(number of words)_ text with topics and essential information related to
Brainstorm ideas.	Help me brainstorm ideas for a _(grade level)_ composition about
	Students can pose follow-up questions to deepen their understanding.
Identify sources	Help me identify online sources to learn more about for grade Include links to the sources.
	Al-generated sources should be reviewed for accuracy and relevance.
	Al tools such as Elicit can support high school students in locating and organizing research sources for research papers, as well as synthesizing research, extracting key details from research papers, and formatting citations and reference lists.

Keep in mind:

- Al-generated responses are a starting point. Student still need to apply critical thinking to develop their ideas.
- Students need to remember that Al-generated content may be inaccurate or lack proper citation.
- Students should consult additional sources, including those provided by teachers or found through traditional research methods.
- Students benefit from taking their own notes and writing their own summaries.

Plan Stage

At the plan stage, writers organize the ideas and information they have gathered and decide how to structure their writing. This includes creating a pre-writing outline or graphic organizer. Students may also need to gather additional information as needed.

Use AI to:	Sample Prompt
Confirm the logical progression of ideas.	Is there a better way to organize this information for this argument/informational/narrative composition?
Improve on an outline.	How could I improve the outline for this argument/informational/narrative composition?
Identify missing information.	What is missing from this outline about?

Keep in mind:

• Students should first try to organize their ideas independently. Then, they can compare their structure to AI suggestions and revise accordingly.

Write Stage

During the Write stage, students generate a first draft based on their plan. They expand ideas into sentences and paragraphs, typically starting with an introduction, ending with a conclusion, and structuring the body in a logical way.

Using AI to generate drafts is one of the most controversial aspects of generative AI. It's important to keep in mind the principle: "The one who does the work does the learning." Ideally, students should write their own first draft, as this is where critical thinking and idea development take place. AI is best used after the student has written a draft, as a tool for feedback and revision. Students can ask AI to suggest improvements to their writing. They can then compare the AI-generated suggestions to their original draft and analyze whether the recommendations are appropriate. This process helps students learn how to strengthen their writing. In this way, AI can serve as a writing coach, offering feedback that guides students in refining their work.

Use AI to:	Sample Prompt
Ask for feedback.	What two things could I focus on to improve this composition?
	How can I improve the introduction/conclusion in this composition?
	How could I improve my word choice or vocabulary?
	Give me feedback in list form of how this written draft can be improved. Include these elements: grammar and sentence structure, organization, consistency of style, overall suggestions.
Evaluate the organization and flow.	How can I improve the organization of this composition?
	How well did I use transition words and phrases in this composition?
Improve paragraph structure.	How can I improve the structure of the paragraphs in this composition?
Improve the sentences.	How can I improve the sentences in this composition?

Keep in mind:

• Al-generated revisions should support, not replace, the student's original ideas.

- Al can help students improve sentence clarity and flow but should not replace the process of crafting their own sentences.
- Al can help students improve paragraph structure, but students should make initial decisions about when a shift in main ideas requires a new paragraph.
- Students should compare their draft with the AI revision line-by-line, analyzing the strengths and weaknesses of their draft. Explicit instruction and guided practice are needed for most students before they can do this independently.
- Al may produce inaccurate information ("hallucinations") that must be fact-checked.
- Al may alter the student's voice, tone or style. Students should evaluate whether the Al output reflects their own style and grade level.

Revise Stage

In the Revise stage, writers improve the content, organization, and language of their draft, followed by proofreading for spelling, punctuation, and grammar. Using AI for revision is a good example of how AI can support writing without replacing essential writing skills.

Use AI to:	Sample Prompt
Identify spelling and punctuation errors.	Identify spelling and punctuation errors in this composition.
Correct grammar errors.	Check the grammar in this composition.
Assist with references.	Check the formatting of the in-text citations. Check the formatting of the bibliography/reference list.

Keep in mind:

- One advantage of Al-generated feedback is immediacy. Students can revise in real time, receiving
 personalized feedback without waiting for a teacher or peer.
- Al support for spelling and grammar is especially helpful for students with dyslexia or languagebased learning difficulties. Knowing they can use AI to check mechanics can help reduce anxiety and encourage writing.

