

# AI, Ethics and Education: The Pioneering Path of Sidekick Academy

Elizabeth Radday, Matt Mervis

EdAdvance

radday@edadvance.org, mervis@edadvance.org

## Abstract

Generative artificial intelligence (AI) is swiftly cementing its role as an indispensable tool for students transitioning from K-12 to higher education and professional spheres. Yet, harnessing its full potential requires more than mere familiarity. Students must be equipped with the skills to engage with AI both productively and ethically. Left unchecked, AI usage can pose risks, especially if students lack proper guidance or understanding of their actions. Moreover, effective interaction with AI necessitates skills in prompt engineering to yield desired outcomes. Sidekick Academy is a digital online platform where students can safely experiment with and learn about AI. This article delves into the genesis of Sidekick Academy, offering a glimpse into its lessons on how to use AI and complex debate on ethical use. It also sheds light on the academy's "sandbox" - a secure space for students to explore AI without jeopardizing their safety or privacy.

## Introduction

When ChatGPT became free and available to the public in November 2022, there were instant and strong reactions from educators from kindergarten through graduate school. As students learned of this tool, they quickly discovered that much of their work could be completed with the assistance of ChatGPT. Within weeks there was a battle to prevent or catch students “cheating” while students learned ways around the AI detectors to try to outsmart their teachers. At the same time, teachers started to use ChatGPT (and later many other applications with Generative AI capabilities) to lighten their own workload. Some quickly understood the power Generative AI had to make their current lessons better by being more engaging and less susceptible to AI completion. What most did not recognize is that AI has been part of the classroom for years. From online courseware to adaptive assessments and voice assistants, AI is already embedded in schools in a variety of ways.

Regardless of how teachers and students first viewed Generative AI, just over a year later it is clear that it is here to stay and only continues to grow and change faster than

most people can track it. Many faculty, students and staff have a positive view of AI as a tool in education, but the impact of this tool is positive or extremely positive if and only if it is used correctly (Amani 2023). Generative AI brings a wealth of benefits and potential risks. No one is naïve enough to believe that these tools will not have a resounding impact on the future of learning and work. The students of today will absolutely use Generative AI in the jobs of tomorrow. If we don't teach students now how to use the tools properly, productively, and ethically at their fingertips, we are doing them a huge disservice. They need to understand how and why generative AI works, how to maximize their productivity by using AI to their benefit and understand the risks and ethical dilemmas inherent in using this powerful technology. The most eager teachers understand and support teaching students how to work *with* the AI. The “real potential lies in how educators leverage AI to augment what they do in the classroom, allowing them to be more adaptive to the needs of their students and less consumed by routine, repetitive tasks (CoSN 2023).” But even in the most progressive schools and situations, there are concerns about this instruction. ChatGPT and similar programs do not meet most data privacy requirements for schools in the United States. In that case, schools cannot have students use ChatGPT as part of their class. They could, perhaps, demonstrate ChatGPT on a SmartBoard for students to view, but students should not and could not be required or even allowed to use it as part of their education. Additionally, while many of these programs have installed guardrails to prevent truly nefarious things from being learned (e.g. how to build a bomb), there are plenty of programs without these protections that could open very questionable and downright dangerous content to students. No school wants that on their shoulders. Without being able to safely access a space to practice and use generative AI, teachers are left in limbo. They cannot safely teach how to use it, but they know that their most savvy students are accessing the tools at home. The teachers are also using it to their own benefit but question their own ethics of using it for their job. The savvy students are left to their own devices

to learn how to use an incredibly powerful tool without guidance. And many of these students aren't taking the time to stop and think about the ethics, but instead are searching for ways to avoid detection. Finally, as all of this plays out, inequity grows as those who have internet access and a knowledgeable adult at home are learning about the latest and greatest in technology, while those without those resources are once again behind the curve and are losing out on opportunities to learn and use the technology that will be required for future jobs.

This technology has opened a new need for students and teachers. They need a way to teach and learn about generative AI and have a safe place to practice using it. When the use of computers was becoming ubiquitous, students learned how to touch type in classes and used typing tutors. Students today are taught how to use an assortment of technology tools in education. Now, they need to learn how to use Generative AI. As Yiannis Papelis, research professor and director of the Virtual Reality and Robotics Lab at the Virginia Modeling, Analysis and Simulation Center said in 2018, "Twenty years ago, having computer skills was special. Now having computer skills is commonplace. Twenty years from now, understanding AI will be commonplace." Papelis recommends a top-down approach to teaching students to use AI. He advocates for developing a K-12 curriculum with grade-appropriate lessons that start by defining what AI is and build from there (Kreuger 2018). Sidekick Academy is the response to this need.

