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The K-12 Technology Leader's Guide to Artificial Intelligence

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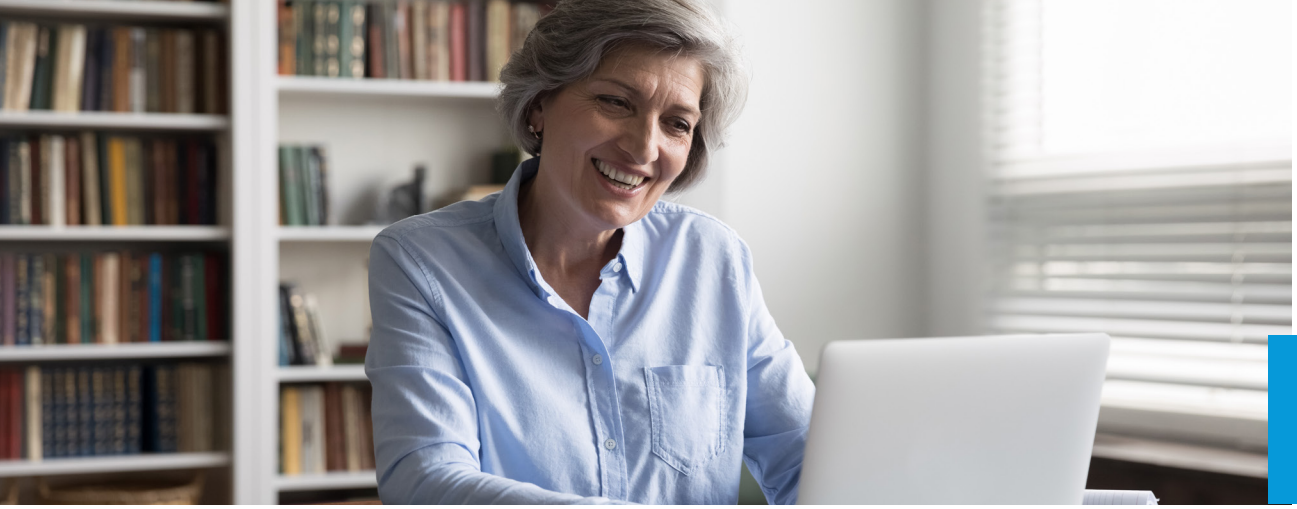


Introduction

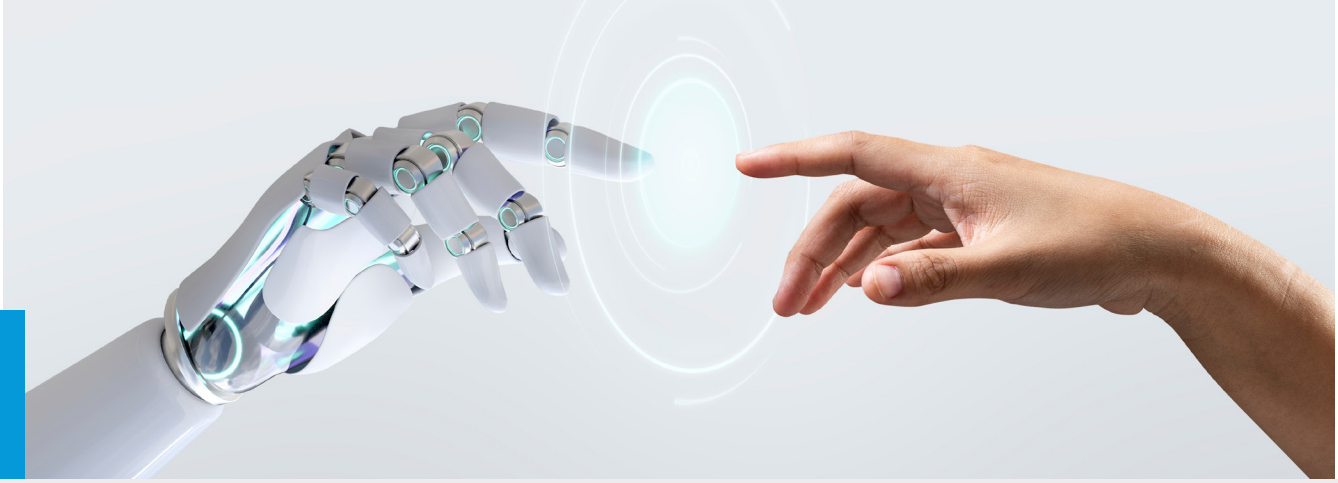
Since ChatGPT arrived on the scene in November 2022, conversations around artificial intelligence (AI) have skyrocketed. Everyone is wondering how to use this new technology and what it means for society at large — especially educators.