How Teachers Can Use AI to Support Writing Instruction

Al can support writing instruction by helping teachers provide more efficient, personalized feedback to students about their writing.

Mentor Text

Sharing models of writing—also known as mentor texts or writing exemplars—is a highly effective instructional practice (Graham & Perin, 2007; Graham, Harris, & Santangelo, 2015). Mentor texts

provide examples of elements such as style, language, organization, or specific writing techniques. These examples are analyzed with students, who are then encouraged to emulate them in their own writing.

Common focus areas for mentor texts include: narrative, argumentative, or informational text structures; writing effective introductions and conclusions; using transition words; incorporating academic vocabulary; creating voice; crafting strong sentences and paragraphs; including text features such as headings; using figurative language or dialogue in narrative writing; stating a claim in argument writing; and citing evidence.

One common challenge teachers face is locating appropriate mentor texts. It can be time-consuming to find one or more examples at the right grade level that strongly illustrate the desired writing focus. Generative AI can assist by creating customized mentor text samples. Examples of AI prompts include:

•	Find a one-paragraph excerpt for grade that demonstrates how to begin a paragraph with a topic sentence on the topic of				
•	Find an example of a four- or five-paragraph composition on for grade that includes a well-crafted introduction and conclusion.				
•	Find an example of a multi-paragraph cause-and-effect composition for grade that includes transition words about List the transitions used in the passage.				

An example of an online tool that helps teachers generate mentor text is <u>The Writing Pathway at Teaching Lab</u>. This site offers a free Al-powered feature that generates examples of mentor texts for basic and complex sentence construction, paragraph writing, and various skills for informational, opinion, or narrative writing. Teachers can input a description of the lesson content and target reading level, and the tool generates customized mentor text.

Creating Sources

Teachers can use AI to locate relevant sources by prompting a chatbot to identify materials on a specific topic and grade level. AI can also be used to generate source materials, such as rewriting complex texts to match students' grade levels, summarizing multiple sources, or creating background information related to literature that students may be responding to in writing. However, teachers should always review AI-generated content for accuracy and ensure that original sources are cited properly.

Grammar and Spelling Checks

Al tools like Grammarly can automate routine tasks for teachers and students such as checking grammar, spelling, and punctuation in student writing. This allows teachers to spend more time providing meaningful feedback on the content and organization of student work.

Grading Papers and Providing Feedback

Al can help teachers save time grading papers and deliver timely formative feedback. While the use of Al for grading is still emerging, research indicates that automated essay scoring can serve as a helpful alternative or supplement to human evaluation. In one recent study, human feedback was found to be

slightly better than ChatGPT's, though the difference was modest (Steiss et al., 2024). Another study reported that feedback from humans and AI was substantially consistent (Tate et al., 2024).

It is important to remember that reviewing and grading student writing provides teachers with valuable insight into what students are thinking and learning. Therefore, teachers must be careful not to rely solely on AI to provide feedback to students. While AI can assist by identifying trends in individual student's or groups of students' writing, which can help target instruction or guide scaffolds, it should not replace the teacher's role in the feedback process. For example, if a teacher is working with students on skills such as combining sentences, writing stronger topic sentences for paragraphs, or stating a clear claim in an argument essay, direct teacher feedback remains essential.

Instructional Implications

Given schools' relatively recent access to generative artificial intelligence (AI), it is not surprising that many educators have concerns about how students will use AI, how it affects the skills students need to develop as proficient writers, and what this means for writing instruction.

The most effective way for teachers to address these concerns is by experimenting with platforms like ChatGPT. Hands-on experience provides an opportunity to better understand how generative AI works, its capabilities, and its potential for supporting student writing. For example, teachers can use ChatGPT to generate writing prompts, brainstorm lesson ideas, and provide feedback on samples of student writing. By becoming comfortable with AI as a professional tool, teachers will be better prepared to guide students in using it effectively and responsibly.

Suggestions for addressing AI when teaching and assigning writing:

Teach students about AI, how it works, and the ethical implications of its use.