### Sidekick Academy Overview

Skills21 at EdAdvance has been a leader in 21<sup>st</sup> Century learning for two decades. The team has created innovative technology solutions for middle and high school problem-based learning since 2001. With support from the National Science Foundation and the US Department of Education, Skills21 has engaged tens of thousands of students in project-based learning and Capstone projects. They aim to be at the forefront of technology and seek to use widely available tech solutions to create equitable opportunities for students to learn to use the most current and imperative technology for college and careers. When ChatGPT hit the scene in late 2022, Skills21 quickly realized the need for students to learn how to use it effectively, safely, and ethically.

Sidekick Academy is an online platform that takes students through a series of tasks to learn about the many ways a tool like ChatGPT can be used to support learning and life. "Sidekick" is the name of the Generative AI tool students learn to use through a series of lessons. This platform was built by the Skills21 team and embeds the ChatGPT API from OpenAI so that students can try out

Generative AI with two very important caveats that are not available in most Generative AI programs. First, Sidekick Academy meets the data privacy agreement threshold and thus is approved for use in schools. Additionally, and perhaps most importantly, every interaction a student has with "Sidekick" is recorded and can be viewed by the teacher and by the team at Skills21. Teachers also have the capability to give students feedback on their interactions, allowing students to learn how to be even more effective and efficient with their prompting. Any time the student is prompted to use Sidekick a statement pops up that says, "*Remember that your conversations are recorded, and your teacher can view your conversation.*"

Each task in Sidekick Academy is accompanied by two videos; one high level video that explains why the skill (such as summarization) is important for learning and a second video that shows how to use the chatbot to accomplish the task. Students first watch the high level 30-45 second video. Next, they watch the video on how to use Sidekick for the task and do the activity that allows them to practice the skill and interact with the chatbot. Finally, students write a brief reflection of what they learned about using AI in that situation and consider the pros and cons of using AI for that task. Lessons are not cumulative so teachers can choose to do lessons in any order they wish or skip lessons altogether. Additionally, after the lesson teachers can read the transcripts of their students' interactions to see if there are patterns of use, misuse, or misunderstanding. These transcripts will be critical for teachers to understand how students are interacting with the technology so that teachers can be more purposeful and targeted in their support for students who do not immediately understand how to interact with a chatbot and what the purpose is. Teachers can also provide feedback, so students get guidance on their prompts and follow up questions.

### Sidekick Academy Curriculum

Using a variety of sources, including ChatGPT itself, the team curated a list of the most common ways students, teachers, and other professionals use Generative AI. Skills21 gathered research and spoke with teachers with whom they have worked. To build the curriculum they referred to the work of Zhang et al (2022). Zhang wrote "... students must learn three core domains of AI: technical concepts and processes, ethical and societal implications, and career futures in the AI era." Each task is part of at least one of these three domains and all three domains are part of the curriculum. All tasks allow a student to try out a different way to use Sidekick. Below are the eight tasks students complete in Sidekick Academy to learn how to use generative artificial intelligence, consider the ethics and recognize the importance of AI in future careers.

## Sum It Up

In this activity, students utilize Sidekick to summarize news or research articles, or other sources of information, enhancing their comprehension and summarization skills. Summarizing not only facilitates a deeper understanding of the main idea but also helps in discerning the utility of the content for their research. After receiving the summary from Sidekick, students are urged to engage more deeply with the content by asking for specific details or requesting direct quotes from the article to foster a detailed understanding. Additionally, they can request Sidekick to create a multiple-choice quiz to further verify their understanding of the material.

## Learn from the Pros

Sidekick has the capability to be assigned a role and have a conversation while playing that role. In this activity, students ask it to play a particular role, like coach, mentor, or topical expert. Then, the student can ask questions as they would with this type of person and have an interactive conversation. For example, a student could ask Sidekick to play the role of cross-country coach and ask for advice for cutting down their 5k time. Based on suggestions from the chatbot they could ask for more details or modifications or a different plan if the one Sidekick suggests doesn't meet their needs.

