

SB 2 Articles/ Artificial Intelligence Ban in K-12 Schools Act:



Although there is a huge amount of interest in [generative artificial intelligence](#) (AI) in the consumer world, particularly since the release of OpenAI's free ChatGPT program last November, in the hallowed halls of academia the response has been more wary. Concerns abound about academic integrity. There are also [worries about how AI-generated content can be biased](#), inaccurate, and sometimes contain entirely false information, dubbed "hallucinations."

The cautious response is to be expected according to [Houman Harouni](#), lecturer on education at the Harvard Graduate School of Education and a former elementary and high school teacher. He has compassion for educators trying to grapple with a rapidly shifting world shaped by machine learning.

"Technology creates a shock," he explains. "This shock is sometimes of a magnitude that we cannot even understand it, in the same way that we still haven't absorbed the sharp shock of the mobile phone."

Harouni has long [wrestled with the impact of cutting-edge technology](#) on education, including [experimenting in his own classroom](#), and is convinced that when it comes to teaching "the medium is part of the message." He believes that getting school students and those in higher ed to engage with virtual worlds is essential.

"Where we want to get to is a place where you're dancing with it, dancing with robots," he says.

If the idea of waltzing with a robot creates apprehension for educators, Harouni has some advice:

1) Stop pretending that it doesn't exist

Educators must "help the next generation face the reality of the world and develop instruments and ways of navigating this reality with integrity," Harouni says. Students are well aware that technologies such as

ChatGPT exist and are already experimenting with them on their own, but they need guidance about how to use them responsibly.

Teacher education and professional development programs should not ignore generative artificial intelligence either.

2) Use AI alongside your students

Engage with generative AI tools with your students in person, when possible. Otherwise, share AI-generated responses to questions during class time and ask students to consider them or have students experiment with the technology at home, document their experiences, and share them with the class.

3) Teach students how to ask the ChatGPT tool questions

“The educator's job is to understand what opportunities are left open beside the technology,” Harouni says.

Teach students to do what artificial intelligence cannot do. For example, unlike robots, we can ask ourselves questions and that is what students need to be trained in: to know how to ask questions and to learn how to critique their own questions, frameworks, and the answers generated by AI, he says.

Students can start with topics and questions that they are interested in and ask ChatGPT for answers, he suggests. The knack is then getting them excited about asking follow-up questions. Harouni uses a personal experience with his 10-year-old stepdaughter and his newborn baby to illustrate his point. When his stepdaughter asked him why he kept telling her to be careful with the baby, Harouni turned to ChatGPT to help her to get to the bottom of her question.

“My creativity as the teacher or the parent at that moment is to say, ‘What is it that you're really trying to ask? What is it that you really want to know?’”

While ChatGPT churned out a “whole bunch of answers about the fragility of the baby,” with some patience, Harouni helped his stepdaughter discover the question that she truly wanted to ask which was what she could safely do with the new baby. “At the moment that the exploration [with AI] ends with the answer, you know that your work as a teacher begins,” he explains.

4) Use generative AI tools to spark the imagination

One frequent concern about generative artificial intelligence is that students will use it to cheat and avoid the hard work of thinking for themselves, but Harouni says that tools like ChatGPT should really challenge teachers and professors to reassess the assignments they give their students.

“You have to stop thinking that you can teach exactly the way you used to teach when the basic medium has changed,” he explains. If students can turn to ChatGPT or other AI language models for quick and easy answers then there is a problem with the lesson, Harouni believes.

“We have to create assignments that push [students] to the point where they have to question what is the framework that is being used here and what would it mean for me to radically change this framework,” he says.

Harouni recently wrote about how he used ChatGPT to spur higher-level thinking among his students at HGSE when he presented them with a [challenging case study](#) that had no easy solutions. The students' initial responses were no better than the chatbot's ideas. Instead "it was after ChatGPT reflected to the students their failure of imagination that they could begin to think of options that they, or any automatic language scrawler, would not have readily reached for," he explained in a [co-authored article for *Wired*](#).