- Explain what AI is, how it works, and its limitations.
- Emphasize that AI does not think. It identifies patterns in existing language and generates responses based on those patterns.
- Discuss concerns related to AI use, including bias, academic integrity, data privacy, and the risk of students over-relying on AI for generating writing.
- Teach the value of originality and the importance of contributing their own ideas when writing.

Reinforce writing as a thinking and learning tool.

- Explain how the critical thinking, reading, and revision during the writing process lead to deeper learning.
- Clarify the purpose of writing assignments, emphasizing when AI should not replace the student's own thinking. Encourage students to generate examples of when using AI makes sense and when it hinders learning.
- Focus on all stages of the writing process, not just the final product.
- Require students to document how they use AI during the Thinking, Planning, Writing, and
 Revising stages of the writing process. This could include sharing brainstorming notes from the
 Thinking stage, submitting outlines and graphic organizers from the Planning stage, providing
 drafts before and after AI use, or submitting a brief explanation describing how AI supported
 their writing when turning in final drafts.

Equip students with practical strategies for using AI meaningfully, ethically, and selectively.

- Teach students how to use AI tools effectively and ethically.
- Explicitly teach students how to evaluate Al-generated output. Analyze examples together to identify where Al supports the writing process (e.g., brainstorming, organizing, revising) and where it falls short.
- Model and think aloud about the effective and thoughtful use of AI during writing tasks.

Set clear expectations for AI use and diversify writing tasks to promote originality.

- Establish a clear classroom policy regarding acceptable AI use. Be explicit about guidelines, boundaries, and potential consequences.
- Include specific directions in writing assignments about when and how AI can be used.
- Assign alternative writing tasks that combine writing with digital, visual, or auditory literacies (e.g., creating infographics, websites, or multimedia presentations). These forms of expression are less easily replicated by AI and require students to think critically and communicate original ideas.

Writing Instruction Remains Essential

As schools navigate the rapidly evolving landscape of generative AI, it is important to remember that writing instruction is more essential than ever. While AI can be a powerful tool to support the writing process—from brainstorming and planning to revising and editing—it cannot replace the deep learning that occurs when students do the work of writing themselves. Students still need to learn how to generate and express their own ideas, craft clear and coherent sentences and paragraphs, and structure their writing effectively. These skills are critical for academic success.

Educators play an important role in helping students understand how to use AI to support their writing without allowing it to replace their own thinking and creativity. Providing clear guidelines, designing purposeful assignments, and offering explicit instruction in the ethical and effective use of AI ensures that students remain active participants in the writing process. Ultimately, the goal is to develop skilled, reflective writers who view AI as a tool for learning and communication—not a shortcut around it.

References

Biancarosa, C., & Snow, C. E. (2006). Reading next—A vision for action and research in middle and high school literacy: A report to Carnegie Corporation of New York (2nd ed.). Washington, DC: Alliance for Excellent Education.

Chetwynd, E. (2024). Ethical use of artificial intelligence for scientific writing: Current trends. *Journal of Human Lactation*, 40(2).

Coker, D. J., & Ritchey, K. D. (2015). Teaching beginning writers. New York: The Guilford Press

Majority of US workers are already using generative AI tools (2024). The Conference Board. https://www.conference-board.org/press/us-workers-and-generative-ai

