



# Guidance, Considerations, & Intentions for the Use of Artificial Intelligence in West Virginia Schools

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| **Version 1.1**

[wvde.us/ai-guidance](http://wvde.us/ai-guidance)





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# Version History

Given the rapidly changing landscape of artificial intelligence (AI) technology, it is expected that this document will undergo regular updates to reflect the latest guidance and policy changes at both state and national levels. For ease of tracking these updates, a summary table is included in the document. This table succinctly lists the changes made in each new version to provide a clear and accessible history of the document’s evolution. This table allows readers to quickly reference how the guidance has adapted over time, aligning with the latest legal, ethical, and technological developments in AI. This approach better ensures that the document remains a relevant and reliable resource for understanding current AI guidance and best practices in West Virginia schools.

Date	Description of Changes	Version
01/2024	Created initial document	1.0
05/2024	Paragraph added to <i>Statement of Need</i> that was unintentionally omitted from the initial release; Definitions added to <i>Appendix 2 – Glossary</i> for “AI Architecture”, “AI Hallucination”, “Graphics Processing Unit (GPU)”, “Multimodal AI Model”, “Objective-Driven AI”, “Small Language Model”, and “State Space Model”; Paragraph structure changed on page 8 and new sentence added. Changed Bard to Gemini on pages 9, 10, and 22.	1.1



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# Introduction

## Purpose

This guidance centers around the users of artificial intelligence (AI) in various roles throughout West Virginia PK-12 schools. It is designed to assist individuals such as superintendents, district staff, educators, and support staff in the appropriate and effective use of AI, particularly generative AI technologies, within West Virginia schools. Its focus includes classroom instruction, school administration, and the broader scope of district operations. While recognizing the significant opportunities AI presents for enhancing educational experiences in West Virginia, this document also addresses the need for careful oversight to minimize risk and ensure responsible use. Note that multiple existing West Virginia Board of Education (WVBE) policies include language that are relevant to the use of technologies such as AI. This guidance supports those policies and in no way supersedes those policies.

Knowing the need for multiple levels of support related to AI in West Virginia schools, the West Virginia Department of Education (WVDE) developed a Canvas resource site accessible through the self-enrolling resource directory at <http://wvde.instructure.com>. This site will serve as a comprehensive hub, offering a variety of materials and resources for both county school districts and educators. Concurrently launching with this guidance, the site will be continuously updated with new resources as they are identified and curated. For instructions on how to access this resource site in Canvas, see [Appendix 1](#).

*Note: The WVDE is a Participating Government Agency in the work of TeachAI. This guidance was informed by the work of TeachAI ([TeachAI.org](https://teachai.org)) which operates under a Creative Commons license (CC BY-NC-SA 4.0). This work was adapted and modified under the license to meet the needs of West Virginia educators, schools, and districts, and as such, this work is published under the same license, allowing the work to be shared and adapted for non-commercial purposes.*

## Plan of Action

The release of this guidance initiates the support the WVDE is providing to schools and districts with the use of AI in education. An overarching plan of action below highlights the WVDE's commitment to provide support with using AI, part of which is addressed within this guidance.

If the WVDE supports school and district use of artificial intelligence by:

- Reinforcing that people are ultimately in control over AI and cannot be replaced by it
- Advancing educators' familiarity and comfort with AI
- Encouraging the use of AI to enrich and streamline instructional methods
- Upholding academic integrity in AI applications
- Safeguarding student wellbeing and data privacy in AI usage
- Clarifying ethical uses of AI in education
- Aligning AI with existing educational frameworks
- Equipping educators with the knowledge for teaching students about AI
- Facilitating open and transparent dialogue about AI with all involved parties

Then the responsible application of AI can lead to:

- Individualized learning experiences that cater to each student's needs
- Improved accessibility for students with diverse learning needs and exceptionalities
- Streamlined administrative tasks, freeing up more time for educators to teach
- Instantaneous feedback and evaluation for students
- Acquisition of necessary skills for the workforce of today and tomorrow, such as knowledge of computer science and data literacy

## Statement of Need

Artificial intelligence is rapidly changing the landscape of education. West Virginia public schools, along with all schools throughout the nation, face the monumental task of learning these emerging technologies and being able to use them in safe and responsible ways. The risks of AI are sometimes overstated (e.g., the extinction of people). These overstatements often come from unfamiliarity with or surface-level misunderstandings of AI. Other times, they arise from competing financial interests that desire to limit open-source competition. However, it is fundamental that realistic risks are assessed and addressed in order to protect students and staff. Predictable risks include over-reliance on AI technologies, challenges to independent and creative thinking, reduced social interactions, privacy and safety issues, furthering of digital divides, as well as plagiarism and cheating. It is imperative that West Virginia schools and districts demonstrate proactive preparedness to answer these challenges.

It would be unfortunate to view the educational opportunities of AI as an issue that cannot be managed. As with the integration of all other technologies into our daily lives, AI will not be an exception. As AI technologies progress, they will become an increasingly seamless part of how we use technology and will eventually be indistinguishable in many respects, much in the same way that we interact with smartphones that already use AI (e.g., auto-complete, text-to-speech functionality). Likewise, students should be informed of the possible ways in which AI will impact the job market they will eventually enter.

We must distinguish between innovation with AI compared to AI with innovation. This distinction is where our educators, and those who support them, make the difference. As AI continues to emerge and provide innovations (AI with innovation), educators will ultimately continue to innovate using AI (innovation with AI).

Stated simply, it is impossible and implausible to attempt to replace educators with AI technologies. AI should not and cannot be allowed to take the literal humanity out of the educational process. Students will always require caring and equipped educators and other staff to cultivate their cognitive and social-emotional skills. Educators have an immense opportunity to use AI as a supporting tool to make learning fun and engaging, and to use AI to promote critical thinking and manage personalized learning experiences that help students build foundational skills in literacy, numeracy, and all other subject areas. Therefore, it is imperative to highlight the need to collectively learn how best to use AI safely and responsibly as part of already-occurring educational processes to help all students.



# AI for Everyone

## An AI Explainer

It is important to define AI to ensure that those who access this guidance document are speaking the same language. AI is computer code that can resemble human intelligence to complete a given task (e.g., problem-solving, planning, etc.). It involves developing algorithms and systems that can perceive, reason, learn, and make decisions based on data.

Artificial intelligence includes a wide array of technologies, each applied in different fields and industries. These include drones used in delivery, advanced medical diagnostics systems, AI-driven predictive maintenance in manufacturing, smart home devices, personalized learning platforms for language acquisition, and sophisticated algorithms for financial market analysis. Various AI approaches are briefly addressed in the Glossary in Appendix 2.

### What is Generative Artificial Intelligence (AI)?

Though AI has applications across many fields, such as those mentioned above, this guidance is focused on AI applications that generate new content. Examples of “generative AI” applications include ChatGPT, Copilot, Dall-E, Gemini, and Mid-Journey.<sup>1</sup> These technologies are built on large language models (LLMs) that can produce new content, such as text, images, or music, based on patterns they have learned from their training data and use natural language processing (NLP) to provide human-like responses.<sup>2</sup> It is important to acknowledge that while this guidance is specific to technologies current at the date of publication, AI is advancing quickly, and new platforms and resources will continue to emerge.<sup>3</sup>

#### **Natural Language**

**Processing (NLP)** - a field of artificial intelligence that focuses on enabling computers to understand, interpret, and respond to human language in a meaningful way.

#### **Large Language Model (LLM)**

- a sophisticated AI system trained on extensive text data to process and produce language; recognize patterns, grammar, and nuances. It can perform tasks like text generation, question answering, and language translation.

**Algorithm** - A set of rules or instructions guiding AI operations and decision-making.

**Neural Network** - A type of artificial intelligence that mimics the workings of the human brain to process information and make decisions.

<sup>1</sup> [Code.org](http://teachai.org/toolkit), CoSN, Digital Promise, European EdTech Alliance, Larimore, J., and PACE (2023). *AI Guidance for Schools Toolkit*. Retrieved from <http://teachai.org/toolkit>. [November 30, 2023].

<sup>2</sup> OpenAI. (2023). *ChatGPT (September 25 Version) [Large language model]*. <https://chat.openai.com>.

<sup>3</sup> Oregon Department of Education. (2023). *Generative Artificial Intelligence (AI) in K-12 Classrooms*. Retrieved from [https://www.oregon.gov/ode/educator-resources/teachingcontent/Documents/ODE\\_Generative\\_Artificial\\_Intelligence\\_\(AI\)\\_in\\_K-12\\_Classrooms\\_2023.pdf](https://www.oregon.gov/ode/educator-resources/teachingcontent/Documents/ODE_Generative_Artificial_Intelligence_(AI)_in_K-12_Classrooms_2023.pdf). [November 16, 2023].

## How Does Generative AI Work?

It is important to note how generative AI works. Generative AI works by analyzing large datasets to learn patterns and features, which it then uses to generate new, original content. It uses complex algorithms, often based on neural networks, to make predictions based on the input data it has processed; thereby enabling it to create a wide range of outputs, from text and images to music and code, that mimic the style or characteristics of the data on which it was trained.

At its core, generative AI “predicts the flows of language. Trained on massive amounts of text taken from publicly available internet sources to recognize the relationships that most commonly exist between individual units of meaning (including full or partial words, phrases, and sentences), LLMs can, with great frequency, generate replies to users’ prompts that are contextually appropriate, linguistically facile, and factually correct.”<sup>4</sup>

While this technology does mimic human interactions, generation of ideas, and decision-making, it is important to note that as an AI “generates a reply, it is not making factual assessments or ethical distinctions about the text it is producing; it is simply making algorithmic guesses at what to compose in response to the sequence of words in your prompt.”<sup>5</sup>

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*“Either way, it’s all just math and programming.”*

*– Reid Hoffman*

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## Why talk about AI now?

