

Educational Impacts & Benefits of AI

Collectively considering the educational impacts of Artificial Intelligence

OVERVIEW & PURPOSE

Educators across the globe are considering how Artificial Intelligence will continue to shape the educational experience of learners now and in the future. This document serves as a place to collect resources for further discussion within TTSD and beyond.

ODE, TTSD & IB GUIDANCE

For a quick overview of the most crucial guidance, see the [TTSD AI Guide for Educators](#). For more check out the Oregon Department of Education [Generative Artificial Intelligence \(AI\) in K-12 Classrooms](#) guide. Both contain best practices and resources for educators planning to introduce students to AI. Like the ODE and TTSD, the International Baccalaureate organization has also decided it will not ban the use of AI, and will instead encourage the responsible use of AI ([IB blog](#)).

LINKS TO AI GENERATORS

1. ChatGPT Text Generator <https://chat.openai.com/>
2. [Bing Chat](#)
3. [Google Gemini](#)
4. PhotoMath <https://photomath.com/en>
5. [Comparison Chart with More Options](#)

FIRST THOUGHTS

Initial thoughts and responses. More likely to be triggered or influenced by implicit bias, fears, or negative lived experiences.

- Do students primarily use AI-generated text and other AI technology to cheat?
- How can educators prevent students from using AI-generated text altogether?

SECOND THOUGHTS

Regulated and informed thoughts developed to pacify, refine, and advance first thoughts.

- How can AI be leveraged to support students of varied abilities and backgrounds?
- How can we encourage students to use generated text safely and responsibly?
- How can we systematically include artificial intelligence in curricula?
- Could lessons be prepared or acquired regarding AI and machine learning awareness and responsible utilization in preparation for ODE's 2027-2028 Computer Science implementation?
- Which tasks can/should we eliminate through technology integration?

SAFE DEMONSTRATIONS

Here are some tips for safely sharing generated content in your classroom and beyond.

- Consider avoiding generating text, images, and content live on a display in class
 - If you'd like students to see the magic in action, you can record the screen as it is generating so you can review the video prior
 - If you believe that live generation is the best fit for the task at hand, intervene immediately if bias, inaccuracies, or hate speech is generated
- Review generated content for bias and accuracy before presenting it to students
 - If biases or inaccuracies are detected in generated text or content, determine an appropriate mitigation response before sharing the content
 - Learning for Justice: [Speak Up at School](#)
 - Anti-Defamation League: [Responding to School-Based Bias Incidents](#)
 - If inaccuracies are detected in generated text or content, pair the content with reputable content that corrects the inaccuracies

IMPACT OF GENERATED TEXT

The resources below explore the potential impacts of generated text organized by theme. Some of these articles may include ads or a paywall pop-up. Individuals may bypass these using the browser's [reader mode](#) or [12ft.io](#).

Systematic Change

What practices are worth keeping and which should go?

- The Atlantic: “The End of High School English”
 - a. ChatGPT can generate standard, informative texts easily
 - b. Consider leaning into philosophy and discussion instead of asking students to write content similar to what is easily generated by technology
- The Atlantic: The College Essay is Dead
 - a. “The connection between humanism and technology will require people and institutions with a breadth of vision and a commitment to interests that transcend their field. Before that space for collaboration can exist, both sides will have to take the most difficult leaps for highly educated people: Understand that they need the other side, and admit their basic ignorance.”
- Author John Warner: “ChatGPT Can't Kill Anything Worth Preserving”
 - a. Mundane writing tasks have been unproductive for many learners
 - b. Make the work worth doing.
- Education Gadfly: Artificial intelligence is not the end of high-school English
 - a. Analyzed in Marshall Memo 966
 - b. “If it can come up with an essay that you would consider a good piece of work, then that prompt should be refined, reworked, or simply scrapped.”

Citation and Plagiarism

How can educators teach students to cite and incorporate AI responsibly to mitigate plagiarism and cheating concerns? How should the use of AI-generated text be disclosed?