## Write With Me

One way Generative AI can be helpful is by serving as a co-writer. Sidekick can be used in any language (including computer coding languages). While Generative AI has the capability of writing entire stories from a few ideas, that is not the way this activity encourages students to use it. Instead, this activity asks students to pick a topic and write the first two sentences and then ask Sidekick to write the next two sentences. The student then adds sentences back and forth with Sidekick. Students could also ask Sidekick to help finish a stanza of a poem, help with song lyrics, or give a starting hook sentence or summarizing conclusion sentence based on a paragraph they have already written. Students can also practice using their non-native languages that they are learning in school and work on developing fluency in a new language.

## Think Tank

Brainstorming can be challenging for students and adults alike. Starting any project or task from scratch without some starter ideas can be intimidating. Sidekick is great at brainstorming about almost any topic. In this activity students ask Sidekick to brainstorm ideas on something they want to do. For example, they can ask Sidekick for businesses they can start during the summer to make some

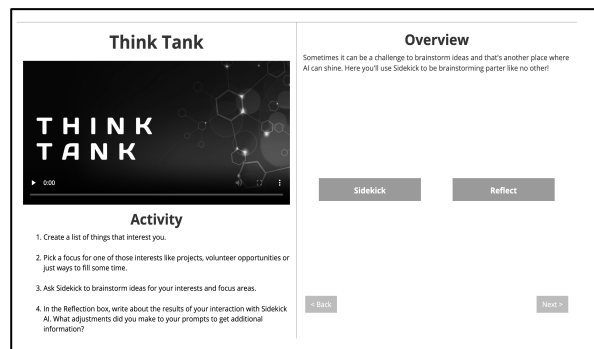


Figure 1: The activity screen for the Think Tank activity on Sidekick Academy.

money. Sidekick could even brainstorm slogans or business name ideas for this venture!

## Just Asking

One way to use Sidekick is to learn about new topics. This activity is about the *conversation* back and forth with Sidekick to demonstrate the unique capabilities of Generative AI versus a traditional internet search with Google. In an internet search, you may or may not get the answers you are looking for based on your query. It may take several different attempts to find what you are looking for. With Sidekick, you can ask a more specific question and get an answer and then continue the conversation to learn more about the topic or to clarify what you are learning. This activity allows students to have a conversation with Sidekick to learn about a topic of their interest through conversation. An additional component of this task is that students learn about the possibility that AI can hallucinate and that when searching for information, resources, or references, it is important to verify the outputs.

## Check It Out

Sidekick can be used to give a student feedback on something they have already written or created. A student can ask it to offer feedback about a specific aspect of their writing and have a conversation about how to make improvements. Sidekick serves as an editor in this instance and can help turn good writing into great writing. The emphasis of this activity is on *editing* student work, not *creating* the students' work.

## Ethical Navigator

In this activity, students are guided to navigate the complex landscape of ethics in AI use. The "Ethical Navigator" introduces them to real-world scenarios where they must apply ethical reasoning to navigate situations that may arise when using AI tools. Students start by watching a brief video that outlines a real-world scenario involving AI use, such as

bias in AI algorithms, misinformation propagated by AI, or the ethical dilemmas surrounding AI and privacy. Following the video, they use Sidekick to explore these concepts deeper, engage in a structured conversation where they can ask questions, seek clarifications, and delve into the nuances of ethical AI use. After their interaction with Sidekick, students will be prompted to reflect on the scenario, identifying potential ethical dilemmas and proposing solutions or strategies to navigate them responsibly.

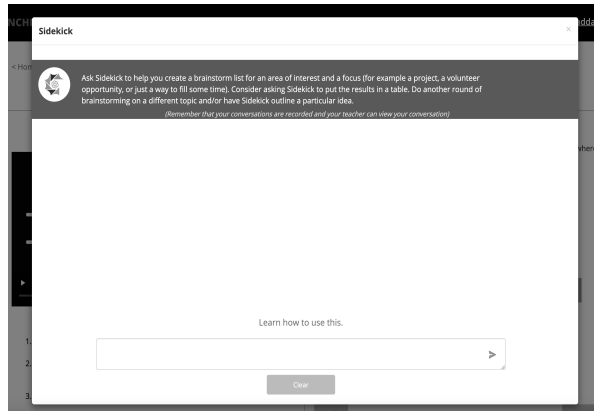


Figure 2: The Sidekick Academy screen where students interact with the chatbot. Students can also see the notification that the conversations are recorded and can be seen by the teacher.