- Elon University News Bureau (2025). Survey: 52% of U.S. adults now use AI large language models like ChatGPT. Elon University. https://www.elon.edu/u/news/2025/03/12/survey-52-of-u-s-adults-now-use-ai-large-language-models-lie-chatgpt/
- Ethical Issues in AI (2023). Carleton College. https://www.carleton.edu/writing/resources-for-faculty/working-with-ai/ethical-issues/
- Graham, S., & Perin, D. (2007). Writing next: Effective strategies to improve the writing of adolescents in middle and high schools A report to Carnegie Corporation of New York. Washington, DC: Alliance for Excellent Education.
- Graham, S. and Hebert, M.A. (2010). Writing to read: Evidence for how writing can improve reading. A Carnegie Corporation Time to Act Report. Washington, DC: Alliance for Excellent Education.
- Graham, S., Bollinger, A., Booth Olson, C., D'Aoust, C., MacArthur, C., McCutchen, D., & Olinghouse, N. (2012). *Teaching elementary school students to be effective writers: A practice guide* (NCEE 2012- 4058). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.
- Graham, S., Harris, K.R., & Santangelo, T. (2015). Research-based writing practices and the Common Core: Meta-analysis and meta-synthesis. *The Elementary School Journal* 115 (4). (pp. 498-522
- Graham, S., Bruch, J., Fitzgerald, J., Friedrich, L., Furgeson, J., Greene, K., Kim, J., Lyskawa, J., Olson, C.B., & Smither Wulsin, C. (2016). *Teaching secondary students to write effectively* (NCEE 2017-4002). Washington, DC: National Center for Education Evaluation and Regional Assistance (NCEE), Institute of Education Sciences, U.S. Department of Education.
- Graham, S., Kiuhara, S. A., & MacKay, M. (2020). The effects of writing on learning in Science, Social Studies, and Mathematics: A meta-analysis. *Review of Educational Research*. 90, (2).
- Graham, S. (2024a). *In the age of AI, why even teach writing?* Presentation delivered at the 2024 Writing Symposium, Collaborative Classroom. https://info.collaborativeclassroom.org/in-the-age-of-ai-with-dr.-steve-graham-on-demand-webinar?submissionGuid=de86f4d4-46cf-449c-930b-f2b0b9e025f5
- Graham, S. (2024b). Why should we teach writing in an age of artificial intelligence? Inspired Ideas, McGraw Hill. https://medium.com/inspired-ideas-prek-12/why-should-we-teach-writing-in-the-age-of-artificial-intelligence-c49c50300584
- Hayes J.R. (1996). A new framework for understanding cognition and affect in writing. In C.M. Levy & S. Ransdell (Eds.) *The science of writing: Theories, methods, individual differences and applications* (pp. 1-27). Mahwah, NJ: Erlbaum.
- Hayes, J.R. (2004). What triggers revision? In L. Allal, L. Chanquoy, & P. Largy (Eds.), *Studies in writing: Vol. 13. Revision: Cognitive and instructional processes* (pp. 9-20). Norwell, MA Kluwer.

- Hebert, M. (2025). *Using writing as a tool for improving reading and learning*. EdWeb webinar February 8, 2025. https://media.edweb.net/edWebinar/?view=20250206edwebnet15
- Sedita, J. (2019). The strands that are woven into skilled reading. Retrieved from: https://284ivp1abr6435y6t219n54e wpengine.netdna-ssl.com/wp-content/uploads/2020/02/The-Strands-That-Are-Woven-Into-Skilled-WritingV2.pdf
- Sedita, J. (2020). Keys to content writing. Rowley, MA: Keys to Literacy.
- Sedita, J. (2023). *The writing rope: A framework for explicit writing instruction in all subjects.* Baltimore, MD: Paul H. Brookes.
- Steiss, J., Tate, T., Graham, S., Cruz, J., Hebert, M., Wang, J., Moon, Y., Tseng, W., Warschauer, M., & Olson, C.B. (2024). Comparing the quality of human and ChatGPT feedback of students' writing. Learning and Instruction 91.

 https://www.sciencedirect.com/science/article/pii/S0959475224000215?casa_token=ZwNHiz35_iEcAAAAA:mi-n0tUaFGsLh215DFyzBAAwvTrRsb_Njnv8q1UtO1CsPohCmp5q-NN1020nN10gXOz9m5-dv
- Stewart, K. (2024). *The ethical dilemmas of AI*. USC Annenberg School for Communication and Journalism. https://annenberg.usc.edu/research/center-public-relations/usc-annenberg-relevance-report/ethical-dilemmas-ai
- Tate, T., Doroudi, S., Ritchie, D., Xu, Y, & Warschauer, M. (2022). *Educational research and Al-generated writing: Confronting the coming tsunami.* (preprint) https://osf.io/preprints/edarxiv/4mec3 v1
- Tate, T., Steiss, J., Bailey, D., Graham, S., Moon, Y., Ritchie, D., Tsend, W., & Warschauer, M. (2024). Can Al provide useful holistic essay scoring? Computers and Education: *Artificial Intelligence 7*. https://www.sciencedirect.com/science/article/pii/S2666920X24000584