- Ditch That Textbook: It's time to rethink “plagiarism” and “cheating”
 - a. Infographic helps differentiate between bot and student-created content
- MLA Style Center: How do I cite generative AI in MLA style?
 - a. “Cite a generative AI tool whenever you paraphrase, quote, or incorporate into your work any content (whether text, image, data, or other) that was created by it”
 - b. “Acknowledge all functional uses of the tool (like editing your prose or translating words) in a note, your text, or another suitable location”
 - c. “Take care to vet the secondary sources it cites”
- JAMA Network: “Nonhuman “Authors” and Implications for the Integrity of Scientific Publication and Medical Knowledge”

- a. Requires researchers to disclose when AI is used
 - b. Outlines required AI attribution protocols for researchers to follow
- Jennifer Gonzalez (Cult of Pedagogy): Teaching Students to Avoid Plagiarism
 - a. Do not assume plagiarism is blatant and devious, it is often ignorance
 - b. Provide direct instruction (Five exercises are provided)
 - i. Help students identify plagiarism
 - ii. Provide opportunities for students to cite sources correctly
 - c. Though this article doesn't specifically call out AI-generated text, the principles can be applied to generated text easily
 - i. If generated text is likely detected, provide directions for improvement and an opportunity for students to correct their work
 - ii. Practice AI-generated text identification together in class
 - d. ChatGPT is included in Cult of Pedagogy's 2023 Teacher's Guide to Tech

Fact-Checking & Lateral Reading

How can we help students understand that technologies may generate or produce inaccurate content?

- Promote Fact Checking
 - TTSD Fake Media Fact-Checking Guide
- Promote Lateral Reading
 - OSLIS Video

Implications and Disruption

What implications should educators prepare for?

- Catlin Tucker Blog Post: "How Disruptive Will ChatGPT Be?"
 - a. "If teachers design student-centered learning experiences that allow students to write with support in class, ChatGPT won't be nearly as disruptive as some articles claim."
- Catlin Tucker Podcast: Disruptive Technology: ChatGPT and Education
 - a. Both students and staff want to find shortcuts that allow them to have more free time at home and in school
 - b. Lectures and homework are proving to be less and less effective
 - c. Rethink homework - is it necessary?

- i. Assigning homework is not equitable
 - ii. Student work is easier to monitor if writing tasks are in class only
- d. Technology is continuing to evolve
 - i. Many types of AI will be utilized across disciplines

Solutions and Advice

What advice do professionals and experts offer?

- Ditch that Textbook ChatGPT, Chatbots and Artificial Intelligence in Education
 - a. Thorough resource, organized in the following six sections:
 - i. Define ChatGPT, GPT3, chatbots, and AI
 - ii. Implications for the classroom and education
 - iii. How to teach tomorrow knowing this exists
 - iv. 20 ways to use this as a tool for teaching/learning
 - v. Should we block it or try to ban it?
 - vi. More resources to learn about this
- AJ Juliani blog post: Creative Learning Solutions in a ChatGPT World
 - a. The educational impacts of AI go beyond language arts
 - i. Apps like PhotoMath can be used to solve Math problems as well
 - b. Options from one department facing the Math problem:
 - i. Give no required homework, only optional challenges
 - ii. Flip the classroom (watch instructional videos for homework)
 - iii. Have students create their own video tutorial (screencasts) explaining how they solve problems (they chose this option)
- NBC: “New Bot ChatGPT Will Force Colleges to Get Creative...”
 - a. “There’s always been this concern that technologies will do away with what people do best, and the reality is that people have had to learn how to use these technologies to enhance what they do best.”— Lauren Klein
- Wired: 3 Ways to Tame ChatGPT
 - a. AI regulation and policy are crucial for responsible development
 - b. “Transparency in the foundational models is critical to enabling researchers and the entire downstream supply chain of users to investigate and understand the models’ vulnerabilities and biases.”
- Stanford: Language Models are Changing AI. We Need to Understand Them
 - a. Holistic evaluation is necessary for building transparency
- New York Times Opinion: What Would Plato Say About ChatGPT?

- a. “Value people as people, not just bundles of skills”
- Torrey Trust, Ph.D. ChatGPT & Education One-pager
 - a. “Assign homework that can’t be googled or replicated by AI.”
 - i. Focus on multimodal assignments
 - b. “Engage students in a critical interrogation of how ChatGPT responds to writing prompts.”
 - i. Search the internet for resources referenced in AI-generated docs
 - ii. Revise generated text to include reputable sources

Augmentation and Adaptation

How can AI be used creatively to advance human capabilities?

- NPR Audio: Has AI reached the point where a software program can do better work than you?
 - a. Multiplies the user’s ability and capacity to do work in a given timeframe
 - b. Provides users with a collective summary of information
 - c. Provides starter texts or documents that can be adjusted and fact-checked, which may help mitigate procrastination and writer’s block
 - d. May replace human workers, but also may free up time for other tasks
- Inside HigherEd: Machines Can Craft Essays. How Should Writing Be Taught Now?
 - a. Recommends “AI literacy training that offers guidance on its responsible use and susceptibility to bias”
 - b. “writing with computational assistance may be a collaboration—albeit with a nonhuman entity—that demands active intellectual labor on the part of the human.”
 - i. AI may help with idea generation, drafting, and honing skills
 - ii. Some AI appears to adapt to resemble or anticipate users’ thoughts
 - c. “If the training (data)sets underrepresent the views of marginalized populations, then the essays they produce may omit those views as well.”