### Study Buddy

One way students have been using Generative AI since it was first made public is as a study buddy or tutor. A student can ask Sidekick to quiz them on definitions, write multiple choice questions on a topic, provide open ended questions on a math topic, or more clearly explain a concept. In this activity students ask Sidekick to help them prepare for a quiz or test by asking them questions about a topic. Students can also ask it to create a list to use to generate flashcards or build a mind map to help make connections and study. The students can answer and get feedback from Sidekick and continue to use it as a Study Buddy.

In addition to the seven prescribed lessons, there is a final activity called “Freestyle.” This is an opportunity for students to use Sidekick for any activity the teacher assigns. This “sandbox” allows students to use Sidekick in a safe way that meets the data privacy requirements but is not tied to a lesson developed by the curriculum writers. The teacher can still see the transcripts of all student interactions with Sidekick and the guardrails are all in place, but the teacher can allow students to use Sidekick for an assignment tied to any content area or in any way they think is useful. Generative AI’s capabilities seem almost endless at this point and teachers and students will come up with new ways to use the AI in and out of the classroom. This final activity

is a way for students to continue to use Sidekick even after they have completed the curriculum and is a way they can return to it again and again.

### Sidekick Academy Target Students

Sidekick Academy is designed for middle and early high school students. While students younger than 6<sup>th</sup> grade may know what ChatGPT is or may try playing with it at home, most students at this age are still learning foundational skills and AI can’t really replace that learning. Middle school students are the prime candidates for learning about AI. First, they are often looking for a shortcut or way to maximize their product and minimize effort. Many middle schoolers quickly realized that ChatGPT could write their essays, answer short and long essay questions or even help with multiple choice tests and definitions. However, many of these students don’t understand the difference between Generative AI and an internet search and the true capabilities of AI. Moreover, they don’t know how to use it ethically. These students are the prime targets for engaging with Sidekick Academy. They will not only learn the ways that Sidekick can help them complete tasks more efficiently and with better final products, but also will have opportunities for discussions about what it means to use AI ethically.

Teaching kids how to use Generative AI in schools is an issue of equity. The students know it exists and many are playing with it outside of the classroom. Those who do not have access to it at home (since technically they should not be using it at school or on a school issued device unless they are on an approved platform) are missing out on a critical learning experience. No doubt today’s middle schoolers will be using AI in even more ways in their futures – either at college or in their careers. If at-risk students are not learning how to use it in middle school like their more economically advantaged peers or peers with parents who will expose them to this technology, those that have the opportunity and access are going to far outpace those without the opportunity, widening the gap between students with privilege and students at-risk. It is imperative that all schools engage students in conversations about generative AI and its uses.

### Setup and Resources Required

Sidekick Academy is a web-based platform with a single sign-on from Google or Microsoft. If students have a school email address and a device, they can use the platform. There is a mobile view so students with cell phones or tablets can also use the platform. Once schools purchase the license to use the curriculum, they have access to it for the entire school year. This platform is also compliant with standard

federal and state data privacy benchmarks. The program has been piloted for free in a Title I school. Skills21 is currently seeking funding opportunities through National Science Foundation grants and federal, state, and foundational support to underwrite cost.

## **AI Concepts Addressed**

The goal of Sidekick Academy is for students to become fluent in using generative AI and understand the benefits and constraints of this technology. The Academy addresses several different AI concepts.

### **Generative AI**

Sidekick Academy was built to teach students to use Generative AI. While students have been engaging with AI for years through the use of social media and internet searches that make predictions and recommendations based on data, Generative AI is a new tool. This is a powerful tool for generating text, aiding in brainstorming, and assisting in various educational tasks.

### **Chatbots**

An emphasis of the Sidekick Academy activities is that Generative AI is interactive and conversational. Chatbots, which are powered by large language models can interact with users in a natural language and assist them in various tasks such as summarizing articles, brainstorming ideas, writing assistance, and providing feedback.

### **Ethical Use of AI**

Sidekick Academy recognizes the imperative need to teach students how to use generative AI ethically, focusing on understanding the benefits and risks associated with using AI tools and promoting responsible use.

### **AI in Education**

Sidekick Academy focuses on how students can use AI in their education. While there is a plethora of other ways students could (and do) use AI outside of school, the focus of Sidekick Academy is to help students understand the power of AI to support their education and preparation for college and career. Sidekick Academy demonstrates how AI can be used to personalize learning, assist in writing and brainstorming, and provide a more interactive learning experience.

