VAI EDUCATION'S ADMIN GUIDE

FALL 2023

NAVIGATING AI IN SCHOOLS

MITIGATING RISKS AND UNLOCKING POTENTIAL

VAN ANDEL INSTITUTE®

A WHOLE NEW WORLD

In today's rapidly evolving technological landscape, artificial intelligence (AI) has emerged as a transformative force, impacting nearly every industry — including education. Among its numerous applications, AI has the potential to revolutionize the way we teach and learn, offering educators powerful tools to enhance their instructional methods and to prepare students for an AI-driven future. This guide aims to provide school administrators with a thorough understanding of these technologies, its practical applications within the educational realm, and the risks and benefits associated with AI. It offers guidance on how to harness the power of AI to create more engaging and effective learning environments while addressing concerns related to ethics, privacy, and pedagogy.

IN THIS GUIDE

UNDERSTANDING AI
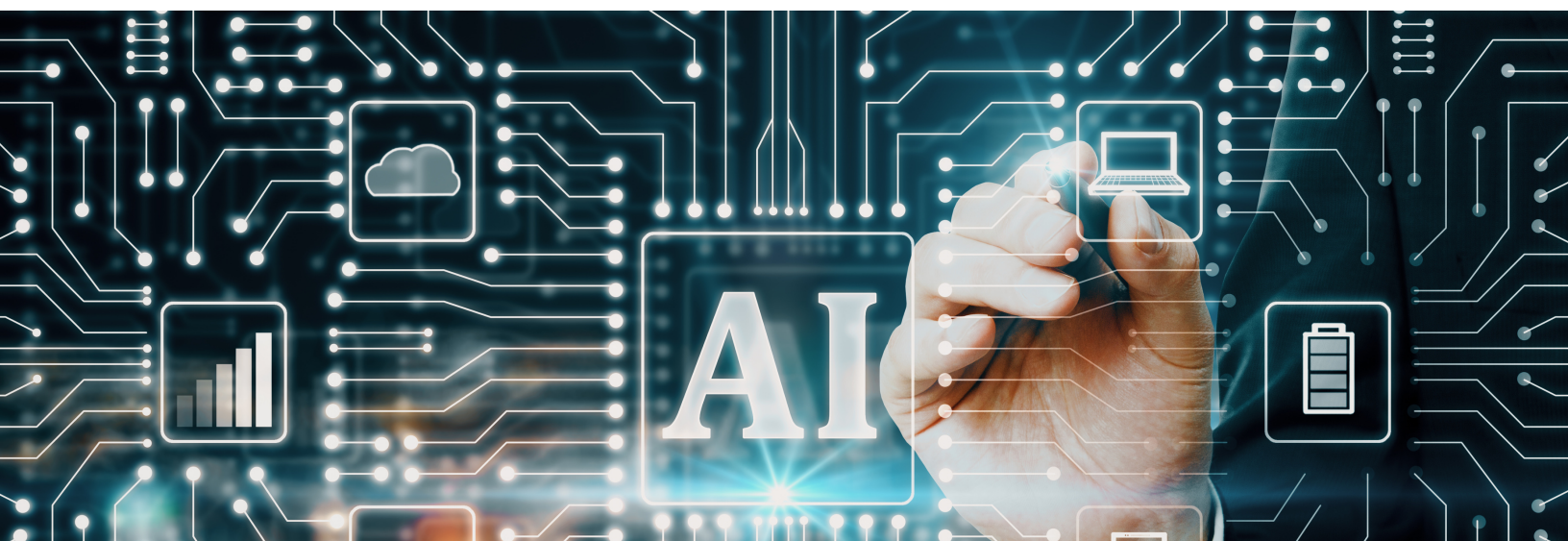Theoretical and Practical Considerations

MITIGATING RISKS
Potential Drawbacks of AI and How to Minimize Them

UNLOCKING POTENTIAL
How AI Can Help Teachers:
- Save Time
- Supercharge Instruction
- Prepare Students for an AI-Driven World

UNDERSTANDING AI

Artificial intelligence tools are a class of technologies designed to replicate or approximate human intelligence. Alan Turing, one of the fathers of computer science, developed a rudimentary test to determine if a computer had achieved artificial intelligence status. Turing proposed that a human judge interact with both a machine and a human. If the judge was unable to reliably distinguish between the two, then the machine should be considered to be intelligent.