As a K-12 technology leader, you're likely on the receiving end of many questions and conversations around your school's use of AI. While there is no one right way to approach AI, there's one thing we can all agree on: we can't ignore it. AI tools are already present in many areas of our lives and will soon be ubiquitous.

From curiosity to excitement, anxiety, even fear, there are many emotions and opinions surrounding this topic. The Association of Technology Leaders in Independent Schools (ATLIS) and Veracross have created this guide for K-12 technology leaders to help you navigate tough conversations about AI at your school. As you speak with your head of school, teaching staff, and parent community, we hope you find this resource helpful to demonstrate the value of AI and establish an ethical use-case for this tech at your school.

AI 101

Before we dive into things, there are a few vocabulary words and definitions you should know.



Artificial intelligence (AI): a branch of computer science that uses hardware, algorithms, and data to create "intelligence" to do things like make decisions, discover patterns, and perform an action.

Generative Pre-Trained Transformer (GPT): a language model that relies on deep learning and text-based inputs to generate human-like text responses.

Large Language Model (LLM): a computer program that has been trained on a lot of text data and can understand and generate human language.

Algorithm: the rules that determine what actions an AI system takes.

Machine learning: a field of study with a range of approaches to developing algorithms that can be used in AI systems.

Brief History of Artificial Intelligence

In order to understand today's AI advancements, we need to first take a look at its origins. While it might feel like ChatGPT came out of nowhere, in reality AI has been around since World War II!

1942

In 1942, German engineer Arthur Scherbius invented the Enigma machine to encrypt and decrypt secret messages. The machine itself did not use AI but laid the groundwork for advanced mathematical techniques and cryptography that would later inform the development of artificial intelligence.

1950

Alan Turing was one of the codebreakers who worked to decipher Enigma messages. In 1950 he created the Turing test to assess a machine's ability to display human-like behavior and intelligence.

1955

The term "artificial intelligence" was coined in 1955 by mathematician and computer scientist, John McCarthy. That same year he developed lisp, a prominent programming language used in AI and robotics.

1966

In 1966, a natural language conversation program named ELIZA was created. This chatbot was the first program that allowed humans and machines to communicate in a conversational way.

1997

IBM developed the chess-playing computer, DeepBlue, in 1997. The computer faced off against chess champion Garry Kasparov — and won! This innovation marked a turning point in AI as people began to realize that machines can outsmart humans.

2008

In 2008, Apple unveiled iPhone voice recognition. This feature has since become a key feature of AI, paving the way for virtual assistants Siri (2011) and Alexa (2014).

2022

Artificial intelligence company OpenAI released ChatGPT in November 2022. As the most advanced chatbot in AI technology, it has passed the bar exam, the SAT, various AP exams, the Wharton MBA exam, and the U.S. Medical Licensing Exam. ChatGPT has ignited a conversation around the future of education, technology, and even culture.

***Note:** this is not a comprehensive list. These milestones represent a small fraction of the contributions to AI technology over the years.*

A New Kind of Intellectual Revolution

Since the invention of the microchip in 1970, technology has progressed at a relatively consistent pace. Gordon E. Moore, the co-founder of Intel, observed that the number of transistors on computer chips doubled every two years. This discovery is recognized as Moore's Law and held up until recently.