The increasing use of AI in education, notably with the advent of generative AI technologies like ChatGPT, Copilot, and Gemini, has brought significant changes in how educators, students, and families interact with technology. These advancements, while offering transformative potential, also necessitate careful decision-making by schools and districts. Clear, student privacy-centered policies are essential to ensure developmentally appropriate access for all students.

As with any new technology, from the internet to smartphones, generative AI presents both opportunities and challenges in educational settings. To navigate these effectively, several organizations are providing guidance and resources for the responsible use of AI in education and for teaching about AI itself. These efforts aim to support effective and inclusive educational practices in the era of AI.

Selected examples of these resources and organizations include:

- [Teach AI](#), a partnership between major education organizations, including Code.Org, International Society for Technology in Education (ISTE), the World Economic Forum, National Association of State Boards of Education, National School Boards Association, Educational Testing Service, and Khan Academy, was developed in an effort to provide guidance to policy-makers and educational leaders around AI in education.
- [The CRAFT \(Classroom-Ready Resources About AI For Teaching Project\)](#), developed by Stanford University’s Graduate School of Education and provides resources to support high school teachers in increasing students’ AI literacy.

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<sup>4</sup>Hoffman, R. (2023). *Impromptu: Amplifying our Humanity Through AI*. Dallepedia.

<sup>5</sup>Hoffman, R. (2023). *Impromptu: Amplifying our Humanity Through AI*. Dallepedia

- [The Hands-On AI Projects for the Classroom](#) from ISTE and General Motors (GM) has developed guides for elementary and secondary teachers to support student-driven learning related to AI and its impacts on society.<sup>6</sup>

## People in Charge

It cannot be overstated that the fundamental principle of using AI to bolster educational efforts must be a balanced and people-centered endeavor. This intention is generally described as having “humans in the loop.” Without acknowledging and reinforcing that people are in charge and responsible for the safe application of AI, the whole vast machinery of AI would be void of educational purpose and benefit. AI technologies alone have not guided their own development nor prescribed their characteristic form. Spurred as a means of task automation and problem-solving, AI requires cautious use with people steering it. Therefore, it is helpful to think of AI in familiar terms. The figure below captures six analogies that describe AI in more concrete terms while recognizing the limitations of AI and the need for responsible human control and input. While the figure does not fully capture the extensive complexities, challenges, and far-reaching implications of AI applications, highlighting certain features in familiar terms is a suitable first step.

## Artificial Intelligence is like a...

 <p><b>Personal Coach</b></p> <p>It can highlight areas of improvement, but it is up to us to take action.</p>	 <p><b>Toolbox</b></p> <p>It provides us with a variety of tools to adapt to different needs and experiences, but it is up to us to use them responsibly.</p>	 <p><b>Spotlight</b></p> <p>It can illuminate new ways of learning, but it is up to us to make sure that it doesn't cast a shadow on creativity.</p>
 <p><b>Library</b></p> <p>It holds a wealth of knowledge and resources, but it is up to us to think critically.</p>	 <p><b>Canvas</b></p> <p>It provides a space for individual expression and exploration, but it is up to us to create the masterpiece.</p>	 <p><b>Bridge</b></p> <p>It can connect us to new topics and ideas, but we must be in the driver seat.</p>

<sup>6</sup> Oregon Department of Education (2023). *Generative Artificial Intelligence (AI) in K-12 Classrooms*. Retrieved from [https://www.oregon.gov/ode/educator-resources/teachingcontent/Documents/ODE\\_Generative\\_Artificial\\_Intelligence\\_\(AI\)\\_in\\_K-12\\_Classrooms\\_2023.pdf](https://www.oregon.gov/ode/educator-resources/teachingcontent/Documents/ODE_Generative_Artificial_Intelligence_(AI)_in_K-12_Classrooms_2023.pdf). [November 16, 2023]

## AI Rights and Responsibilities

### Responsible Use of AI Tools

The appropriate application of AI in educational settings depends greatly on the specific context, such as classroom projects or tasks. Utilizing AI tools responsibly demands extra dedication and understanding. For instance, educators must clearly define the conditions and methods for incorporating AI into their teaching strategies. Simultaneously, school districts are tasked with adhering to relevant legal standards concerning data protection and student data privacy. The educational goals of each educational activity will determine the suitable AI technology to be used for that particular task.<sup>7</sup>

Potential examples of the responsible use of AI to meet educational goals in West Virginia classrooms can be found below.

### District Management and Operations

- » **Communications:** AI tools could potentially help draft and refine communications within the school community, utilize chatbots for routine online inquiries, or provide instant language translation when a translator is unavailable.
- » **Operational Efficiency:** Staff could use AI tools to support school operations and streamline administrative processes, including scheduling courses and calendars, automating inventory management, or increasing energy savings.
- » **Learning Management Systems (LMSs):** AI that is natively incorporated into learning management systems by the system vendor has the potential to help analyze student performance data to provide insights to educators, helping them tailor instruction or interventions. These types of AI will fall under the memorandum of understanding (MOU) between the district and the system vendor, thus allowing the analysis of data by the AI, but also protecting student data. These types of analyses, along with classroom and school-based observations, can give insight into meeting the needs of the whole child.

### Educator Support

- » **Assessment Design and Analysis:** In addition to enhancing assessment design by creating questions, AI analysis algorithms within district-approved learning management systems could provide standardized feedback on common mistakes. AI could conduct diagnostic assessments to identify gaps in knowledge or skills and enable rich performance assessments. Educators would be responsible for data analysis and evaluation, feedback, and grading, including determining and assessing the usefulness of AI in supporting their work.
- » **Resource Development and Support for Differentiation:** AI could assist educators by differentiating resources, suggesting lesson plan components, generating diagrams and charts, and customizing opportunities for independent practice based on educator-developed criteria and various student proficiency levels.

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<sup>7</sup>Adapted from Gallagher, H. A., & Cottingham, B. W. (2023, June). *The urgent need to update district policies on student use of artificial intelligence in education* [Commentary]. Policy Analysis for California Education. <https://edpolicyinca.org/newsroom/urgent-need-update-district-policies-student-use-artificial-intelligence-education>.

- » **Provide Continuous Professional Learning:** AI could guide educators by recommending teaching and learning strategies based on educator-developed scenarios, suggesting professional learning resources that are related to teachers' interests, suggesting collaborative projects between content areas or teachers, and offering simulation-based training scenarios such as teaching a lesson or managing a parent-teacher conference.
- » **Research and Resource Compilation:** AI could help educators by recommending books, articles, research, and teaching strategies relevant to a lesson.

### **Student Learning**

- » **Aiding Creativity:** Students could use generative AI to spark creativity across diverse subjects, including writing, visual arts, and music composition.
- » **Collaboration:** During collaborative group projects, students could collectively leverage generative AI tools as a means to brainstorm ideas, support their research efforts, and identify relationships among various findings.
- » **Communication:** AI can offer students real-time translation, personalized language exercises, and interactive dialogue simulations.
- » **Content Creation and Enhancement:** AI can help generate personalized study materials, summaries, quizzes, and visual aids, and help students review content.
- » **Tutoring:** AI technologies have the potential to make available one-to-one tutoring and support for every student with access to the technology, making personalized learning more accessible to a broader range of students. AI-powered virtual teaching assistants could provide non-stop support, answer questions, help with homework, and supplement classroom instruction.
- » **Critical Analysis and Discernment:** While AI usage by our youngest learners is not appropriate, it is important to teach them to critically analyze and discern AI-generated materials accessed and presented by their teacher. This approach fosters early development in critical thinking, enabling young students to distinguish between potentially inaccurate AI-created content and human-generated information, but also allows young students to learn how AI works.

# AI for Educators

## Guiding Principles for AI Use by Educators

The following guiding principles are put forth to guide educators in the safe use of AI and address current and future educational goals, teacher and student agency, academic integrity, and security. It is recommended that educators commit to adopting procedures to implement each principle.

- » **I may use AI to help all my students achieve their educational goals.** If I choose to use AI, in a manner consistent with my district policies, I will use AI to help my students reach their educational goals, including improving student learning and my own effectiveness. I am committed to evaluating AI tools for biases and ethical concerns, ensuring they effectively serve my students.
- » **I reaffirm adherence to existing policies and regulations.** AI is one of many technologies used in classroom instruction, and I will use it in alignment with existing policies and regulations to protect student privacy, ensure accessibility to those with disabilities, and protect against harmful content. I will not share personally identifiable information with consumer-based AI systems. I understand that there is a difference between AI that is integrated into technologies purchased by my district, such as our LMS or an assessment platform, and a consumer-based AI system that I purchase or access on my own. I will thoroughly evaluate existing and future technologies and address any gaps in compliance that might arise.
- » **I will educate myself about AI.** Promoting AI literacy among students is central to addressing the risks of AI use and teaches critical skills for students' futures. I will do my best to learn how to use AI, when to use it, and how it works, including foundational concepts of computer science and other disciplines.
- » **I will explore the opportunities of AI and address the risks.** In a way that is appropriate for my classroom, I will work to realize the benefits of AI in education, address risks associated with using AI, and evaluate if and when to use AI tools, paying special attention to misinformation and bias.
- » **I will use AI in my classroom to advance a culture of academic integrity.** Honesty, trust, fairness, respect, and responsibility continue to be expectations for both my students and myself. I will expect students to give credit to sources and tools and be honest in presenting work that is genuinely their own for evaluation and feedback.<sup>8</sup>

## AI in an Educational Context

### Common Educational Frameworks

The process of instructional planning begins with identifying the specific standards that the lesson aims to address. These standards outline the key knowledge and skills students are expected to master. Educators then design instructional objectives that align with these standards, ensuring that

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<sup>8</sup> [Code.org](http://teachai.org/toolkit), CoSN, Digital Promise, European EdTech Alliance, Larimore, J., and PACE (2023). *AI Guidance for Schools Toolkit*. Retrieved from <http://teachai.org/toolkit> [November 30, 2023].

the learning activities and assessments are directly tied to the desired outcomes. AI can be used as a supporting tool, rather than a replacement, for this process. AI, like many other technologies, can be used in multiple applications in classrooms. Many West Virginia educators may have received training in different models of technology integration. Examples of the use of AI in classrooms through the lens of an example technology integration framework is included below.