Most people would agree that tools like ChatGPT and Google Bard have met this test. The text they generate replicates what an intelligent, informed, creative human would come up with.

But it turns out AI can do far more than write. It can give you the ability to draw, collaborate, or even code in ways you otherwise couldn't. The new AI tools being developed can grant people — and educators — abilities that feel like superpowers!

TYPES OF AI SYSTEMS — STRONG VS. WEAK AI

AI systems are generally classified as either Weak or Strong based on how general their capabilities are. Systems that perform a relatively narrow range of applications are referred to as Weak AI, while systems with more general capabilities are termed Strong AI. There is no distinct line between them, and systems can exist on a continuum between two extremes.

EXAMPLES OF WEAK AI SYSTEMS

Recommendation Algorithms: AI-driven recommendation systems assist educators in suggesting personalized resources and learning materials to students, promoting individualized learning pathways.

Spam Filters: AI-powered spam filters help in managing communication channels within educational institutions, ensuring that important messages reach their intended recipients.

Fraud Detection: AI can identify and prevent academic dishonesty by analyzing patterns in student work and detecting plagiarism.

Facial Recognition: Although a subject of debate, facial recognition technology can enhance security measures in schools and facilitate attendance tracking.

EXAMPLES OF STRONG AI SYSTEMS

Large Language Models (LLMs): LLMs, such as ChatGPT, empower educators with natural language processing capabilities, enabling them to automate content generation, provide feedback, and engage with students efficiently.

Diffusion Model Image Generators: Diffusion models, used primarily in education to generate visual images, can enhance the creation of educational materials, including illustrations and diagrams. Resources like Dall-E, Stable Diffusion, Midjourney, and Craiyon were built using diffusion models, which continue to use more and more sophisticated algorithms to improve the quality of the images they create.
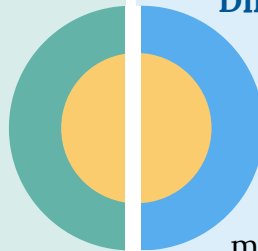
IMPLICATIONS

Understanding the distinctions between Weak and Strong AI is vital for educators. While Weak AI excels at specific, predefined tasks, Strong AI possesses a more flexible and adaptable skill set, making it suitable for a wider array of educational applications. The development of stronger AI systems means that a broader range of individuals can make use of AI capabilities, in a diverse set of circumstances. Whereas AI was previously useful primarily to people working in very specialized fields or on specialized tasks, it can now be used by just about anyone to enhance their productivity and professional practice — including educators!

FURTHER READING

- ChatGPT broke the Turing test — the race is on for new ways to assess AI
- What is artificial intelligence?
- How does ChatGPT Work?

MITIGATING RISKS

Every transformative technology comes with downsides, and artificial intelligence is no exception. It's important for educators — and society in general — to consider the risks associated with AI very carefully, and to take steps to minimize them as effectively as possible. As educational leaders, we can take proactive steps to capitalize on the benefits of AI while limiting its potential detriments.

SOCIETAL RISKS

World Destruction: Science fiction often portrays AI as a threat to humanity, stoking fears of a future dominated by machines. It's natural to jump to these deep-seated Hollywood images, and it's important for the technology sector and policy experts to consider how to guard against situations like this in the future. However, current AI systems do not pose an existential risk. Educators can help students distinguish between fictional narratives and AI's real-world capabilities.

Use by Unscrupulous Actors: One of the most dangerous threats currently posed by AI is that it could be misused by individuals in unethical or dangerous ways. People could use AI to influence others through the use of disinformation or propaganda. Consequently, it's critically important to help students learn and develop information literacy skills to minimize their susceptibility to the influence of bad actors utilizing AI for unscrupulous purposes.