These days, technology is progressing more rapidly: transistors are now doubling every six months. Coupled with the latest advancements in AI, technology is operating at a faster pace than we're accustomed to. Experts are comparing these developments to the invention of the printing press and are referencing a new kind of "intellectual revolution."

> ***"We're standing at a moment in time that's a paradigm shift. This tech is a game changer — sort of like when computers were introduced to schools, but bigger."***
>
> *- Christina Lewellen, Executive Director at ATLIS*

The onset of ChatGPT opened the door to a conversation larger than itself. The intellectual revolution is not coming; it's here. AI tools are already integrated into our smartphones, word processing systems, and social media platforms (to name a few). How we respond in the coming months and years will determine the future of our schools and even our society.

Embracing the Opportunities

This brings us to today. Now that we understand the breadth of AI and why it's on everyone's mind, we can explore the capabilities of this technology for education.

There are many benefits to incorporating AI tools into our classrooms. On the surface, ChatGPT and similar tools can boost efficiency, streamline workflows, and help brainstorm new ideas. Here are a few ways teachers, staff, and even students can benefit from this tech.

FOR TEACHERS

The last few years have highlighted how overworked and underappreciated K-12 teachers are. ChatGPT and other AI tools can help teachers reclaim their time in many ways:

- Write a performance evaluation
- Create a new lesson plan
- Draft a difficult email to parents
- Generate quizzes
- Convert text into charts and graphs

FOR STAFF

AI can be transformative on the business side, too. Here are a few ideas to utilize AI to save time and improve office efficiency:

- Write a K-12 cyber incident response plan
- Draft mission statements, speeches, and scripts
- Create inclusive job descriptions and employment offer letters
- Conduct market research and analysis
- Synthesize meetings with live transcription

FOR STUDENTS

AI can be a valuable thinking partner for students. Here are some prompts to encourage thoughtful use of this technology:

- Create a PowerPoint presentation
- Summarize a long video
- Generate an outline for a research paper
- Practice communicating in a different language

For students, it's important to emphasize the partner aspect of AI; encourage them to use ChatGPT and related tools as a starting point, not the finish line.

Beneath the surface, there are larger conversations around the use of AI and what it means for the future of teaching and learning. Education reform has been a widely discussed topic for years. Many educators are viewing AI as the catalyst for this much-needed change and an opportunity to reframe traditional teaching and learning methods.

For example, exams often follow a similar format. Students prepare for the test with a quick study session and recite information back during the assessment. Did they truly learn what they were taught, or did they simply memorize it only to forget it once the test is completed? With the introduction of ChatGPT, students have even more tools available to thoughtlessly complete assignments. Educators are recognizing the need for new assessments that go beyond simple recitation and require students to develop critical thinking skills.

> ***"Are there ways we can assess students that don't involve simple prompts and require a recognition of deeper learning to make sure students truly understand?"***
>
> *- Tye Campbell, Director of Strategic Information and Innovation at Gilman School*

Independent schools strive to prepare students for the future. This mission extends beyond simple college preparation, but into other areas of life. Many educators are passionate about AI for this very reason. Students will get their hands on ChatGPT whether it's allowed in school or not; by thoughtfully incorporating it into our classrooms, we can establish guidelines and teach them how to harness this tech in a productive way. As educators we can drive the conversation and help our students develop critical literacy, empathy, and become mindful citizens of the world.

Recognizing the Dangers

Although AI can empower teachers, optimize staff workflows, and aid students' learning, it's not all sunshine and rainbows. There are some serious ramifications and downsides to consider.

The obvious concern with tools like ChatGPT in education is **plagiarism**. Students now have an endless source of ideas and images to pull from, without doing any of the critical thinking associated with learning. There are some AI detection tools that can theoretically flag AI-generated content, but they are not widely seen as reliable. The best method against AI plagiarism is to teach students how to use it in productive and responsible ways.