**The SAMR model**, developed by Dr. Ruben Puentedura, categorizes technology integration into four levels: Substitution, Augmentation, Modification, and Redefinition.<sup>9</sup> The table below illustrates how generative AI applications in the classroom can fit into each level of the SAMR model, as described with examples that may be suited for secondary classrooms:

<b>SAMR Level</b>	<b>Description</b>	<b>Generative AI Student-Centered Example</b>
Substitution	Technology acts as a direct substitute for traditional methods, with no functional change.	Students use an AI tool to look up detailed information for a research project, similar to searching in a textbook.
Augmentation	Technology acts as a substitute, but with functional improvements.	Students use AI for language translation in a foreign language class, whereby the tool provides functional improvement by understanding idioms, proverbs, and other common expressions that may not have ideal literal translations.
Modification	Technology allows for significant task redesign.	Students complete personalized learning projects using AI to create new products and receive immediate and personalized feedback that is tailored to their level of progress.
Redefinition	Technology allows for the creation of new tasks, previously inconceivable.	Students engage in an immersive virtual reality simulation experience wearing a headset. An AI-powered program could be used to initially guide students through the process of changing the motor oil in a vehicle in a safe and controlled environment, where both the instructor and AI could provide real-time feedback and instructions, with the possibility of projecting the simulation on a screen for other students to observe and learn as well.

<sup>9</sup> Puentedura, R. (2006). *Transformation, technology, and education* [Blog post]. Retrieved from <http://hippasus.com/resources/tte/>.

## AI as an Instructional Enhancement

### The Instructional Opportunity

As generative AI continues to advance, it will become increasingly important to design student learning tasks that require critical thinking, creativity, and personal insights—skills that AI cannot replicate. This approach ensures students demonstrate that they are actively engaged in their learning processes, developing abilities that are uniquely human and that cannot be outsourced to AI, thereby fostering deeper understanding and intellectual growth.

For example, suppose students are assigned a list of vocabulary words, asked to write the definition of each word, and tasked with using the word in a sentence. A student could quickly write the following prompt in an AI platform such as ChatGPT:

**Prompt:** *For each word in this list, please write a definition of the word and then write the word in a sentence. Write in the manner of an 8th grader. Word list – abate, assimilate, concede, dissipate, erratic, flourish, impulsive, longevity, malleable, obstruct, render, rueful, subordinate, tarry, transgression.*

In less than 30 seconds, ChatGPT could return text like that shown below for every vocabulary word, which could be copy/pasted and submitted to a teacher:

#### ChatGPT output:

- **Abate** - (verb) *To become less intense or widespread.*
  - » *Sentence: After the storm, the wind started to abate, and the rain became lighter.*
- **Assimilate** - (verb) *To understand and become a part of a new culture or group.*
  - » *Sentence: When Maria moved to a different country, it took some time for her to assimilate into her new school and make friends.*
- **Concede** - (verb) *To admit that something is true or to give up in an argument.*
  - » *Sentence: Even though he didn't want to, Mark had to concede that his friend's idea was better for their project.*<sup>10</sup>

To counter this situation and best support student learning and engagement, the educator could instead request that ChatGPT develop an alternative to the previously designed vocabulary assignment. This places emphasis on the understanding that the educator's expertise and teacher-student connections are crucial to successfully implementing AI as an instructional tool.

In the example below, the educator could use ChatGPT to develop ideas for an alternative assignment:

**Prompt:** *You are an eighth-grade teacher. Develop 6 different 10-minute classroom activities to aid students in understanding the meaning of this list of words: abate, assimilate, concede, dissipate, erratic, flourish, impulsive, longevity, malleable, obstruct, render, rueful, subordinate, tarry, transgression.*

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<sup>10</sup> OpenAI. (2023). ChatGPT (September 25 Version) [Large language model]. <https://chat.openai.com>.



**ChatGPT Output:**

Certainly! Here are six 10-minute classroom activities to help students understand the meaning of the words in your list:

- **Word Match-Up (5 minutes):**
  - » Prepare flashcards with the words on one side and their definitions on the other.
  - » In pairs or small groups, students must match each word with its correct definition within a time limit of 5 minutes.
  - » The group that matches all the words correctly first wins.
- **Word Charades (10 minutes):**
  - » Write each word on separate pieces of paper and put them in a hat or container.
  - » One student draws a word and acts out its meaning without speaking while the class guesses what word it is.
  - » Set a timer for 2 minutes per word. After each round, discuss the word's meaning as a class.
- **Sentence Scramble (10 minutes):**
  - » Write a sentence for each word on the board, but scramble the words within each sentence.
  - » Challenge students to unscramble the sentences and identify the correct word for each definition.
  - » Discuss the meaning of each word in context once the sentences are unscrambled.
- **Vocabulary Story (10 minutes):**
  - » Give students a list of 3-4 words from your list.
  - » Ask them to create a short story or paragraph using all the words correctly.
  - » Encourage them to be creative and share their stories with the class, discussing the meanings of the words as they read.
- **Word Web (10 minutes):**
  - » Choose one word from the list and write it in the center of the board.
  - » Ask students to brainstorm related words, synonyms, and antonyms connected to that word.
  - » Discuss how these related words help us understand the word's meaning.
- **Word Illustrations (10 minutes):**
  - » Assign each student a word from the list and provide them with paper and art supplies.
  - » Instruct students to create an illustration or visual representation of their word's meaning.
  - » Have students present their illustrations to the class and explain how their artwork represents the word.

These activities should engage students in various ways and help reinforce their understanding of the meanings of the words on your list.<sup>11</sup>

The educator could then adapt these activities based on their knowledge of the students in his or her classroom to best meet the instructional needs of these students. The educator could also use prompts like those following to develop additional lesson ideas for the same set of vocabulary words, allowing for assignments that engage students, and don't allow for AI to complete the assignments.

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<sup>11</sup> OpenAI. (2023). ChatGPT (September 25 Version) [Large language model]. <https://chat.openai.com>.

**Prompt:** For the same word list, create a list of words and definitions that I can use to create a reference resource for students.

**Prompt:** Using the same list of words, generate 6 different paragraphs about growth mindset with each paragraph containing at least 7 of the words in each paragraph for the purpose of student annotation with the purpose of generating three questions for discussion. Please use all 15 words in the list among the 6 paragraphs. Bold each of the words in the word list in the paragraphs.

In the age of AI, educators are encouraged to update their assignments to increase the complexity to such a degree that the requirement for personal student input and engagement is required.

Within the WVDE Canvas Course, WVDE Professional Learning Resource for Artificial Intelligence, educators will find the complete output of the prompts above. Instructions on accessing Canvas resources can be found in [Appendix 1](#).

## Teaching AI

### Teaching Students About AI

AI is a branch of computer science that focuses on creating computer programs capable of performing tasks that typically require human intelligence. It involves developing algorithms and systems that can perceive, reason, learn, and make decisions based on data. WVBE Policy 2520.14 (West Virginia College- and Career-Readiness Standards for Technology and Computer Science) requires that all students receive grade-appropriate computer science instruction throughout the K-12 experience. As a branch of computer science, AI provides a unique and engaging opportunity to demonstrate the power of computer science through technologies that impact student lives directly.

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*Knowing how AI processes data and generates outputs enables students to think critically about the results AI systems provide. They can question and evaluate the information they receive and make informed decisions. This is of particular significance as students utilize AI in the classroom, to maintain academic integrity and promote ethical use of AI.<sup>12</sup>*