> **WHEREAS AI WAS PREVIOUSLY USEFUL PRIMARILY TO PEOPLE WORKING IN VERY SPECIALIZED FIELDS OR ON SPECIALIZED TASKS, IT CAN NOW BE USED BY JUST ABOUT ANYONE.**

Loss of Humanity's Intellect: Some people fear that the rise of AI could lead to the loss of human intellect. They worry that as we increasingly depend on AI for tasks and information, we might become too dependent, and our critical thinking skills may decline. There's a concern that we'll forget how to solve problems, make decisions, or think creatively on our own. However, AI can actually be a valuable tool to enhance our abilities, not replace them. Instead of fearing a loss of intellect, we should focus on using AI to complement our skills and free up time for more creative, complex tasks. By embracing AI as a partner, we can leverage its capabilities to advance and augment our own intelligence, fostering a future where humans and AI work together to tackle the world's challenges.

EDUCATIONAL RISKS

Academic Dishonesty: AI-powered tools can facilitate academic dishonesty. In addition to being unethical, when students use AI to complete assignments, it prevents them from acquiring important skills.

Learning Incorrect Information: Over-reliance on AI-generated content — without critical evaluation — can lead to the dissemination of inaccurate information. It's critical that students learn to evaluate AI-generated content with a critical eye and to fact-check it rigorously.

Data Privacy Concerns: The collection and storage of student data by AI systems raises significant privacy issues, necessitating robust data protection measures. It's important for schools to develop and follow a policy regarding AI tools that protects student data and adheres to the terms of use for specific AI tools. For instance, as of September of 2023, the popular AI system ChatGPT required users to be at least 13 years old.
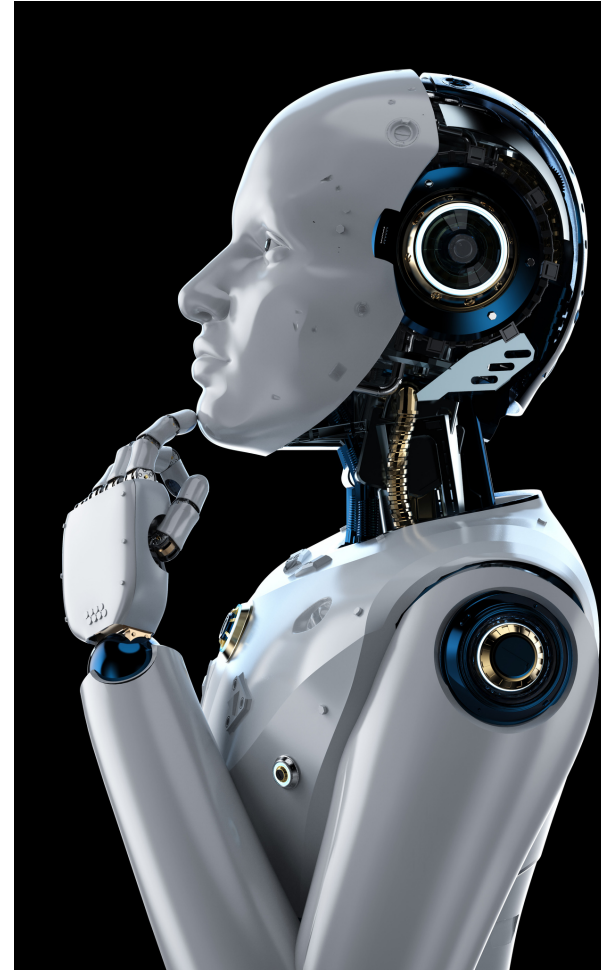
FURTHER READING

- Teachers are on alert for inevitable cheating after release of ChatGPT
- Why Teachers Are Worried About AI
- The Cognitive Cost of AI: Examining the Trade-offs between Convenience and Sentience
- Should AI be permitted in college classrooms? 4 scholars weigh in
- The Foundations of AI Are Riddled With Errors
- How Accurate is Artificial Intelligence (AI)?
- 3 AI Risks and Trustworthiness
- How Could A.I. Destroy Humanity?