Educational Uses

What are some ways that teachers can use AI in the classroom?

- Canva for Education AI Tools
 - All TTSD staff can use Canva Magic Write: Canva’s version of ChatGPT
 - This feature is not available on student accounts due to age limits

- Allows teachers to model the appropriate use of generated text without signing up for ChatGPT (which requires a phone number)
 - TTSD students can use the Text to Image AI tool and a few other AI tools
- 80 Ways to Use ChatGPT in the Classroom eBook by Stan Skarburt, Ed. D.
 - Canva MagicWrite can be used as an alternative to ChatGPT
- Ditch That Textbook Frankenbot Template
- A Teacher's Prompt Guide to ChatGPT by @herfteducator
- Wired: ChatGPT is Coming for Classrooms. Don't Panic.
 - Interview with educator @gibsonishere who is using prompts with seniors
- Khan Academy AI for education learning unit for educators
 - Emerging practices for teachers including AI-assisted writing instruction
 - Don't Ban AI-powered chatbots!
- Alice Domínguez for EdSurge: We Can't Keep ChatGPT Out of the Classroom, so Let's Address the 'Why' Behind Our Fears
 - After students have completed an essay on a given prompt, enter the same prompt into ChatGPT. Ask the program to write an essay of a similar length.
 - Compare the student-produced essays with the generated essays.
 - Notice how writing tends to be more engaging when written by a human.

CRITICAL CONSIDERATIONS

Topics that must be investigated for student and staff safety or protection.

- Can data sources with AI applications be hacked and flooded with inaccurate and/or inappropriate information?
- What sources do AI generators pull data from? Are the sources reputable? Are the sources biased?
- Do students have adequate instruction regarding best practices for fact-checking? Could there be systematic instruction on this topic via Canvas or other outlets? What tools do educators have to reinforce the importance of lateral reading and cross-referencing sources?

CONTENT POLICIES

Each AI generation tool has different safety and content guidelines.

OpenAI Products, including ChatGPT and DAL-E, have a content policy that blocks and prohibits users from generating the following types of content. This has passed multiple

tests from educators and other generative AI users.

- Harassment (Content that intends to harass, threaten, or bully an individual)
- Violence (Content that promotes or glorifies violence or celebrates the suffering or humiliation of others)
- Self-harm (Content that promotes, encourages, or depicts acts of self-harm, such as suicide, cutting, and eating disorders)
- Sexual (Content meant to arouse sexual excitement, such as the description of sexual activity, or that promotes sexual services (excluding sex education and wellness))
- Political (Content attempting to influence the political process or to be used for campaigning purposes)
- Spam (Unsolicited bulk content)
- Deception (Content that is false or misleading, such as attempting to defraud individuals or spread disinformation)
- Malware (Content that attempts to generate ransomware, keyloggers, viruses, or other software intended to impose some level of harm)

Viewable at <https://beta.openai.com/docs/usage-policies/content-policy>

PARKING LOT

This area exists for additional thoughts, considerations, and responses.

Additional Questions from TTSD educators:
• How can educators guide students to use this technology effectively? • Could this technology benefit newcomers and English language learners? • What tasks are no longer necessary? • Why have some staff members had access issues? ○ ChatGPT is not currently blocked by TTSD, as it has not been reported to violate TTSD content rules ○ The service may be overloaded or have device incompatibility issues • Can TTSD students use ChatGPT with their student devices? ○ There is no data privacy agreement on file for this service so students should not create accounts with their TTSD Google information ○ ChatGPT requires a unique, verifiable phone number for each account

- Will this influence future priority (required) standards?

Additional Comments from TTSD educators:

- Students may fall behind peers if they do not have the opportunity to learn how to use the technology responsibly which is a technology access equity issue.
- Students have already been using AI generation tools, whether they are allowed or not, and will continue to use AI tools.

Bruce Alter on Chess: For video, visit <https://youtu.be/t6SsYAog7x4>

I play chess, and there might be some lessons we can learn from how that sport has dealt with the rise of powerful chess engines. When Garry Kasparov lost to deep blue,* a massive supercomputer, people thought it would be the end of chess. But chess, including at the professional level, continues to be played worldwide. This is remarkable considering that I have a chess program on my phone that could beat the current world champion without breaking a sweat.

