GENERATIVE AI GUIDANCE FOR TEACHERS AND STUDENTS

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Overview

Artificial Intelligence (AI) is revolutionizing K-12 education by providing innovative solutions to enhance teaching, learning, and administrative processes. The integration of AI technologies, including machine learning, natural language processing, and adaptive learning systems, is paving the way for a more personalized, efficient, and engaging educational experience. By addressing ethical considerations and promoting equitable access, AI can significantly contribute to a more effective and inclusive educational system.

What is Generative AI?

Generative Artificial Intelligence, or generative AI, refers to computer systems capable of performing complex tasks that historically only a human could do, such as reasoning, making decisions, solving problems, and creating content. Technology that utilizes AI can seem to be "learning" from extensive data and adapts when given additional input. Some common and possibly familiar examples of generative AI in action would be ChatGPT, Google Translate, and Tesla self-driving cars.

Why now?

Artificial Intelligence is not a new concept. It has been around since the 1950s, but significant advancements have been made since 2011, including voice assistants, autonomous robots, self-driving vehicles, and most recently, the development of large language models such as ChatGPT. These advancements are having earth-shattering influences on the way we the live, the jobs we chose and how we learn. Students are growing up with AI as the norm, and as educators, we need to proactively plan how AI transforms the use of technology in the classroom. Students require guidance to understand how to use it, as well as practical experience, as they will need to navigate a world where AI is integrated into almost everything they do. We need to recognize the potential for innovation while also considering the impact on instructional practices and student learning experiences and outcomes.

AI Definitions

Term	Definition	Platform Examples	Uses
Artificial Intelligence	Artificial Intelligence, often abbreviated as AI, refers to the development of computer systems capable of performing tasks that typically require human intelligence. These tasks may include learning from experience, adapting to new information, making decisions, understanding natural language, and recognizing patterns. AI systems can be designed to operate autonomously or assist humans in various tasks, with the aim of mimicking or surpassing human cognitive abilities. (Generated by Chat GPT)	Canva, Git Hub, ChatGPT, Gemini, Pi	Facial recognition, driving, banking, self-checkout, writing assistance, image creation,
Generative AI	Generative Artificial Intelligence- Generative AI refers to software tools and algorithms that use large datasets to create new content, such as text, images, videos, or other digital artifacts.	Chat GPT, Co-Pilot, Alpha Code, Scribe,	A means to augment teaching and learning. Creates text, images, videos, digital artifacts.
Large Language Model	A Large Language Model is a type of artificial intelligence model designed to understand and generate human-like content.	Such as OpenAI's GPT series or Google's BERT, Bloom, Cohere	Create texts, images, videos.
Algorithmic Bias	Algorithmic bias occurs when computer programs make unfair decisions due to their design or the data input by humans.		

Hallucinations	AI hallucination refers to the phenomenon where AI systems generate false or inaccurate information.		
AI Ethics	AI ethics refers to the guiding principles used by stakeholders to ensure the responsible development and use of artificial intelligence technology. (WA OPI)		
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Potential Uses and Risks of using AI in Education

The Importance of Understanding the Potential Uses of AI in Education

- Customizing, assessing, and adapting lesson plans
- Fostering critical thinking through human and data input
- Personalizing learning and offering tailored education insights
- Improving administrative and organizational efficiency
- Supporting and enhancing creativity, innovation, and idea development

The Importance of Understanding the Potential Risks of AI in Education

- Unethical or inappropriate uses
- Rise in academic dishonesty and lack of awareness about the importance of citations or credit
- Creation of inequitable learning environments
- Dissemination of false or inaccurate knowledge or information

Thoughts to consider when implementing AI in GFPS:

1. Ensuring that staff and administration receive sufficient education on our recommendations. Consider providing professional development on how to use AI effectively.

2. Clarifying what is considered generative AI (e.g., Chat GPT, Bing Image, Canva, etc.)

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AI Guidance and Implementation for Teachers and Students

Teacher & Student Focus

- **Learning ABOUT Generative AI, grades K-6:** Teachers in Kindergarten through 6th grades should concentrate on supporting students learn about Generative AI instead of having students use Generative AI. This approach to Digital Citizenship sets a solid foundation for ethical use and understanding of Generative AI in future grades.
- **Learning WITH Generative AI, grades 7-12:** Teachers should gradually introduce Generative AI solutions in grades 7 through 12, guiding them in its application as directed and supervised by teachers. By the time they finish grade 12, students should have the skills to adhere to AI guidelines provided by teachers for any assignment.
- **Teaching WITH Generative AI, all grade levels:** Teachers at all grade levels should explore various applications of Generative AI to enhance their productivity, including developing learning materials, providing instructional assistance, and utilizing a Virtual Assistant for communication. (Reference the table of *Possible Instructional Strategies for the Use of Generative AI* for more specific suggestions.)