SIX WAYS TO MITIGATE RISKS

The creators of AI systems have strong incentives to produce accurate and useful results; their survival as companies depends on it. Developers like Open AI are investing billions of dollars in creating systems that report factually accurate information, avoid bias, and protect user data. However, schools ought to take proactive steps to mitigate educational risks themselves. However, that does not absolve schools of the need to be proactive.

1   **Co-developing Policies and Practices:** Collaborative efforts involving parents, educators, and administrators can lead to the creation of ethical guidelines and practices that promote responsible AI use and that respect the values of the school community.

GUIDELINES FOR POLICY DEVELOPMENT

Ethical Principles: A policy should consider the ethics of AI from several angles. Consider **transparency** by making sure content generated by AI is labeled as such, and that AI-generated content is never published without being reviewed by a human. Emphasizing **equity** ensures equal and appropriate access for all stakeholders — including diverse staff members, students, parents, and other school community members. And **accountability** specifies appropriate actions to be taken in the event that individuals don't adhere to the policy.

Training and Awareness: Seek out appropriate training programs to make sure your staff knows how to unlock the potential of AI tools and how to mitigate the risks.

Data Privacy and Security: Make sure that sensitive personal data — for students and staff — is not shared with AI systems. Ensure that the committee drafting your policy is aware of relevant laws and regulations, and that their policy adheres to them.

Continuous Review and Adaptation: AI is a rapidly evolving field, so policies must be nimble and flexible as a result. Consider piloting AI implementation with select stakeholders and revising policies based on your findings. Make sure to schedule periodic reviews to fine-tune your plan so that AI enhances, rather than detracts from, the learning experience at your school.

2 **Norm Co-creation:** Engaging students in the development of norms and guidelines for AI use fosters a sense of responsibility and ownership over its ethical deployment. This increases compliance and helps students construct their own understanding of when and why AI tools should be used. Discussing specific scenarios can foster independent student application of ethical principles. Use these scenarios to foster rich discussions. Students can rate each scenario from "very unacceptable" to "very acceptable" and explain their reasoning.

SCENARIOS FOR DISCUSSION

Virtual Tutor
Amari has a big test coming up. There is one section in particular that they feel will be difficult. They ask an artificial intelligence program to explain the idea to them, and ask it questions about the parts of the answer that seem confusing.

Visual Appeal
Kai is working on a presentation slide deck. The deck still needs some pictures, and there aren't any great ones online. They use an AI tool to create the pictures they need to make the presentation more appealing.

Spelling & Grammar
Kelsey just finished a paper and isn't sure if there are any spelling or grammar mistakes. She uses an AI tool to check for errors and to suggest improvements.

Persuasive Power
Samir believes that a rule in class should change. They use AI tools to help create a persuasive email and successfully convince their teacher that the rule should be changed.

I Cannot Tell a Lie
George uses AI tools to draft an informational essay. He changes a few parts he doesn't like. When he turns it in, he identifies which parts came from AI, and which he changed.

Essay Way Out
Zara was assigned to write a persuasive essay. She uses AI tools to create a well-argued piece, and she turns it in without acknowledging that she used AI.

Search and Research
Aditi needs to write a research paper. They use AI to recommend what papers they should read to write the best paper. Based on the suggestions, they are able to write a great paper.

For a student-facing version of this activity, use Right or Wrong: When to Use AI.

3

Select Tools Carefully: Some AI systems are designed specifically for use in school. Tools like Stretch, a new chatbot created by the International Society for Technology in Education (ISTE) and the American Society for Curriculum Development (ASCD), is a Large Language Model trained only on materials created or vetted by these two organizations. Although this will not eliminate the possibility of factually inaccurate responses, the hope is that curated, high-quality inputs will improve the quality and appropriateness of AI outputs. Other resources, such as Magic School and Adobe Firefly, are also exploring ways in which to enhance the reliability of AI-generated content.