### **Data Privacy and Security**

A significant impetus for creating Sidekick Academy was to address state and federal data privacy laws in education in the United States. Additionally, the Sidekick Academy platform allows teachers to read and provide feedback on all

student interactions with Sidekick to minimize inappropriate use of AI for students.

### **AI and Equity**

One reason that Sidekick Academy is critical to get into schools is to help support equity. If all students are not learning about how to productively use these tools as they evolve, it has the potential to exacerbate existing inequalities. By preparing all students to use AI it can help reduce inequities providing enhanced learning opportunities.

### **Human-AI Collaboration**

Sidekick Academy emphasizes the cooperative interaction between humans and AI, where AI assists in enhancing human creativity and productivity, rather than replacing human input entirely.

## **Expected Learning Outcomes**

Sidekick Academy is built with several expected learning outcomes established by the team at Skills21.

### **Mastery of General AI Tools**

The obvious outcome for students is that students will have many opportunities to use generative AI for a variety of tasks. At the conclusion of the Sidekick Academy lessons and continued use of Freestyle in the classroom, students will have mastery of the AI tools. Students will be proficient at using Sidekick or other Generative AI tools for a variety of educational purposes including studying, writing, editing, and brainstorming.

### **Enhanced Academic Skills**

By learning how to use Generative AI, students will also have opportunities to reflect on how they learn best and how Generative AI can be most helpful in their educational endeavors. Ideally, by learning how to use the AI, students will not only improve their metacognitive skills, but will use AI to enhance their own learning, productivity, and final products.

### **Ethical Use of AI**

While the primary goal is for students to learn to use AI productively, it is just as critical that they learn to use it ethically. A goal of Sidekick Academy is for students to consider the ethics of when, why, and how they are using AI tools. Based on the embedded conversations teachers have with students as they teach using Sidekick Academy in conjunction with the explicit activity on ethics, students will understand the ethics of AI use.

## Early Results and Feedback

Students started using the first version of Sidekick Academy in September 2023 in middle and high schools. Surprisingly many of the middle school students were unfamiliar with using Generative AI. In fact, some students said that they felt like it was “cheating” to use Sidekick when doing their work. Many students have reported that they did not know there were ways to use AI that were allowed in school and have learned some ways to use AI to help them but not cheat. Teachers have reported that when students use AI the quality of their work is elevated and students in general are showing engagement in using AI in ethical and helpful ways. The data is preliminary and anecdotal, but all participating classes have completed a survey prior to using Sidekick Academy and will complete a post-program survey later in the school year so more research and results are forthcoming.

## Conclusion

Skills21 recognized an immediate need for students to learn how to use Artificial Intelligence appropriately and effectively in the spring of 2023. The team used the spring and summer to develop a curriculum that could be easily embedded into middle school and early high school classes with minimal need for new resources or teacher professional development. While it is ideal that teachers have experience using AI in general and Generative AI more specifically, by embedding videos directly into the platform, teachers do not need to be experts on the topic. Additionally, teachers without much experience using AI will learn alongside their students and develop their own toolkit to use professionally. Sidekick Academy presents a safe and secure way for students to test out the capabilities of AI under teacher guidance and supervision.

## References

Amani, Sara, et al. 2023. Generative AI Perceptions: A Survey to Measure the Perceptions of Faculty, Staff, and Students on Generative AI Tools in Academia. arXiv preprint. arXiv:2304.14415 [cs.HS]. Ithaca, NY: Cornell university Library

CoSN in Partnership with Microsoft. 2023. Artificial Intelligence (AI) in K-12. <https://www.cosn.org/tools-and-resources/resource/artificial-intelligence-ai-in-k-12/> Accessed: 2023-9-15.

Kreuger, N. 2018. Preparing students for an AI Driven world. <https://www.iste.org/explore/Computer-Science/Preparing-students-for-an-ai-driven-world?articleid=2197> Accessed: 2023-9-10.

Lee, I. and Perret, B. 2022. Preparing High School Teachers to Integrate AI Methods into STEM Classrooms. In Proceedings of the AAAI Conference on Artificial Intelligence. Washington, DC. <https://doi.org/10.1609/aaai.v36i11.21557>

Zhang, H., et al., 2022. Integrating Ethics and Career Futures with Technical Learning to Promote AI literacy for Middle School Students: An Exploratory Study. *International Journal of Artificial Intelligence in Education* 33: 290-324. doi.org/10.1007/s40593-022-00293-3.