Chess engines, as the current generation of artificial intelligence-driven programs are called, have become essential tools for study and game review for almost every chess player. However, they are the primary tool for cheating and are extremely difficult to detect. Most online chess sites have proprietary algorithms that will flag players whose moves come too close to what the chess engines would do. Players who are detected, are suspended for a period of time. If they persist, they are banned from online play. But, gray areas exist as shown by the current controversy between Magnus Carlsen and Hans Niemann.

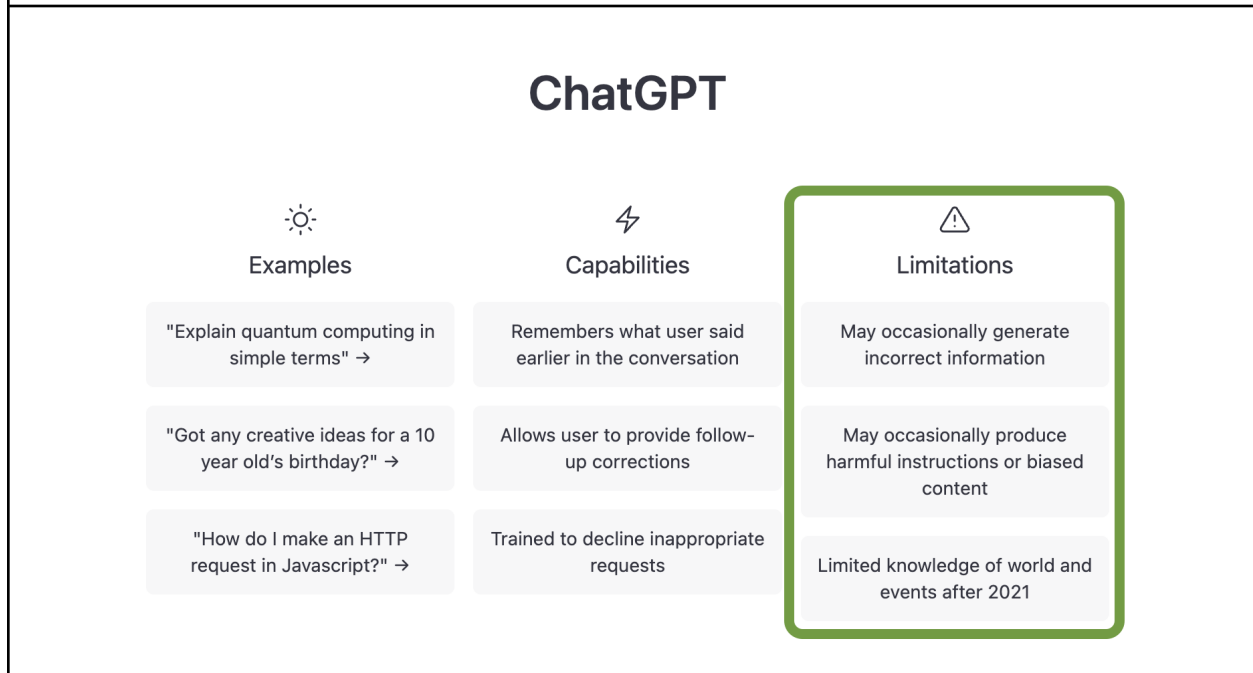
So, there is an uneasy truce between players and chess engines. They are essential and help players improve and deepen their understanding of the game. But vast resources are dedicated to detecting them and keeping them out of competitive play. Will we end up with such an uneasy truce between a need to teach students how to write and the powerful and almost undetectable AI applications that will surely come after ChatGPT?

ChatGPT and the future of Writing in Schools-What can We Learn from Chess?

<https://youtu.be/t6SsYAog7x4>

*For Garry Kasparov's thoughts on combining computer and human intelligence, see: Deep Thinking: Where Machine Intelligence Ends and Human Creativity Begins

ChatGPT Transparency - Limitations shared on ChatGPT's Current [New Chat Page](#)



ADDITIONAL RESOURCES

Implications of Biased Data Sources

- [Coded Bias](#) Film Documentary by Shalini Kantayya
- Mathematician Cathy O'Neil
 - a. Book/Audiobook: [Weapons of Math Destruction](#)
 - b. TED Talk: [The era of blind faith in big data must end](#)

Experimental Detection Tools

- GPT-2 Output Detector Demo: <https://openai-openai-detector.hf.space/>
 - a. [Tutorial by Bhavesh Bhatt](#)
 - b. Attempts to detect AI-generated text
- CGTZero: <https://etedward-gptzero-main-zqgfwb.streamlit.app/>

CREDIT

These resources have been collectively curated by educators from a wide variety of departments and school districts within the Portland, OR Metropolitan area, organized

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