4

Analog Assessments: Balancing AI-powered assessments with traditional methods ensures a more comprehensive evaluation of students' skills and knowledge. Instead of allowing students to complete assessments electronically, having them write their answers by hand, in class, ensures that their responses will accurately reflect what they can do independent of artificial assistance. Similarly, dialogic assessments, where students verbally report on what they know, can help educators circumvent concerns regarding inappropriate use of artificial intelligence.

5

Detection Services:
Implementing AI-based detection services can help schools identify and mitigate instances of academic dishonesty. However, it's important to recognize that all AI-detection technologies generate both false negatives and false positives. Students who generate answers using AI may be credited as having produced it themselves, and students who write papers for themselves may be falsely identified as having used AI services.

DETECTION SERVICES

Copyleaks consistently performs as the best free AI-detection service, While Winston AI is widely considered the best service among paid detection services. Of course, all offerings have their specific advantages and drawbacks, and the landscape of offerings is likely to change rapidly and regularly.

6 **Authentic Assessment:** The most educationally powerful way to avoid inappropriate use of AI tools is to have students use their skills and understandings to address real concerns in authentic contexts. If students apply their learning toward the resolution of an issue in their community, for example, teachers can encourage the use of AI tools; after all, one of the hallmarks of authentic instruction is that students use appropriate tools in the same way that experts might. Authentic projects might require students to brainstorm with an AI chatbot before choosing the best idea, or they might include having an AI system draft a letter that students then work together to revise and edit. This allows students to gain an understanding of the real power of AI tools to help them accomplish worthwhile objectives.

TRADITIONAL ASSESSMENT

AI-PROOF ASSESSMENT

TRADITIONAL ASSESSMENT	AI-PROOF ASSESSMENT
Research and report on the culture of a Spanish-speaking country.	Research the culture of a Spanish-speaking country and be prepared to present at our school's Hispanic Heritage Month celebration.
Answer a series of questions about linear equations.	Model a real-world scenario that demonstrates a linear relationship, and use it to teach a younger student about linear equations.
Take a multiple-choice assessment on verb tenses.	Create a short film where the narration alters appropriately between verb tenses.
Analyze the theme of a short story.	Interview a senior citizen and construct a short biography of their life, drawing out a theme you've identified.

FURTHER READING

- Amid 'hallucinations,' OpenAI details how it's striving to improve the accuracy and safety of its AI systems
- Norm Co-Creation
- Five Reasons You Should Co-Create Classroom Norms with Students
- Writing by Hand in the Age of AI
- As AI-Enabled Cheating Roils Colleges, Professors Turn to an Ancient Testing Method
- Six Ways to Maximize Authentic Learning in the AI Era
- We gave AI detectors a try–here's what we found
- 12 Best AI Detectors in 2023: From Over 180 Tests (Updated)
- Open AI: Safety and Responsibility

UNLOCKING POTENTIAL

FIVE WAYS TO MAKE AI YOUR TEACHING ASSISTANT

What if you could give every one of your teachers an assistant — someone who could draft letters for them, brainstorm ideas together, or provide a first draft of feedback on student work? Artificial intelligence tools can do just that — and they can do it almost instantly, at any time of day.

1 **Lesson Planning:** AI-powered tools like ChatGPT can quickly and easily turn an idea into a full-fledged lesson plan. If a teacher wants a plan in a particular format, they just have to ask. If they don't like the first idea, they can request a dozen more and select from among them. And of course, the teacher can always edit any portion of any plan to make it their own.

2 **Writing Letters/Emails:** AI can assist educators in drafting clear and concise communication with students, parents, and colleagues, saving time and ensuring effective communication.

3 **Providing Preliminary Feedback to Students:** AI systems, such as ChatGPT, can review and provide initial feedback on student assignments, offering suggestions for improvement. Teachers can even enter their rubric into the system and it will give specific feedback aligned to the teacher's determined criteria. Teachers can then review and modify the suggestions before sharing with students.