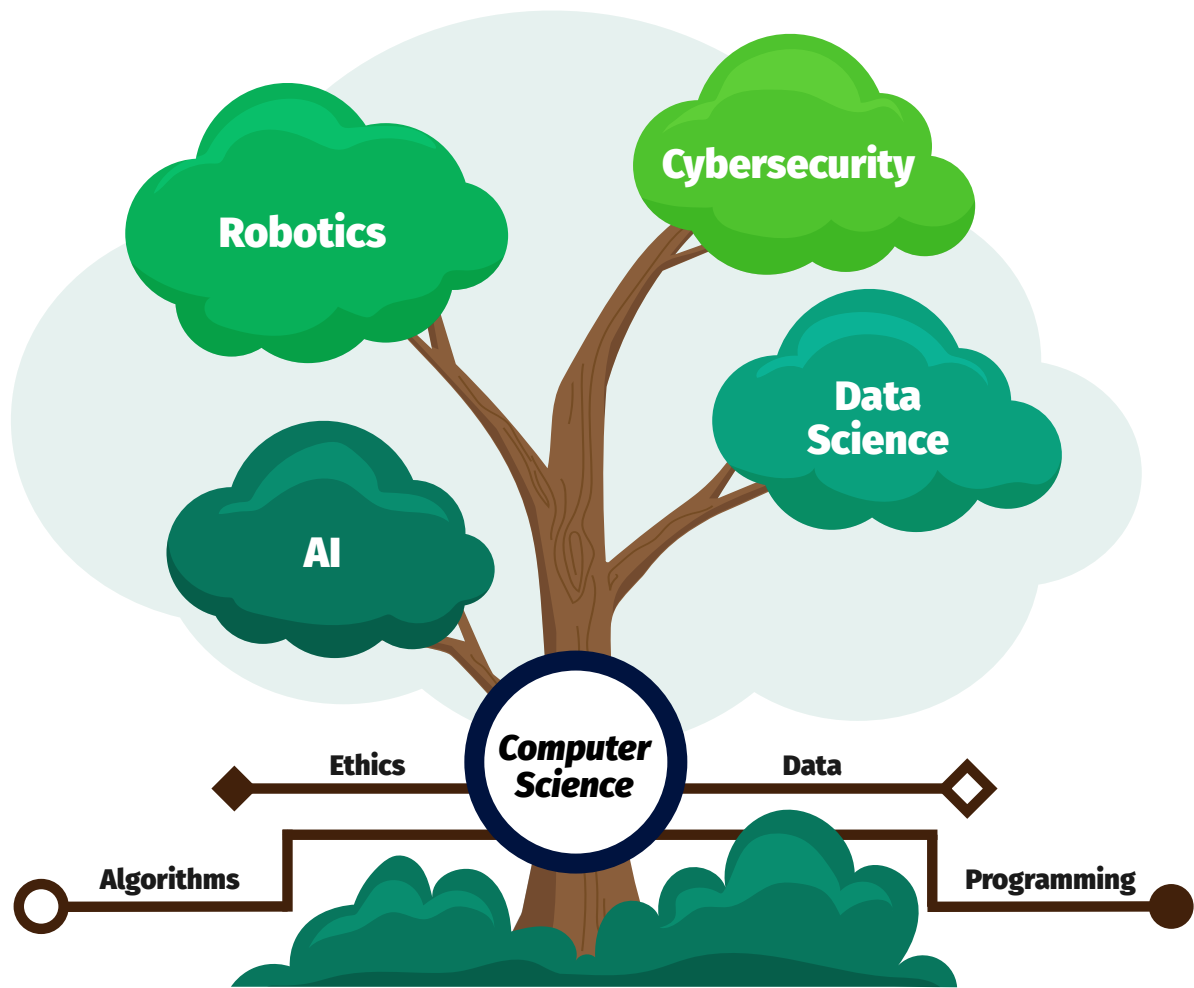
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In addition to computer science instruction, students should be taught AI literacy. AI literacy refers to the knowledge, skills, and attitudes associated with how artificial intelligence works, including its principles, concepts, and applications, as well as how to use artificial intelligence, such as its limitations, implications, and ethical considerations.<sup>13</sup> At its most basic, AI literacy can be taught through a lens of computational thinking – a foundational principle in computer science.

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<sup>12</sup> CDOE (2023). Learning With AI, Learning About AI, Retrieved from <https://www.cde.ca.gov/pd/ca/cs/aiincalifornia.asp#:~:text=CDE%20encourages%20educators%20to%20approach,promote%20ethical%20use%20of%20technology>. [November 30, 2023].

<sup>13</sup> Code.org, CoSN, Digital Promise, European EdTech Alliance, Larimore, J., and PACE (2023). AI Guidance for Schools Toolkit. Retrieved from <http://teachai.org/toolkit>. [November 30, 2023].



*\*Adapted from TeachAI*

## Computational Thinking

Computational thinking is a problem-solving process that involves multiple skills and techniques used in computer science. It includes breaking down complex problems into smaller, more manageable parts (decomposition); recognizing patterns and similarities in different problems (pattern recognition); abstracting or focusing on the important information while ignoring irrelevant details (abstraction); developing step-by-step solutions or algorithms (algorithm development and debugging); and using this information to make decisions (evaluation). Computational thinking can be applied not only in programming and computer-related fields but also in everyday life to solve problems.

Using a computational thinking lens to explore AI exposes students to foundational aspects of computer science. For example:

- **Decomposition:** In AI, complex challenges like natural language processing are tackled by breaking them down into simpler elements, such as grammatical analysis and meaning comprehension. Students learning about decomposition in AI get to see how intricate problems are made more approachable by dividing them into smaller, manageable segments.
- **Pattern Recognition:** AI technologies, particularly in fields like image recognition, depend on identifying patterns within visual data. Students exploring pattern recognition in AI learn how to discern and interpret these patterns, which is a critical skill in understanding how AI systems classify and respond to different types of data.

- **Algorithmic Thinking:** Understanding AI involves learning about the algorithms that drive decision-making processes, from basic algorithms like sorting data to more advanced ones used in predictive modeling. Students enhance their algorithmic thinking skills by understanding how these step-by-step instructions guide AI behavior.
- **Debugging:** AI systems, like those used in autonomous vehicles, must be meticulously debugged to ensure accuracy and safety. Students engaged in AI learn about debugging by identifying and correcting errors in AI algorithms, gaining insight into how even small errors can significantly impact an AI system’s performance.
- **Evaluation:** In AI applications such as restaurant and product recommendation systems, different algorithms are evaluated to determine which provides the most relevant results. Students learn about the evaluation aspect of computational thinking by comparing AI models, assessing their effectiveness, and refining them for improved outcomes.<sup>14</sup>

## Equipping Future Ready Students

WVBE Policy 2520.14 (West Virginia College- and Career-Readiness Standards for Technology and Computer Science) is designed to provide opportunities for students to learn computer science and technology principles to such a degree that upon mastery of these topics they become an empowered learner, a digital citizen, a knowledge constructor, an innovative designer, a computational thinker, a creative communicator, and a global collaborator.

Learning about AI transforms students into versatile learners and global citizens. They gain mastery over their education using AI’s personalized tools, develop a keen understanding of digital ethics, and construct new knowledge by critically analyzing information produced by AI. AI encourages innovation as students creatively solve complex problems and enhance their problem-solving skills. Additionally, AI aids students in creative communication, enabling them to produce unique digital content. It also promotes global collaboration, potentially connecting them with peers worldwide and expanding their perspectives. Overall, AI has the potential to equip students with essential 21st century skills, preparing them for a positive societal impact and effective navigation of the digital landscape.

Policy 2520.14 specifies that our youngest learners are to learn about algorithms, data, staying safe online, and how computing is changing over time.<sup>15</sup> Similarly, our high school students are expected to understand algorithms, how computing works, and how to use coding and computers to advance society.<sup>16</sup>

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<sup>14</sup> [Code.org](http://teachai.org/toolkit), CoSN, Digital Promise, European EdTech Alliance, Larimore, J., and PACE (2023). AI Guidance for Schools Toolkit. Retrieved from <http://teachai.org/toolkit>. [November 30, 2023].

<sup>15</sup> WVBE Policy 2520.14, West Virginia College- and Career-Readiness Standards for Technology and Computer Science, <https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=50990&Format=PDF#page=15>

<sup>16</sup> WVBE Policy 2520.14, West Virginia College- and Career-Readiness Standards for Technology and Computer Science, <https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=50990&Format=PDF#page=18>

# Advancing Academic Integrity

## The Opportunity

The arrival of AI in education presents a unique opportunity to revisit and even advance the principles of academic integrity. This technological development should encourage educators and institutions to redefine and reinforce the values of honesty, trust, fairness, and responsibility in academic work. AI tools have the potential to be used to educate students about the nuances of ethical research and writing, helping them understand the importance of originality and the consequences of plagiarism. However, the key lies in using AI as an educational tool that fosters a deeper appreciation for the integrity of learning. By integrating AI into classroom instruction, educators can create a learning environment that emphasizes critical thinking, creativity, and ethical reasoning, preparing students to navigate complex academic and professional landscapes with integrity.

In light of AI in education, it is necessary to address plagiarism and other risks to academic integrity. This requires revisiting policies about academic integrity and providing opportunities for educators and students to commit to using AI to advance the fundamental values of academic integrity – honesty, trust, fairness, respect, and responsibility.<sup>17</sup> WVBE Policy 4373, Appendix A, addresses both cheating and technology misuse. Both of these behaviors could be considered if AI were to be used inappropriately. Consequences could be: academic sanctions, revocation of privileges, administrator/student conference, parent contact, parent-teacher conference, detention, denial of participation in class and/or school activities.<sup>18</sup>

## Recommendations for Advancing Academic Integrity with AI

- Educators may decide to permit the use of generative AI tools for certain parts or types of assignments, providing clear explanations for its restricted use and outlining the reasons for prohibiting it in other tasks.
- As of the release of this guide, it is advised that educators refrain from using programs that claim to detect the use of generative AI for cheating or plagiarism purposes due to concerns about their reliability.
- Whenever a teacher or student uses an AI system, it is imperative to openly acknowledge and describe its usage. Furthermore, students are required to reference any AI tools they utilized in their work as part of this transparency. See the following resources for support:
  - » [MLA Style - Generative AI](#)
  - » [APA Style - ChatGPT](#)
  - » [Chicago Style - Generative AI](#)

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<sup>17</sup> International Center for Academic Integrity [ICAI]. (2021). *The Fundamental Values of Academic Integrity*. (3rd ed). <https://academicintegrity.org/about/values>.

<sup>18</sup> WVBE Policy 4373, *Expected Behavior in Safe and Supportive Schools*, <https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=51038&Format=PDF#page=25>

## A Variety of Different AI Platforms

There are new AI platforms launching each day. It is important to note that many of these platforms are an interface between the user and another AI system, such as ChatGPT-4. It is necessary to review the terms and conditions for each system and review county school district policies before using that system.