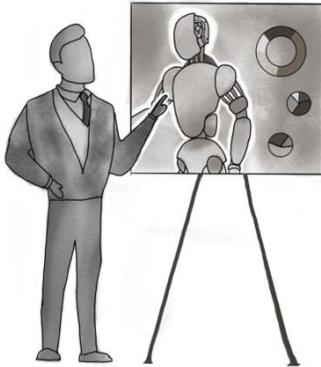
Additional Resources:

- ["ChatGPT Is Unoriginal — and Exactly What Humans Need" by Houman Harouni and Dana Karout](#)
- [Harvard EdCast: Educating in a World of Artificial Intelligence](#)
- [Students: AI is Part of Your World](#)
- [Sal Khan on Innovations in the Classroom](#)

<https://www.gse.harvard.edu/ideas/usable-knowledge/23/07/embracing-artificial-intelligence-classroom>

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Counterpoint: Why AI Should Not Be Used in the Classroom

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According to [CNN](#), 30% of college students have used ChatGPT in the past year to supplement their learning. Evidently, artificial intelligence is increasingly becoming a prominent facet of everyday life, with its growing use in the classroom speaking volumes about how quickly we must adapt to it. While AI's expansion into the classroom could be seen as further advancing education, it is imperative to closely evaluate the implications of accepting AI as an educational tool. While AI might seem like the world's most efficient personal tutor on the surface, tools like ChatGPT impair learning when used incorrectly because of both the ease at which it can give students answers and its confident inaccuracies. Due to

the many obstacles it places in the way of effective learning, students should not be able to use AI in the classroom.

While recognizing AI's potential as a positive force in the education space, Dean of Harvard's Graduate School of Education Martin West states in an [article](#) published by the GSE, "some uses of generative AI can undermine [students'] learning. Particularly, when the tools are used to do the cognitive work of thinking for students rather than to support their learning." A Harvard education should help students think for themselves and develop the life skills necessary to make decisions on their own in the real world, and AI can greatly hinder the growth of these skills.

When one uses ChatGPT in the classroom, it often simply spits out answers rather than helping them come to conclusions on their own. In essay classes, I can ask the chatbot to write a paper on specific concepts of Daoism and it will write the paper for me, clearly and effectively expressing key concepts to create an arguably sophisticated essay. Students can then pass off Chat GPT's work as their own, or at least draw heavy inspiration from its response. They can use Chat GPT to enhance or even supplant their own analytical thought, thus creating a facade for themselves or their teachers whereby they aren't actually learning the material—the AI has learned it for them.

According to a June 2023 article from [Nature](#), "slowly and gradually, AI limits and replaces the human role in decision-making. Human mental capabilities like intuitive analysis, critical thinking, and creative problem-solving are getting out of decision-making." As ChatGPT expands on its capabilities (GPT 4, the AI's subscription-based newest update, now includes the ability to analyze photos), these issues will only be magnified. If students are given a tool that will do the work for them and spit out the answer, they are simply not going to learn as well as they would if they were required to independently problem solve.

Harvard, like every other academic institution on the planet, has been forced to wrestle with these issues over the past year, and the same pitfalls recognized by Dean West have cropped up in Harvard classrooms. One such example is CS50, which has recently incorporated the [CS50 duck](#) into their curriculum.

Yet even if we assume that AI can help students learn material rather than outright giving them answers, readily-available online AI tools are far from advanced enough to be accurate, posing significant drawbacks for in-school use, particularly in STEM fields, where the software has been known to struggle with basic math problems. For example, when I asked ChatGPT make a paragraph about AI inaccuracy, ChatGPT 3.5 spit out fake but believable statistics such as "AI systems currently make errors in up to 20% of their responses when handling complex or nuanced questions," and "68% of students who relied solely on AI-generated content for their assignments encountered errors," with believable fabricated sources to match. I then confirmed the inaccuracy of these statistics by comparing them to reputable statistics supported by real world data.

It's alarming to see how ChatGPT can produce believable but incorrect and misleading information. One might think that software updates would fix this issue, but even modern versions of AI, such as ChatGPT 4 have actually been shown to spread false information and narratives at a higher rate than its predecessors.

How can we trust a tool that can so easily mislead its users with the education of future generations? Until ChatGPT rids itself of this problem, students and teachers cannot expect it to output accurate information, putting clear roadblocks in the way of its ability to educate students effectively. Both in regard to the AI's general accuracy and the ease at which it provides access to information, Harvard should be wary of introducing AI into the classroom.

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