4 **Drafting Examples for Instruction:**
Students learn by seeing examples of what they're studying. Teaching persuasive essays? They need to see a lot of persuasive essays. To understand how to structure a claim-evidence-reasoning, they need to see a load of examples. Until recently, these have been difficult and time-consuming to obtain. AI tools, however, can generate these examples in seconds; they can even create poor examples for students to study and critique. Educators can leverage AI to develop models that enhance students' understanding.

> **AI TOOLS ALLOW TEACHERS TO DEVOTE LESS TIME TO DRUDGERY AND MORE TIME TO HIGH-LEVEL, IMPACTFUL WORK.**

5 **Eliminating Mental Blocks:** AI can help teachers overcome creative or cognitive blocks by offering innovative suggestions and alternative perspectives. Whether you need ideas for engaging a struggling student or adapting a tired lesson, you can generate dozens of ideas using AI, then select your favorite.

When serving in this "teaching assistant" role, AI tools allow teachers to devote less time to drudgery and more to high-level, impactful work.

FURTHER READING

- Lesson planning with AI: Save time and get ideas
- Using AI to Help Organize Lesson Plans
- With ChatGPT, Teachers Can Plan Lessons, Write Emails, and More
- How Teachers Can Use ChatGPT To Assess Students and Provide Feedback
- How to Use ChatGPT as an Example Machine
- Teacher Instruction: ChatGPT as a Teaching Assistant
- The Future of Education?: The Secondary ELA Teacher's New Virtual Assistant

SIX WAYS AI CAN GIVE YOU SUPERPOWERS

Every teacher has some superpowers. Some are artists. Others are incredible wordsmiths. Some build amazing resources. Others adapt well to student misunderstandings. By utilizing AI tools effectively, a teacher can have ALL of those superpowers — the only limit is their imagination!

1 **Art Creation:** AI-driven tools like Dall·E enable educators to create art and visual content tailored to various subjects, enhancing visual learning experiences. These systems can generate pictures that follow the conventions of specific artistic styles or movements, and can accommodate literally any requests as far as the composition of the pictures they generate.

2 **Pursuing Curiosity:** AI-powered chatbots and virtual assistants can provide instant answers to students' queries, encouraging self-directed learning and curiosity. For instance, in this AI Discovery Quest, a simple prompt to ChatGPT allows students to explore any topic that interests them in an interactive way. Students can ask follow-up questions or seek additional information based on AI responses and can follow their curiosity in fascinating, engaging ways.