A brief sampling of different AI tools stakeholders have reported using is included below:

<a href="#"><u>ChatGPT</u></a>	ChatGPT, developed by OpenAI, is a generative AI platform designed to interpret and respond to prompts with detailed answers.
<a href="#"><u>Copilot</u></a>	Copilot is a conversational AI service developed by Microsoft, offering users the ability to interact in the Edge browser in a natural, dialogue-based format for information retrieval and various online tasks.
<a href="#"><u>Gemini</u></a>	Gemini, created by Google, is a generative AI platform that responds to prompts with detailed answers, having been trained to understand and follow specific instructions.
<a href="#"><u>DALL-E</u></a>	DALL-E, an AI system from OpenAI, generates realistic images and artwork based on descriptions provided in natural language.
<a href="#"><u>MagicSchool.ai</u></a>	MagicSchool.ai is an innovative suite of AI-powered tools designed to assist teachers in various aspects of classroom management and instruction.
<a href="#"><u>NotionAI</u></a>	NotionAI employs artificial intelligence to assist with organization and project management.
<a href="#"><u>Question Well</u></a>	Question Well creates key questions, learning objectives, and corresponding multiple-choice questions, offering export options to various educational technology platforms.

*The West Virginia Department of Education does not endorse or recommend any particular program but provides resources for informational purposes.*

## Condensed Checklist for Educators

While creating an exhaustive checklist would be an ambitious endeavor, the WVDE has compiled a concise one-page checklist (see [Appendix 3](#)) for classroom educators. This checklist includes key points that could assist educators as they contemplate incorporating AI technologies in their classrooms. It is important to note that using the checklist is not mandatory but is offered as a helpful starting place when considering responsible AI use throughout instructional design and delivery.

# AI for Schools and County School Districts

## Existing Policies

The WVDE has identified policies that may impact AI usage. This list is not exhaustive and may grow over time. It is recommended that districts review these policies and use these policies when evaluating AI technologies. All WVBE policies can be reviewed at <https://wvde.state.wv.us/policies/>.

- 2460 – Educational Purpose and Acceptable Use of Electronic Resources, Technologies and the Internet
- 4350 – Procedures for the Collection, Maintenance and Disclosure of Student Information
- 2419 – Regulations for the Education of Students with Exceptionalities
- 2520.14 – West Virginia College- and Career-Readiness Standards for Technology and Computer Science
- 4373 – Expected Behavior in Safe and Supportive Schools

## Guiding Principles for School and District AI Use

The following guiding principles and commitments are put forth to guide the appropriate and safe use of AI and address current and future educational goals, teacher and student agency, academic integrity, and security. It is recommended that districts, staff, schools, administrators, and educators commit to adopting procedures to implement each principle. For the commitments below, the “we” refers to the school or county school district.

- **We can use AI to help all of our students achieve their educational goals.** If we choose to use AI, we will use AI to help us reach our school goals, including improving student learning, teacher effectiveness, and improving school operations. We will aim to make AI resources universally accessible, focusing especially on bridging the digital divide among students and staff. We are committed to evaluating AI tools for biases and ethical concerns, ensuring they effectively serve our educational community.
- **We reaffirm adherence to existing policies and regulations.** AI is one of many technologies that may be used in West Virginia schools, and its use will align with existing policies and regulations to protect student privacy, ensure accessibility to those with disabilities, and protect against harmful content. We will not share personally identifiable information with consumer-based AI systems. We will thoroughly evaluate existing and future technologies and address any gaps in compliance that might arise.
- **We will proactively educate our staff and students about AI.** Promoting AI literacy among students and staff is central to addressing the risks of AI use and teaches critical skills for students’ futures. Students and staff will be given support to develop their AI literacy, which includes how to use AI, when to use it, and how it works, including foundational concepts of computer science and other disciplines. We will support teachers in adapting instruction in a context where some or all students have access to generative AI tools.
- **We will explore the opportunities of AI and address the risks.** In continuing to guide our schools, we will work to realize the benefits of AI in education, address risks associated with using AI, and evaluate if and when to use AI tools, paying special attention to misinformation and bias.

- **We will use AI to advance a culture of academic integrity.** Honesty, trust, fairness, respect, and responsibility continue to be expectations for both students and teachers. Students should be truthful in giving credit to sources and tools, and be honest in presenting work that is genuinely their own for evaluation and feedback.
- **We will maintain student and teacher agency when using AI tools.** AI tools can provide recommendations or enhance decision-making, but staff and students will serve as “critical consumers” of AI and lead any organizational and academic decisions and changes. When AI is employed for decision-making, we understand that humans, and not the AI, will be responsible and accountable for pedagogical or decision-making processes.
- **We will commit to auditing, monitoring, and evaluating our school’s use of AI.** Understanding that AI technologies are evolving rapidly, we commit to frequent and regular reviews and updates of our policies, procedures, and practices.<sup>19</sup>

## Prohibited Use of AI Tools

As this guidance describes the benefits of AI in education, the educational community also recognizes that risks must be addressed. Below are the prohibited uses of AI tools and the measures schools and districts should take to mitigate the associated risks:

### Student Learning

- **Bullying/harassment:** Using AI tools to manipulate media to impersonate others for bullying, harassment, or any form of intimidation is strictly prohibited. All users are expected to employ these tools solely for educational purposes, upholding values of respect, inclusivity, and academic integrity at all times. Harassment, bullying, and intimidation are defined in Appendix A of WVBE Policy 4373.<sup>20</sup>
- **Overreliance:** Dependence on AI tools can decrease human discretion and oversight. Important nuances and context can be overlooked and accepted. Teachers will clarify if, when, and how AI tools should be used in their classrooms through discussions and modeling, and teachers and students are expected to review outputs generated by AI before use.
- **Plagiarism and cheating:** Students and staff shall not copy from any source, including generative AI, without prior approval and adequate documentation. Students shall not submit AI-generated work as their original work. Staff and students must be taught how to properly cite or acknowledge the use of AI where applicable. Teachers must be clear about when and how AI tools may be used to complete assignments and restructure assignments to reduce opportunities for plagiarism by requiring personal context, original arguments, or original data collection. WVBE Policy 2460 prohibits engaging in plagiarism or reproducing/ repurposing

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<sup>19</sup> [Code.org](https://code.org), CoSN, *Digital Promise*, European EdTech Alliance, Larimore, J., and PACE (2023). *AI Guidance for Schools Toolkit*. Retrieved from [teachai.org/toolkit](https://teachai.org/toolkit). [November 30, 2023].

<sup>20</sup> WVBE Policy 4373, *Expected Behavior in Safe and Supportive Schools*, <https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=51038&Format=PDF#page=25>

<sup>21</sup> WVBE Policy 2460, *Educational Purpose and Acceptable Use of Electronic Resources, Technologies, and the Internet*, <https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=50142&Format=PDF#page=14>

<sup>22</sup> WVBE Policy 2460, *Educational Purpose and Acceptable Use of Electronic Resources, Technologies, and the Internet*, <https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=50142&Format=PDF#page=16>



media without permission.<sup>21</sup> Additionally, WVBE Policy 2460 requires that students be taught the ethical and practical implications and consequences of plagiarism.<sup>22</sup>

- **Freedom of expression:** Section 1 of WVBE Policy 4373 addresses student inquiry & expression. While free speech is protected, it is important to note this section states “School-sponsored student publications that are a part of the curriculum are subject to teacher editorial control and therefore student speech may be regulated in a manner reasonably related to educational purposes.”<sup>23</sup>
- **Equal access:** If an assignment permits the use of AI tools, the tools will be made available to all students, considering that some may already have access to such resources outside of school.<sup>24</sup>
- **Inappropriate material:** It has been noted in the news that with malevolent intent, AI applications can be “tricked” into creating inappropriate material.<sup>25</sup> WVBE Policy 2460 prohibits the inappropriate transmission of any material in violation with federal and state law<sup>26</sup> as well as the “viewing, storing, transmitting, or downloading of pornography or sexually suggestive or sexually explicit material” which AI-generated material would fall under.<sup>27</sup>

## Teacher Support

- **Societal Bias:** AI tools trained on human data will inherently reflect societal biases in the data. Risks include reinforcing stereotypes, recommending inappropriate educational interventions, or making discriminatory evaluations, such as falsely reporting plagiarism by non-native English speakers. Staff and students will be taught to understand the origin and implications of societal bias in AI; additionally, AI tools will be evaluated for the accuracy of their training data and transparency, and humans will review all AI-generated outputs before use.
- **Diminishing student and teacher agency and accountability:** While generative AI presents useful assistance to amplify teachers’ capabilities and reduce teacher workload, these technologies will not be used to supplant the role of human educators in instructing and nurturing students. The core practices of teaching, mentoring, assessing, and inspiring learners will remain the teacher’s responsibility in the classroom. AI is a tool to augment human judgment, not replace it. Teachers and staff must review and critically reflect on all AI-generated content before use, thereby keeping “humans in the loop.”<sup>28</sup>
- **Privacy concerns:** AI tools will not be used to monitor classrooms for accountability purposes, such as analyzing teacher-student interactions or tracking teacher movements, which can infringe on students’ and teachers’ privacy rights and create a surveillance culture.<sup>29</sup>

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<sup>23</sup> WVBE Policy 4373, *Expected Behavior in Safe and Supportive Schools*, <https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=51038&Format=PDF#page=7>

<sup>24</sup> [Code.org](http://teachai.org/toolkit), CoSN, *Digital Promise*, European EdTech Alliance, Larimore, J., and PACE (2023). *AI Guidance for Schools Toolkit*. Retrieved from <http://teachai.org/toolkit>. [November 30, 2023].

<sup>25</sup> Candanosa, R. M. (2023, November 1). *AI image generators can be tricked into making NSFW content*. *The Hub*. <https://hub.jhu.edu/2023/11/01/nsfw-ai/>.