Academic Integrity and AI Assistance

- **Assessments:** Teachers are encouraged to permit students to use AI tools as a personal tutor or study buddy to prepare for assessments. During exams or quizzes, the decision to use an AI tool should be at the discretion of the teacher, and it should be clearly stated whether this is allowed.
- **Assignments:** Teachers should be responsible for clearly explaining the appropriate and inappropriate uses of AI tools when students are completing assignments. They may permit the limited use of generative AI for entire assignments, parts of assignments, or as a brainstorming tool. Teachers should be encouraged to explain their reasons for allowing or disallowing the use of AI in other assignments or parts of assignments.
- **Bias and Critical Thinking:** All users of AI software should review and evaluate AI output for accuracy and potential bias. Students must develop the critical thinking skills needed to successfully use and navigate the world of AI. Limitations of AI systems and the data used to develop AI content can, and sometimes do, amplify human bias. Use caution and human review prior to using AI outputs in classrooms, publications, data analysis, etc.
- **Citations, Disclosures, and Attributions:** AI-generated content is considered plagiarism unless appropriately cited in assignments or publications; any use must be referenced. Instruction should emphasize the importance of the ethical use of AI and the role of using sources in assignments. The following resources provide a sample of how to appropriately cite the use of AI in any publication or assignment:
  - MLA Style - Generative AI
  - APA Style - ChatGPT
  - Chicago Style - Generative AI
- **Plagiarism:** Staff and students should be encouraged to use AI tools for brainstorming, creative stimulation, or preliminary research. However, utilizing AI tools to produce answers, stories, essays, or other publications and/or complete assignments without proper citation constitutes plagiarism.
- **Use of AI Detection Tools:** Software companies claiming their products can detect content developed by another AI tool or their own AI tools are currently unreliable and should not be used as the sole way to determine whether cheating and plagiarism have occurred.
- **Personal Information and Generative AI:** Users should be careful when providing personal information in any technology application. This is especially important when using generative AI applications like ChatGPT, as the information you enter (including prompts and questions) is stored on the application's server and integrated into the large language model used to respond to your inputs.

Possible Instructional Strategies for the Use of Generative AI

Instructional Focus	Example(s)
Digital Citizenship	- Teachers can proactively teach how to use Generative AI by teaching a <u>Classroom Protocol</u>, asking students to sign and adhere to a <u>Student AI Code of Conduct</u>. - Teachers can follow a list of <u>professional ethics</u> to implement AI Tools for protecting student privacy and data while ensuring equity. - Teachers can guide students' use of <u>Generative AI using a scale</u> to identify what level of use is acceptable for each assignment given. Applying the <u>20-60-20 rule</u> can also be a universal guide for AI use. - Ensure that students understand how to use AI responsibly, ethically, and productively by integrating digital citizenship lessons into the curriculum. For example, <u>Common Sense Media has openly licensed digital citizenship lessons</u> that can provide a starting point for integration across K-12.
Learning Design	- Teachers can lean on Generative AI to develop assessment questions based on content – based on the prompt, teachers can ask for specific question types e.g. written response, multiple choice, higher order thinking, etc. - Teachers can use Generative AI to support and expand their own learning about the content they are teaching. - Generative AI can generate lessons, activities, and assessments that follow UDL (Universal Design for Learning) guidelines. - Generative AI can provide steps in how to integrate culturally specific content into lesson planning.
Instructional Support	- Teachers can modify a response provided by generative AI to provide more specificity, e.g., rewrite using a project-based learning activity, rewrite the lesson with a focus on vocabulary development. - Teachers can provide a rubric and include student writing samples and ask generative AI to evaluate student work. - Generative AI responses can be generated in a variety of languages allowing multilingual learners access to translated materials that may not be embedded within the school's instructional materials. - When asking generative AI a question, the user can request the response to be provided at a particular grade level or reading level. Furthermore, the user can request that responses contain specific vocabulary and sentence complexity. - Teachers can use generative AI tools to support writing instruction. For example, ChatGPT and other AI platforms can be used to develop outlines for student writing to provide scaffolds for students.
Virtual Assistant	Generative AI can help with developing drafts of emails and other communications, finding supplementary content aligned with their curriculum, and searching the web for continuing education courses aligned with their interests and needs.
Student Support and Guidance	- Students can practice writing research questions and use generative AI responses as a determination of the strength of their questions. - Students who have difficulty with writing can use generative AI to write an initial draft of an essay and use it as a "rough draft" with the next step being to revise to make it unique. - Students can ask generative AI which colleges or universities offer particular programs of interest or what education or experience is required for certain career pathways. - Students can use generative AI to better understand the revision process by asking ChatGPT to revise a particular section and then analyzing the methods used to accomplish the requested revision.

Future Career Options	- Show students examples of the ways that AI is being used in spaces outside of education, e.g., the medical industry, the automobile industry, and the manufacturing industry. - Consider integrating instruction about AI into the curriculum. For example, AI4All has an openly licensed curriculum "Bytes of AI" available on Oregon Open Learning that can be integrated into high school courses.

Table is adapted from Generative Artificial Intelligence (AI) in K-12 Classrooms, published by Oregon Department of Education.