3
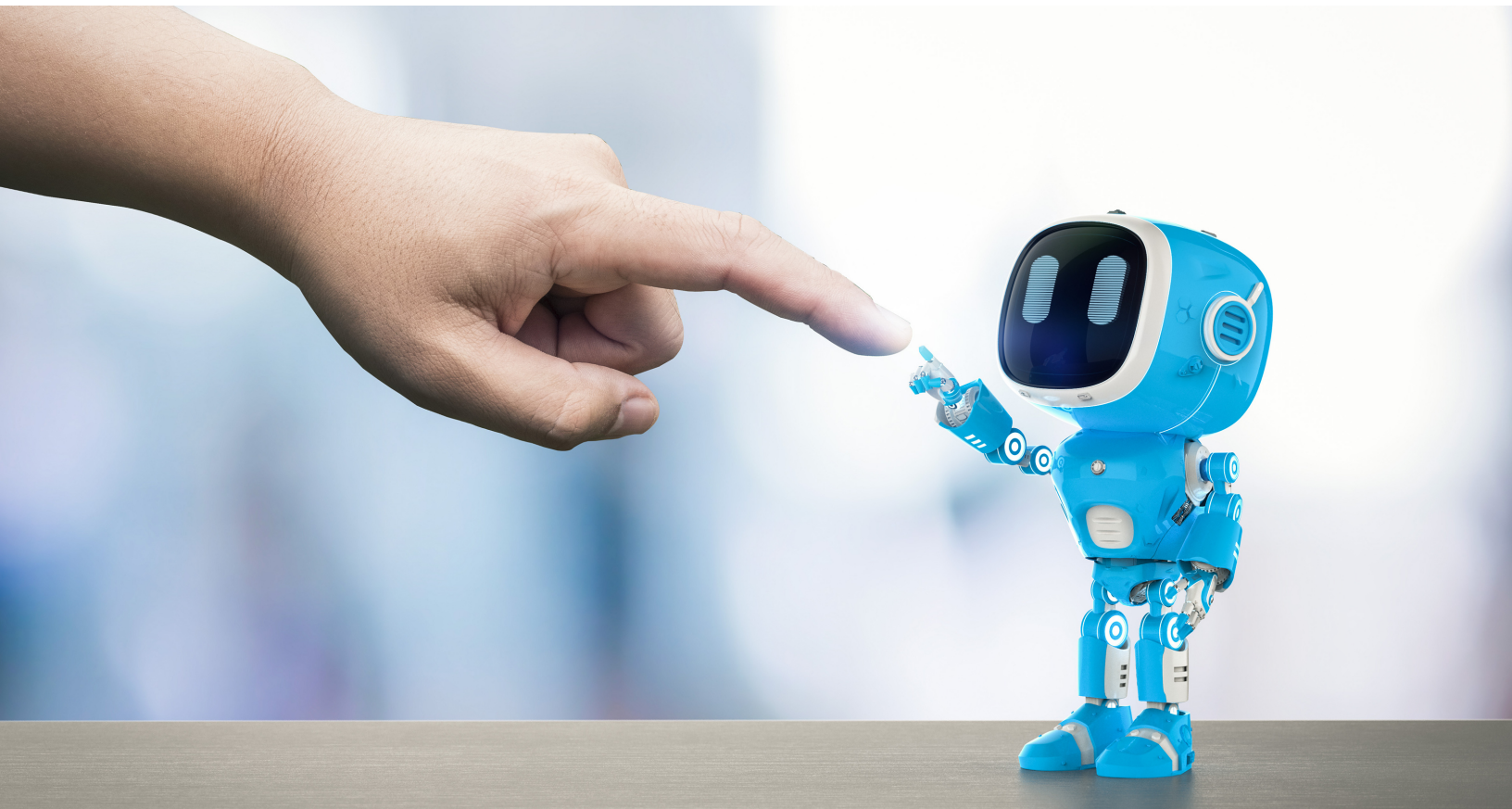
Adujsting Text Difficulty: AI-generated texts can be customized to suit the reading levels and comprehension abilities of students with varying needs. They can help you adjust text to make it more accessible for students with disabilities or for English-language learners.

4

Providing Clarification Based on Student Answers: AI can analyze students' responses to questions and provide tailored explanations, adapting to individual learning styles. In essence, this provides customized tutoring. Students who study with an interactive AI tool like ChatGPT can explore their specific misunderstandings in a conversational way.

5

Meeting History: Let your students converse with any figure from history, from Abraham Lincoln to Zelda Fitzgerald. AI systems can respond to student inquiries in the voice of the figure, providing valuable insight into the subject's life and experiences.

6

Crossing Language Barriers: Teachers can connect with English-Language Learners more easily and effectively with the powerful translation capabilities of AI tools like ChatGPT. Assignments can quickly and easily be converted to a student's native language. And parents who are non-native speakers greatly appreciate learning about their students' progress in their native language, too.

AI's role in enhancing creativity, innovation, and engagement is paramount in today's education landscape, encouraging students to explore their unique potentials.

FURTHER READING

- DALL·E: An "Intelligent" Illustrator for your Classroom
- Artificial intelligence is already changing how teachers teach: Sparking Ideas
- AI creates texts for people with reading difficulties

FOUR PRACTICAL ACTIVITIES TO PREPARE STUDENTS FOR AN AI-DRIVEN WORLD

Educators have a pivotal role in preparing students to navigate an increasingly AI-driven world, emphasizing the development of the skills students will need to thrive.