<sup>26</sup> WVBE Policy 2460, *Educational Purpose and Acceptable Use of Electronic Resources, Technologies, and the Internet*, <https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=50142&Format=PDF#page=13>

<sup>27</sup> WVBE Policy 2460, *Educational Purpose and Acceptable Use of Electronic Resources, Technologies, and the Internet*, <https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=50142&Format=PDF#page=10>

<sup>28</sup> U.S. Department of Education, *Office of Educational Technology, Artificial Intelligence and Future of Teaching and Learning: Insights and Recommendations*, Washington, DC, 2023.

<sup>29</sup> [Code.org](http://teachai.org/toolkit), CoSN, *Digital Promise*, European EdTech Alliance, Larimore, J., and PACE (2023). *AI Guidance for Schools Toolkit*. Retrieved from <http://teachai.org/toolkit>. [November 30, 2023].

## School Management and Operations

- **Compromising Privacy:** The county school district or school will not use AI in ways that compromise teacher or student privacy or lead to unauthorized data collection, as this violates privacy laws and our system’s ethical principles. WVBE Policy 2460 requires that counties are responsible for ensuring that COPPA, CIPA, and FERBA are not violated.<sup>30</sup> See the Security, Privacy, and Safety section for more information.
- **Noncompliance with Existing Policies:** We will evaluate AI tools for compliance with all relevant policies and regulations, such as privacy laws and ethical principles. We will review the terms and conditions for all AI tools to review if/how personal information is used to ensure that personal data remains confidential and isn’t misused.<sup>31</sup>

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<sup>30</sup> WVBE Policy 2460, *Educational Purpose and Acceptable Use of Electronic Resources, Technologies, and the Internet*. <https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=50142&Format=PDF#page=13>

<sup>31</sup> [Code.org](http://teachai.org), CoSN, Digital Promise, European EdTech Alliance, Larimore, J., and PACE. (2023). *AI Guidance for Schools Toolkit*. Retrieved from <http://teachai.org/toolkit>. [November 30, 2023].

## Protecting Student Privacy and Safety

### Security, Privacy, and Safety

AI is a technology tool similar to other educational/instructional technologies. Its powerful implications and novel uses will require more time and experience to fully integrate responsibly. However, planning for the use of AI should be approached in a manner similar to planning for other educational technologies. District and school staff should be able to clearly articulate the needs and uses for AI tools, plan for systematic implementations, monitor uses and impacts, and adjust plans as needed in response to outcomes and user feedback. As part of these planning processes, student and staff privacy must be considered at every step along the way to ensure safety and security.

AI systems, especially those used in education, require extensive data to operate efficiently. In an educational setting, these data could include sensitive information about students like learning patterns, academic achievements, and personal details. The foremost ethical concern is student privacy, and districts need to ensure that such sensitive data is handled with utmost care. Obtaining parental consent is crucial, but it is also important to recognize that even with consent, using identifiable data in public AI models is not advisable. Any data information inputted into the AI model, including prompts, has the potential to be incorporated into the model's future iterations and potentially shared with other users. Hence, strict policies, consideration, and discretion are essential when integrating AI in educational settings to safeguard against any privacy breaches or misuse of student data.

Schools should implement reasonable security measures to secure AI technologies against unauthorized access and misuse. These measures may include (1) cataloging the tools used, their purposes/functions, and the information required (e.g., information about individuals, prompts or questions, aggregate data); (2) establishing rules or criteria for who can use AI tools for what purposes and/or creating school-specific guidelines for use of AI tools; and (3) maintaining up-to-date information about the technical details and security implications of the tools in use. All AI systems deployed within the school should be evaluated for compliance with relevant laws and regulations, including those related to data protection, privacy, and students' online safety. Schools and districts should also ensure that staff are adequately trained for how to securely and successfully use AI tools from both cybersecurity and instructional perspectives.

Staff and students are prohibited from entering confidential or personally identifiable information into unauthorized AI tools, such as those without approved data privacy agreements. Sharing confidential or personal data with an AI system could violate privacy if not properly authorized (with appropriate consent, as needed) or if information is not provided via approved procedures.

Best practice guidance from the National Forum on Education Statistics may be helpful for school and district staff when planning for the implementation of new technologies, including AI, and for protecting student privacy.

Forum Guide to Cybersecurity: Safeguarding Your Data  
<https://nces.ed.gov/forum/cybersecurity.asp>

Forum Guide to Technology Management in Education  
[https://nces.ed.gov/forum/technology\\_govern\\_planning.asp](https://nces.ed.gov/forum/technology_govern_planning.asp)

Forum Guide to Education Data Privacy  
[https://nces.ed.gov/forum/pub\\_2016096.asp](https://nces.ed.gov/forum/pub_2016096.asp)

## Evaluating AI Products

Common Sense Media has developed an AI Ratings System which provides schools and districts a framework “designed to assess the safety, transparency, ethical use, and impact of AI products.”<sup>32</sup>

The following resources are also provided to inform ethical AI software procurement:

- [Emerging Technology Adoption Framework](#)
- [The Ethical Framework for AI in Education](#)
- [SIIA Education Technology Industry’s Principles for the Future of AI in Education](#)
- [EdSAFE AI SAFE Benchmarks](#)<sup>33</sup>

## Special Consideration: Student Age

Every technology has a set of terms and conditions which must be reviewed. When considering the use of generative AI technologies – for example, ChatGPT, with students under the age of 18 – several key considerations should be addressed:

- First, explicit parental/guardian permission must be obtained for students under 18, ensuring that parents/guardians are fully informed about the nature, capabilities, and limitations of the AI technology, as well as the data privacy and security measures in place.
- It should be noted that specialists in the field of classroom AI have advised that students should ideally be at least 13 years old to utilize AI technology.<sup>34</sup> Nevertheless, acquiring AI literacy and developing a comprehension of the technology remains crucial for learners of all ages in our increasingly digital world.<sup>35</sup>
- For students under the age of 13, special attention is needed due to stricter laws like the Children’s Online Privacy Protection Act (COPPA). Additionally, the use of AI should be closely monitored by educators to ensure that the content and interaction are age-appropriate, respectful of privacy, and aligned with educational goals.
- WVBE Policy 2520.14 notes that technology tools must be age-appropriate, specifically when used with the youngest learners.<sup>36</sup>
- WVBE Policy 2520.14 notes that older students must be instructed in using modern technologies in order to prepare them for college or career.<sup>37</sup>

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<sup>32</sup> Common Sense Media, “Common Sense Media Announces Framework for First-of-Its-Kind AI Ratings System,” September 15, 2023, <https://www.common Sense Media.org/aiframework>

<sup>33</sup> [Code.org](#), CoSN, Digital Promise, European EdTech Alliance, Larimore, J., and PACE. (2023). AI Guidance for Schools Toolkit. Retrieved from <http://teachai.org/toolkit>. [November 30, 2023].

<sup>34</sup> “UNESCO Recommends Age Limit of 13 for Classroom Artificial Intelligence Use.” Washington Examiner, September 7, 2023. <https://www.washingtonexaminer.com/news/education/unesco-age-limit-classroom-ai-use>.

<sup>35</sup> Klein, A. “AI Literacy, Explained.” Education Week, May 10, 2023. <https://www.edweek.org/technology/ai-literacy-explained/2023/05>

<sup>36</sup> WVBE Policy 2520.14, West Virginia College- and Career-Readiness Standards for Technology and Computer Science, <https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=50990&Format=PDF#page=6>

<sup>37</sup> WVBE Policy 2520.14, West Virginia College- and Career-Readiness Standards for Technology and Computer Science, <https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=50990&Format=PDF#page=12>

## Sample Considerations for Existing School and District Policies

Guidelines should be incorporated into existing district and school policies. Below are examples of language relevant to responsible use policies, privacy policies, and academic integrity policies. These policies should be developed in accordance with the county school district's and/or school's established policy development process.

In creating district or school guidance or addendums to existing policies, it is recommended that you:

- Use language that's clear and familiar to educators, administrators, and students.
- Engage local educators, parents, students, and community members to gather feedback and insights.
- Account for the available technological infrastructure, like internet access and device availability.
- Ensure policies account for the training needs of educators to implement new guidelines effectively.

Below are examples for illustrative purposes and should be customized to the needs of your district and/or school.

### *Responsible Use Policy: AI Tools & Systems*

- **AI Output Review:** Always review and critically assess outputs from AI tools before submission or dissemination. Staff and students should never rely solely on AI-generated content without review.
- **Bias and Misinformation:** Be aware that AI-generated content may possess biases or inaccuracies. Always verify AI-produced results using trusted sources before considering them in academic work.
- **Safety and Respect:** Users must not use AI tools to create or propagate harmful, misleading, or inappropriate content. (Note: This may also be added to a student code of conduct or bullying/harassment policy.)
- **Transparency:** Any use of AI to aid assignments, projects, or research must be declared.
- **Usage:** AI tools will be used for educational purposes only. Misuse or malicious use of AI technologies will lead to disciplinary action.

### *Privacy Policy: AI & Data Collection*

- **Data Collection:** Parents, guardians, and students will be informed of specific data collection initiatives, and where applicable, consent will be sought. All AI-driven data collection will adhere to local data protection regulations and best practices.
- **Third-Party AI Tools:** Schools may develop an approved list of AI tools which should always be consulted. Unauthorized AI tools might not adhere to data privacy standards.
- **Personal Information:** Staff and students should never input personal, sensitive, or confidential data into any AI system without prior authorization, including any data related to student education records.