As more students use AI to brainstorm ideas or kickstart projects, there is also a major question about the **credibility of the information** they're using. ChatGPT and similar tools are trained on text written by humans and pulled from the internet; it's not going to be accurate every single time. Test prompts have even shown ChatGPT to make up resources that don't exist. Some AI tools, like Bing AI, are starting to cite their sources, but it's still important to remain vigilant and encourage the use of trustworthy information.

Similarly, AI is helping individuals create and share **false information**. We've already seen this happening, but now it's occurring on a larger scale. With platforms like Dall-e or Midjourney, individuals can create realistic images of virtually anything. An image of the pope wearing a puffer coat recently went viral, for example. The image itself was harmless but sparked a flurry of engagement and conversation online before eventually being debunked. What happens if the information isn't so innocent? In a school setting, these fake images could lead to new and cruel bullying tactics.

"It was hard enough for our learners to be discerning of content before, but now even more so."

- Christina Lewellen, Executive Director of ATLIS

Deepfakes are also happening more frequently. This is when someone's likeness is digitally altered to appear as someone else. Today's technology makes it nearly impossible to distinguish the false representation, enabling media outlets or malicious individuals to spread their own agendas in unassuming ways.

Audio deepfakes are a new concern; bad actors manipulating one's voice to pose as someone else. It only takes AI three seconds of listening to an audio clip to replicate the voice. Think about the ramifications of this capability. Someone could easily impersonate your head of school to demand money from your CFO or pose as a student on a field trip crying for help. Speak with your communications team and be mindful of the photos, videos, or media files that you release. Anything that your school publishes online can be used against you and your community.

AI tools also open the door for **bias**. After all, these platforms were created by humans who inherently have their own prejudices and opinions. Algorithms are notably biased and have been proven to favor certain genders and ethnicities. To use these platforms ethically, we need to be aware that they are not the single source of truth and maintain a well-rounded perspective.

How Independent Schools Can Respond

After reviewing the downsides of AI, it's easy to see why some people are hesitant or even fearful about this technology — particularly in a school setting with adolescents. As technology leaders, how can we respond in a thoughtful way and take action?

ADDRESS THE FEAR

There are a slew of reasons why someone might be reluctant to embrace AI. Teachers might fear that their relevance is disappearing; parents might worry about their child's critical thinking skills; school leaders might have ethical or legal concerns.

Instead of dismissing or minimizing someone's hesitation, acknowledge the fear and reframe the conversation to focus on the bigger picture. "Yes, this is scary but think of all the opportunities it presents to improve our workflows and students' learning journeys." Once you address the elephant in the room, you can have deeper conversations around it.

EMPHASIZE THE NEED

It's not a question of if your school will use AI, but how. Many people don't realize that they're already using AI features in everyday life (whether they like it or not!). Use relatable examples to show concerned staff or parents that this technology is omnipresent and it's up to us to establish our moral guidelines for introducing it to our school community.

IDENTIFY YOUR GOALS

As with any new school technology or initiative, it's important to be clear about your motivation for introducing or embracing AI. Think about these tools and how they can support your school's mission. Then make a list of your goals and how you plan to reach them in a mission-aligned way.

Does your school seek to prepare students for the future? Digital literacy is critical in today's world — learning how to use AI will help students master this skill. Do you want to reframe learning assessments? AI tools are a powerful motivator for this change. Focus on helping students retain information long-term, not recite information for the next quiz. If you can identify goals that match your overarching school mission, you'll generate buy-in and support.

GUIDE THE MOVEMENT

As independent school educators, we are in a prime position to drive the conversation around the ethical use of AI. This technology is not going away, it's only going to get more and more powerful. Our schools and our society need thoughtful leaders to set boundaries and moral guidelines.

Remind your constituents that your school is the safest place to explore this technology. By approaching it strategically and in a mission-aligned way, your community will learn how to interact with AI in positive and productive ways.

How to Approach AI in the Classroom

You've addressed the fear, emphasized the need, identified your goals, and guided the conversation around AI. Now what? Once you've gathered buy-in for how your school can and should use this technology, you can make a plan for incorporating AI tools into your teaching and learning practices.

