

# Crandall ISD: Overview of AI and Its Impact

## What is Artificial Intelligence?

“Artificial intelligence is the capability of a computer system to mimic human cognitive functions such as learning and problem-solving.”<sup>1</sup>

Artificial Intelligence, AI, is increasingly incorporated into many of the most common technology platforms that people interact with on a daily basis. From search engines to productivity applications to physical security systems – AI is everywhere (and has been for quite some time). As with any technology, there are benefits and risks associated with the application of AI. While the expansive reach of AI has prompted some public anxiety, it is important to separate fact from (science) fiction when engaging in conversations about the technology and its impact.

## Concerns about Artificial Intelligence

Recent news cycles have been dominated by discussions about sophisticated AI chatbots like

- ChatGPT
- Google’s Bard
- Microsoft’s Bing Chat

Some areas of concern include

**Education**—The education sector has featured prominently in many of these discussions, as concerns over the bots impact on cheating and academic integrity. Some school districts and universities have moved to limit student access to the technology as a result.<sup>2</sup>

**Malicious Code**—Other concerns about the technology include its ability to turn natural language into computer code; security researchers have noted that cybercriminals have already begun using ChatGPT to help write malicious code.<sup>3</sup>

**Phishing Attacks**—Other bad actors are using ChatGPT to generate sophisticated and hard-to-detect phishing emails.<sup>4</sup>

**Online Safety and Cyberbullying**—Concerns around online safety and AI-based cyber bullying have also surfaced, driven by bias introduced into bot software through its processing of human interactions on internet forums and social media. This bias has led to unpredictable interactions with the chat bots; one journalist even described Bing Chat’s behavior as “unhinged” and “emotionally manipulative.”<sup>5</sup> Bing Chat is powered by the ChatGPT engine developed by the company OpenAI in which Microsoft has recently invested billions of dollars, promising additional integrations across many of its popular

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<sup>1</sup> Source: <https://azure.microsoft.com/en-us/solutions/ai/artificial-intelligence-vs-machine-learning/#introduction>

<sup>2</sup> Source: <https://www.nbcnews.com/tech/tech-news/new-york-city-public-schools-ban-chatgpt-devices-networks-rcna64446>

<sup>3</sup> Source: <https://www.forbes.com/sites/thomasbrewster/2023/01/06/chatgpt-cybercriminal-malware-female-chatbots/?sh=324d9c145534>

<sup>4</sup> Source: <https://www.digitaltrends.com/computing/chatgpt-hack-allows-chatbot-to-generate-malware/>

<sup>5</sup> Source: <https://www.theverge.com/2023/2/15/23599072/microsoft-ai-bing-personality-conversations-spy-employees-webcams>

consumer products.

## Benefits of Artificial Intelligence

Despite the amount of alarmist discussion online about the dangers AI, it's important to recognize the overwhelming positive contribution the technology is making in other technology spheres. For every negative application of the technology detailed in the media, many more positive applications can be found quietly improving everyday life. As detailed in the Microsoft blog post referenced at the beginning of this synopsis, artificial intelligence has been introduced into software used across many sectors of the modern economy.

**Industry**—From healthcare to travel to entertainment, industries that intersect nearly every aspect of daily life have raced to adopt some form of AI into their business models. Doctors use AI to help diagnose patient symptoms related to kidney diseases.<sup>6</sup>

**Government**—The FAA uses AI-powered algorithms to predict travel patterns, using this information to more efficiently allocate funding to terminal operations and improvements.<sup>7</sup>

**Entertainment**—And nearly everyone is familiar with the personalized experience streaming entertainment providers, from Spotify to Netflix, provide thanks to machine learning models that constantly processes customer interaction on their site to deliver unique content options and increase engagement.

**Technology**—One of the more fascinating aspects of AI and its disruption of the technology sector is how it is being used by many tech companies to build solutions to address with AI, perhaps ironically, some of the concerns AI has introduced in fields like cybersecurity and education.

AI is so prevalent across the technology sector, in fact, that it would be difficult to identify an industry that it has not impacted.

## Crandall ISD and Artificial Intelligence

Many of the tools Crandall ISD is using to improve physical and cyber security of district resources and assets leverage AI to deliver improved outcomes.

**Endpoint Security**—District endpoint security software, for example, uses machine learning to detect and shut down sophisticated attacks (i.e. ransomware, data exfiltration, etc.) before they wreak havoc on our systems.

**Web Filtering**—District web filtering technology uses AI to help categorize online resources and content in near real-time, helping keep students and staff from visiting malicious or inappropriate sites on the internet.

In short, Crandall ISD's Technology Department is leveraging AI across its technology footprint to help mitigate many of the negative disruptions AI has introduced in other fields.

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<sup>6</sup> Source: <https://healthtechmagazine.net/article/2022/12/ai-healthcare-2023-ml-nlp-more-perfcon>

<sup>7</sup> Source: [https://www.faa.gov/data\\_research/aviation](https://www.faa.gov/data_research/aviation)

## Collaborative Efforts

As AI continues to impact the education sector with the evolution of sophisticated chat bots, the Technology and Curriculum and Instruction divisions have begun a strategic dialog to respond to many of the changes facing teachers and staff.

### *Blocking Access*

At this time, we have not recommended any effort to restrict or block access to ChatGPT or similar bots for students or staff. While acknowledging the risk such tools pose to academic integrity, the divisions have also identified many potential advantages to incorporating discussions about AI (and bots in particular) into student educational programs. This effort mirrors similar initiatives by other K12 educational entities described in an excellent article posted to Wired.com titled, appropriately, 'ChatGPT Is Coming for Classrooms. Don't Panic'.<sup>8</sup>

## AI in the Classroom

We anticipate that AI will be increasingly utilized in the classroom to enhance the teacher and student experience. Chat GPT and similar programs are expected to become time-saving resources for teachers and ways of enhancing learning for students. Potential applications of AI on the horizon in the educational setting include:

- Analysis of assessment results
- Virtual tutoring and feedback for students
- Lesson plan review and recommendations
- Automated testing, assessment item development
- Presentation builders using teacher content
- Professional learning recommendations based on interests and areas of need
- Curriculum evaluation and feedback
- Content creation
- Summaries of research on educational trends

## The Future

Given the rapid and dynamic nature of the field of artificial intelligence, and the novel ways in which it continues to impact education, the partnership between Technology and C&I will be an ongoing endeavor with new guidance provided regularly to the Board of Trustees as new threats (or potential opportunities) emerge.

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<sup>8</sup> Source: <https://www.wired.com/story/chatgpt-is-coming-for-classrooms-dont-panic/>