### *Academic Integrity Policy: AI Assistance*

- **Assessments:** AI tools may be used as a tutor or studying assistant to prepare for assessments, such as exams or quizzes, but not in the context of completing exams or quizzes unless explicitly stated.
- **Assignments:** Teachers are responsible for clarifying appropriate or prohibited uses of AI tools. Teachers might allow the limited use of generative AI on entire assignments or parts of assignments. They should articulate why they do not allow its use in other assignments or parts of assignments.
- **Bias and Critical Thinking:** Teachers and students alike should critically evaluate AI-generated content for potential biases or inaccuracies and understand the limitations of AI and the importance of cross-referencing with trusted sources.
- **Citations:** Any AI-generated content used in assignments must be appropriately cited; its use must be disclosed and explained. As part of the disclosure, students may choose to cite their use of an AI system using one of the following resources:
  - » [MLA Style - Generative AI](#)
  - » [APA Style - ChatGPT](#)
  - » [Chicago Style - Generative AI](#)
- **Plagiarism:** AI tools may be used for brainstorming or preliminary research, but using AI to generate answers or complete assignments without proper citation or passing off AI-generated content as one's own is considered plagiarism.
- **Use of AI Detection Tools:** At present, technologies that claim to detect content developed by generative AI are not sufficiently accurate to make reliable determinations of cheating and plagiarism. Therefore, while some teachers might use such systems to inform the feedback they provide to students about improving their writing, we discourage reliance on these systems to determine responsibility in cases where plagiarism is suspected.<sup>38</sup>

### **Communicating with the Community**

Communication is vital to successfully integrating artificial intelligence (AI) into school settings and engaging with parents and guardians is a key step in connecting families with the county school district's vision and recommendations for AI use in schools. This communication ensures transparency, providing parents/guardians with a clear understanding of how AI tools will be used and the benefits they potentially offer students. It also fosters collaboration where families can voice their opinions and concerns, thereby contributing to a more comprehensive and well-rounded strategy that harnesses the potential of AI.

Within the WVDE Canvas Course, WVDE Professional Learning Resource for Artificial Intelligence, district administrators will find templates for communication with communities, families, educators, and students. Instructions on accessing Canvas resources can be found in [Appendix 1](#).

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<sup>38</sup> [Code.org](#), CoSN, Digital Promise, European EdTech Alliance, Larimore, J., and PACE (2023). *AI Guidance for Schools Toolkit*. Retrieved from <http://teachai.org/toolkit>. [November 30, 2023].

## **Supporting AI in Instruction**

Given the novel nature of artificial intelligence (AI) in the educational landscape, it is important to consider incorporating AI-focused content into all professional development opportunities for educators. The rapid advancement and integration of AI technologies necessitates that teachers are not only familiar with these tools but are also comfortable in leveraging those selected by the county school district to enhance teaching and learning.

Professional development opportunities should therefore include content on the ethical use of AI, understanding its capabilities and limitations, and integrating AI tools into classroom instructional design. This approach will ensure that educators are equipped to navigate the challenges posed by AI, adapt to its developing role in education, and harness its potential to improve student outcomes. By prioritizing AI literacy in professional development, educators can stay ahead of the curve, fostering a future-ready educational setting that benefits both educators and students.

Within the WVDE Canvas Course, WVDE Professional Learning Resource for Artificial Intelligence, district administrators will find resources to support providing professional development to educators. Instructions on accessing Canvas resources can be found in Appendix 1.

# Moving Forward

The West Virginia Board of Education lists as its goals the intent to “Provide a high-quality learning system that:

- Encourages a lifelong pursuit of **knowledge** and skills
- Promotes a culture of responsibility, personal well-being, and **community** engagement
- Responds to **workforce** and economic demands”

Further, WVBE Policy 2460, Educational Purpose and Acceptable Use of Electronic Resources, Technologies, and the Internet, focuses on the importance of an “...effective public education system which develops students who are globally aware, engaged with their communities, and capable of managing their lives and careers to succeed in a digital world.”<sup>39</sup>

As districts, schools, and educators move forward with incorporating AI into instructional practice, it is the expectation of the WVDE that all stakeholders will use this guidance and will provide feedback on the guidance and accompanying Canvas resource site. This process will lead to a common goal of bettering the guidance for all West Virginia county school districts and their students.

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<sup>39</sup> WVBE Policy 2460, Educational Purpose and Acceptable Use of Electronic Resources, Technologies, and the Internet.  
<https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=50142&Format=PDF#page=13>



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*Note: The WVDE is a Participating Government Agency in the work of TeachAI. This guidance was informed by the work of TeachAI ([TeachAI.org](https://teachai.org)) which is licensed under a Creative Commons license (CC BY-NC-SA 4.0). This work was adapted and modified under the license, and as such, this work is published under the same license, allowing the work to be shared and adapted for non-commercial purposes.*

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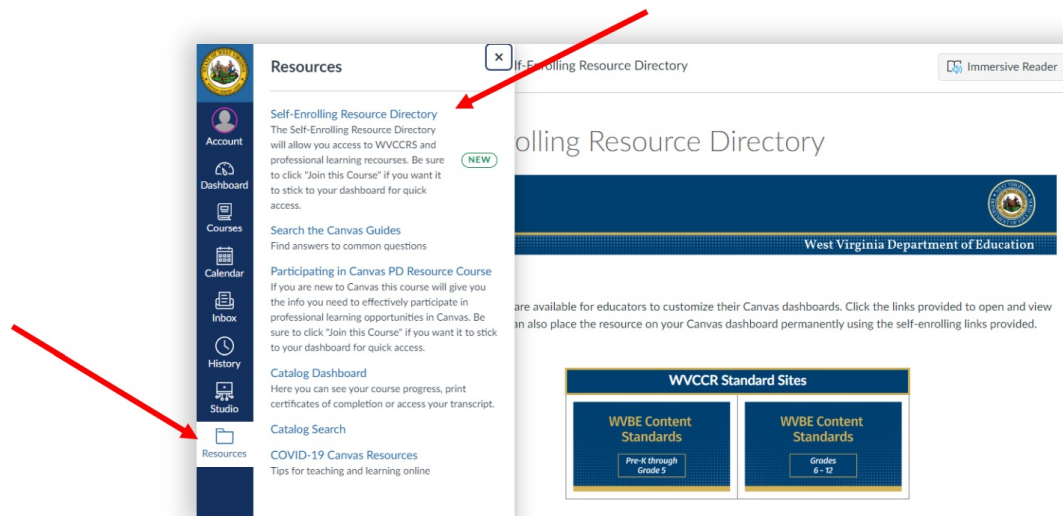
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# APPENDICES

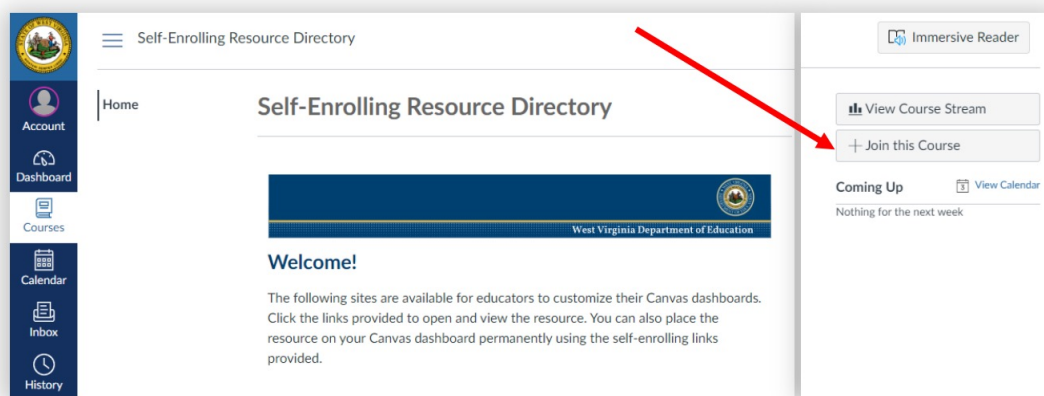
## Appendix 1 – Canvas Self-Enrolling Resource Directory

All West Virginia educators have access to Canvas, an online learning platform. Educators can customize their Canvas dashboards by enrolling in grade-level, course WVCCR Standards sites, or resource sites. For enrollment links, download the Self-Enrolling Resource Directory to your Canvas dashboard.

1. Log into Canvas: <https://wvde.instructure.com>.
2. Use your single-sign-on credentials to access Canvas.
3. If this is your first time logging into Canvas, read and agree to the Acceptable Use Policy.
4. Go to **RESOURCES** from the menu on the left, and choose **Self-Enrolling Resource Directory**



5. Click **+ Join this Course** to place **Self-Enrolling Resource Directory** permanently on your Canvas dashboard.



6. Scroll down to find/open the standards, sites, and resources you need. Click **+ Join this Course** to place those resource permanently on your dashboard.

## Appendix 2 – Glossary

**Algorithm:** A set of formulas and/or instructions given to a computer for it to complete a task.

**Artificial Intelligence (AI):** The field of computing that aims to create machines or software capable of intelligent behavior. AI systems can perform tasks that typically require human intelligence, such as visual perception, speech recognition, decision-making, and language translation.

**AI Architecture:** The architecture is like the blueprint of an AI system. The design of an AI system could vary in terms of the type of problem-solving methods (i.e., class of algorithms) used, the way in which the system handles information (i.e., data management techniques such as data preprocessing, data cleaning, data transformation, and data storage methods), and/or the computational resources (i.e., bandwidth, memory, storage, hardware) required. A common type of AI architecture is the transformer class of models, which is used in the GPT (Generative Pretrained Transformer) models. Each architecture has its own strengths and limitations for particular uses.