The Kinkaid School in Houston, Texas took a three-pronged approach to AI: research, review, and educate.

RESEARCH

After observing the rapid scale of AI innovation, Vinnie Vrotny, Director of Technology, established a faculty AI research group to explore this tech at Kinkaid. The group was open to anyone interested in participating and allowed for a wide range of perspectives. These faculty members experimented with AI across various classroom projects to gain first-hand experience and student observation.

Consider starting a faculty research group at your school. Survey your colleagues to find out who's already using AI and what they've observed thus far. Start meeting bi-weekly and sharing your discoveries.

REVIEW

The faculty research group surveyed students about AI: what tools do they use? What issues have they had? How do they feel about it? What do they want to learn more about? These reflections were taken into consideration as the research group established acceptable use guidelines for the school. They reviewed current academic policies and proposed changes to accommodate new parameters for AI.

As you think about updating acceptable use policies and academic integrity statements at your school, be specific. Looking for guidance? Style guides like MLA and Sentient Syllabus have rewritten their guidelines to reflect acceptable AI use.

EDUCATE

The final step in Kinkaid's approach to AI was education. Vrotny knew that people had questions and concerns. He established professional development opportunities for faculty and staff to learn more about this technology and was intentional about sharing updates or new discoveries in staff meetings. For parents, Vrotny included helpful resources in the school's weekly newsletter to help parents understand AI and how to discuss it with their children. Lastly, Vrotny and the faculty research group proactively discussed AI with their students to help them develop awareness of when they're using AI, ethical use of these tools, and what biases might be affecting them.

Education around AI is an ongoing effort — and there will always be hesitant or disgruntled participants! Here are a few activities to help you start the conversation:

- In your next staff meeting, have everyone take out their cell phone. Ask them to open a new text message and type "I like to..." Their smartphone will automatically complete the sentence with predictive text. Each response will be unique based on the phone's owner. Use this exercise to demonstrate the personalized nature of AI.

- In an upcoming newsletter, share a CAPTCHA image with a question of "How many times have you completed one of these tests?" Everyone recognizes CAPTCHA, but they might not realize it's an example of AI at work. Educate your audience by explaining the mechanics behind CAPTCHA and how AI is already engrained in our daily lives.

AI Action Plan

We've covered a lot of information in this eBook! As you think about the future of AI at your school, make a plan for exploring and addressing this technology within your community. Print a copy of this checklist to help you stay accountable.

- ☐ **Survey your constituents** about their feelings, fears, and use of AI. Use these findings as a starting point for educating your community about this technology.
- ☐ **Form a faculty research group.** Identify areas of opportunity to experiment with AI and gather actionable results.
- ☐ **Establish goals.** Meet with your school leaders to identify how you can approach AI in a mission-aligned way. Be specific and make sure to consider different user groups.
- ☐ **Set expectations.** Update your acceptable use and academic integrity policies to reflect your school's goals and guidelines for using AI.
- ☐ **Educate your community.** Find opportunities to regularly share updates about new guidelines, tools, and helpful tips for using AI.
- ☐ **Plan for the future.** This conversation is continually evolving. Make a plan for how you will address the situation in 10 days, 10 weeks, and 10 months from now.

About the Authors

Veracross is the leading provider of student information systems for private and independent schools. With a unique single-record database, Veracross helps unify school communities, improve communication for parents, and streamline workflows for faculty and staff. Visit **https://www.veracross.com/** to learn more.

The Association of Technology Leaders in Independent Schools (ATLIS) is a growing association of more than 300 independent schools dedicated to empowering schools to thrive through technology leadership. Founded in 2014 to address the unique challenges of independent school technology directors, the organization has now expanded to support all aspects of technology at schools, ensuring that they are equipped for the future. Across all dimensions of its practice, ATLIS is also dedicated to creating a diverse and inclusive association. Visit **https://theatlis.org/** to learn more.