1 **Providing Uniquely Human Value:** Educators must highlight the distinctive qualities that make humans irreplaceable, such as emotional intelligence, creativity, and critical thinking. One simple way to emphasize this is by challenging students to look at the output of an AI system, then figure out how they can improve it. This game of "Beat ChatGPT" highlights the need for students to add value beyond that which can be provided by AI.

SAMPLE BEAT CHATGPT CHALLENGES

ChatGPT thinks these are interesting questions for kindergartners. Can we come up with a better list of fascinating wonderings than ChatGPT?

ChatGPT has explained how it solved this mathematical problem involving multiple steps. Can our class find a simpler way to solve it?

Take a look at this sonnet, produced by ChatGPT. Can our high school English class identify ways in which it could be improved?

For more "Beat ChatGPT" challenges, organized by grade bands and content areas, use the resource Beat ChatGPT; The Game.

2 **Encouraging True Creativity and Weirdness:** AI can assist in generating ideas and solutions, but genuine creativity often arises from unconventional thinking and unique perspectives. Integrating lateral thinking exercises — for instance, challenging students to identify uncommon uses for everyday items — can help students exercise their creative thinking skills. Developing the capacity to think creatively helps prepare students to thrive in an AI-driven future.

3

Cultivating the Joy of Thinking: Fostering a love for learning and thinking is essential. It emphasizes the intrinsic rewards of intellectual exploration. Encourage students to revel in puzzling things out, and in discovering the joy of discovery. For instance, turning a lesson into a crime scene where students have to use what they've learned to solve the case, engages student minds in an enjoyable way. With AI tools, building a crime scene lesson becomes a snap!

4

Fostering Human Connections and Interpersonal Skills: Interpersonal skills, including empathy, communication, and collaboration, are vital in an era where human connection remains invaluable. Experiences that help students connect with people with different backgrounds — from younger students to senior citizens — can dramatically improve student interpersonal skills.

INTERPERSONAL SKILL EXERCISES

Empathy Mapping: Dive in more deeply to an interpersonal interaction by having students describe what another person says, does, thinks, and feels. An Empathy Map can help students better understand someone else's perspective and emotions.

Collaborative Storytelling: Gather participants and have each one sequentially contribute to a story about a classroom event, ensuring cooperation and collective creativity throughout the process. Explore the Storytelling Relay to see how this might play out in a classroom.

Peer Support Systems: Pair individuals of similar age or experiences and encourage them to offer each other emotional and practical support to navigate challenges and achieve mutual goals. Organizations such as Mind Share offer support to schools in building peer listening programs.

Community Service Projects: Identify a community need and organize volunteer initiatives to address and benefit that specific area, fostering positive societal or environmental impact. Blue Apple projects support teachers in implementing service-oriented projects with a rich academic focus.

FURTHER READING

- [AI Could Help Free Human Creativity](#)
- [Why generative AI needs a creative human touch](#)
- [Thunking vs Thinking: Whose Job Does AI Automate?](#)
- [The role of soft skills in the AI era](#)
- [The importance of interpersonal skills in the age of AI](#)

CONCLUSION

Artificial intelligence presents a transformative opportunity for education, provided that administrators, educators, and policymakers navigate its integration with care and foresight. AI has the potential to revolutionize teaching and learning, making education more personalized, efficient, and engaging. However, it also poses ethical, privacy, and pedagogical challenges that must be addressed.

By understanding what AI is, its practical applications, and strategies to mitigate risks, school administrators can facilitate the responsible integration of AI in education. Moreover, they can empower educators to leverage AI as a teaching assistant, expand educational possibilities, and prepare students for an AI-driven future.

As we look ahead, the human element in education — encompassing creativity, empathy, and meaningful connections — remains irreplaceable. Educators are instrumental in nurturing these qualities while harnessing AI as a tool to enhance the educational experience. The future of education lies at the intersection of human ingenuity and artificial intelligence, where students are prepared not just for the world as it is but for the world they will inherit — and the world they will shape.

IF YOU WOULD LIKE A PARTNER IN HELPING MITIGATE RISKS OF AI WHILE UNLEASHING ITS POTENTIAL, WE'D LOVE TO HELP.

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