**AI Hallucination:** A hallucination occurs when an AI system produces output that may sound plausible and coherent but is factually incorrect or based on faulty assumptions. While AI doesn't have agency and should not be thought to act in a human-like way, the term is intended to highlight the phenomenon whereby the output of an AI system may be misleading and could contribute to misinformation. Hallucinations can be caused by an AI system being trained on inaccurate data, incomplete data, and/or data that only explains a narrow set of phenomena. It is important to be aware of the limitations of AI, and to know that output should be checked for factual accuracy.

**AI Literacy:** The ability to use and interact with AI systems effectively, efficiently, and responsibly.

**Bias in AI:** The systematic prevalence of untrue and/or harmful information that leads to unfair, inaccurate, or discriminatory outcomes in the decision-making process or results of an AI system. It can manifest directly or indirectly, stemming from the data used to train the system or the design of the algorithm itself.

**Data:** Text or numeric information that can be stored, processed, or analyzed by a computer.

**Data Privacy:** The aspect of handling, processing, and storing personal and sensitive data with confidentiality and security. In AI, this involves ensuring that data used for training and operating AI systems is protected from unauthorized access and misuse.

**Deep Learning:** Deep learning is an advanced type of machine learning. It studies numerous examples (like images or speech) and translates them into layers of numbers and statistical models, often referred to as 'neural networks', to capture complex patterns in data. These neural networks mimic the way our brain works. Deep learning is particularly effective for tasks like image and speech recognition.

**Ethics in AI:** The moral principles and guidelines that govern the development and use of AI technologies. This includes considerations of fairness, transparency, accountability, and the impact of AI on society and individuals.

**Generative AI:** A type of AI that specializes in creating new content, such as text, images, and audio, by learning from existing data. It can generate realistic and coherent outputs that mimic original data sources.

**Graphics Processing Unit (GPU):** A GPU is a chip/semiconductor used by a computer to increase the speed with which a computer can run calculations, such as AI models that require deep learning. The GPU can use hundreds or even thousands of smaller “cores”, which are analogous to individual employees completing tasks within a company, to run processes in parallel. While the central processing unit (CPU) is the main hardware that runs a computer, a GPU can take many instructions (including those that have been split into smaller parts) and run them all at the same time instead of sequentially. GPUs are relevant in many contexts outside of AI (e.g., graphics acceleration for video games) but have been particularly advantageous for increasing how quickly AI models can be trained and implemented because of the parallel processing, dedicated high-speed memory (known as VRAM), and the ability to run large volumes of small calculations (such as those needed in matrix multiplication for AI model calculations).

**Large Language Model (LLM):** Complex statistical models that use billions of variables to capture the characteristics and content of language across billions of sentences. LLMs can be used to study how the English language is written across different contexts and use that understanding to write new text (e.g., answering questions, creating summaries or lists).

**Machine Learning (ML):** The ability of a machine to predict outcomes without someone giving it exact instructions. ML involves complex statistical models to make predictions (i.e., learning the connections between variables).

**Model:** In AI, a model refers to the specific trained algorithm capable of performing tasks such as prediction, classification, or content generation. Models are trained using datasets and refined until they achieve the desired level of accuracy.

**Multimodal AI Model:** An AI system that can process multiple modalities, or types, of data (e.g., text, images, audio video, environmental) and/or create multiple types of output.

**Natural Language Processing (NLP):** A branch of AI that focuses on the interaction between computers and humans through natural language. NLP involves the interpretation, understanding, and generation of human language by AI systems.

**Neural Networks:** Computational models that are inspired by the human brain's structure and function. These networks are composed of interconnected nodes (similar to neurons) and are used to model complex patterns in data for tasks such as classification and prediction.

**Objective-Driven AI:** An AI architecture that is modular and designed to meet a set of pre-defined objectives created by people, which include guardrails to ensure controllability and safety. It constructs internal models of how the world works (i.e., “world models”) by learning from experiences and uses them to predict how to learn and respond in new or uncertain situations. While this architecture can be used to process text data, it is more likely to use videos and/or sensors to study the environment around it.

**Prompt:** A question or task provided to an AI tool that is the basis for the action it should perform. A prompt generally contains detailed information related to what the computer should do and any constraints under which it should operate.

**Small Language Model (SLM):** An AI system that addresses similar tasks as a Large Language Model but uses far fewer parameters to do so. One advantage of SLMs is that they can run locally on devices (i.e., connection to a cloud environment may not be needed) and may be better suited for even faster response times and better protecting data privacy. It may be expected that SLMs will be used alongside LLMs in various applications, where SLMs may be trained for specific use cases and used as needed by a larger AI workflow.

**State Space Model (SSM):** An AI architecture that uses a different class of statistical modeling than LLMs. State space models analyze sequences of data (e.g., words within a sentence) by using the current “state” of the data (i.e., how it currently exists) and how it changes over time. These models are more frequently applied to multimodal data that span multiple time points.

**Training Data:** The dataset used to train AI models. This data provides the examples and experiences that AI systems use to learn how to perform tasks, make predictions, or generate content. The quality and diversity of training data significantly influence the performance of AI models.<sup>40</sup>

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<sup>40</sup> Adapted from the results of the output from this prompt: “Please assist me in developing a starting list of vocabulary that an educator would need to know in order to understand the basics of generative AI” prompt. ChatGPT-4, 1 April. version, OpenAI, 21 Nov. 2023, <http://chat.openai.com/chat>.

## Appendix 3 - Checklist

# Considerations When Using AI for Teaching and Learning

## A CONDENSED CHECKLIST FOR WV EDUCATORS



This checklist is *not* comprehensive, but it is offered as a helpful guide for considering some key aspects of using AI in teaching and learning. The checkboxes are intended to help educators think about which parts of their lesson planning may be informed by AI. Checking more boxes does *not* necessarily yield better instruction or improved learning.

### Responsible Uses

<input type="checkbox"/>	AI is being used to supplement instruction by a caring educator, not replace it.
<input type="checkbox"/>	AI tools identified for instructional use are consistent with your district's policies.
<input type="checkbox"/>	AI tools identified for instructional use have been explicitly evaluated for biases, ethical concerns, and sufficient factual reliability.
<input type="checkbox"/>	AI tools are being used in alignment with existing policies and regulations to protect student privacy. (AI tools themselves are not FERPA compliant – users are responsible for compliance).
<input type="checkbox"/>	**AI tools identified for instructional use are accessible to students with disabilities or other diverse learning needs.
<input type="checkbox"/>	AI literacy is being seamlessly incorporated into instruction, with emphasis on responsible use and critical thinking.
<input type="checkbox"/>	The risks and challenges of using AI have been considered for each AI tool used.
<input type="checkbox"/>	AI is used to advance a culture of academic integrity and ethical use.
<input type="checkbox"/>	Student safety and well-being have been prioritized in selecting and using AI tools.
<input type="checkbox"/>	The full lesson plan was <i>not</i> AI-created.
<input type="checkbox"/>	AI should <i>not</i> be avoided altogether (rather, assignments designed/adapted so that they cannot be completed entirely by AI).

### Planning for Instruction

<input type="checkbox"/>	Evaluate the suitability of using specific AI tools for planning the given lesson (if at all). Gather input/opinions from colleagues, instructional coaches, and/or administrators as needed.
<input type="checkbox"/>	*Identify and clarify students' prior knowledge using AI analytics.
<input type="checkbox"/>	Identify AI tools that can be used to present material in a way that captures students' attention and is accessible to all.
<input type="checkbox"/>	Develop clear, measurable outcomes that are double-checked for clarity using AI.
<input type="checkbox"/>	Organize the key information and skills to be taught using AI.
<input type="checkbox"/>	Plan and/or practice how an AI tool can be used to demonstrate the concept/skill to students with various learning modalities.
<input type="checkbox"/>	Prepare AI-generated examples or analogies for modeling and evaluate the instructional clarity of the output.
<input type="checkbox"/>	Create an initial list, using AI, of supporting materials, resources, and tools needed to conduct the instructional input and student activities.
<input type="checkbox"/>	*Identify AI tools to assess students' understanding during instruction.
<input type="checkbox"/>	Plan and prepare AI-supported practice activities that you can supervise.
<input type="checkbox"/>	Design independent practice task(s) using AI to generate ideas.
<input type="checkbox"/>	Plan for lesson closure that reinforces key points using AI.
<input type="checkbox"/>	Plan for no-tech or low-tech backups.

### During Instruction

<input type="checkbox"/>	Adjust instruction by using AI to provide scaffolding or eliminate AI altogether if it is adding to students' confusion.
<input type="checkbox"/>	*Assess students' understanding using AI and adjust instruction.
<input type="checkbox"/>	**Supervise students' AI-supported practice activities and provide feedback.
<input type="checkbox"/>	Model responsible and ethical use of AI tools, taking care to give proper attribution.
<input type="checkbox"/>	Model effective and productive interactions with AI to obtain desired outputs.
<input type="checkbox"/>	Transition to the next lesson using AI tools (if applicable).

### After Instruction

<input type="checkbox"/>	Evaluate the continued use of specific AI tools as part of your routine instructional planning or practices.
<input type="checkbox"/>	Reflect on ways in which prompts provided to AI tools can be modified in the future in producing instructional materials that are better suited to your students' learning needs.
<input type="checkbox"/>	*Communicate student progress to family members or caregivers.
<input type="checkbox"/>	**Ask for student feedback on their experiences engaging with specific AI tools.
<input type="checkbox"/>	Assess ways in which the use of AI may have caused distractions or contributed to the difficulty of concept attainment.

\*Indicates a use case that may be part of your district's Learning Management System(s) or assessment platforms – do not enter student data into an unapproved tool.

\*\*Indicates a scenario when it is age-appropriate (e.g., Terms and Conditions) for students to use AI tools, typically in secondary grade levels.











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