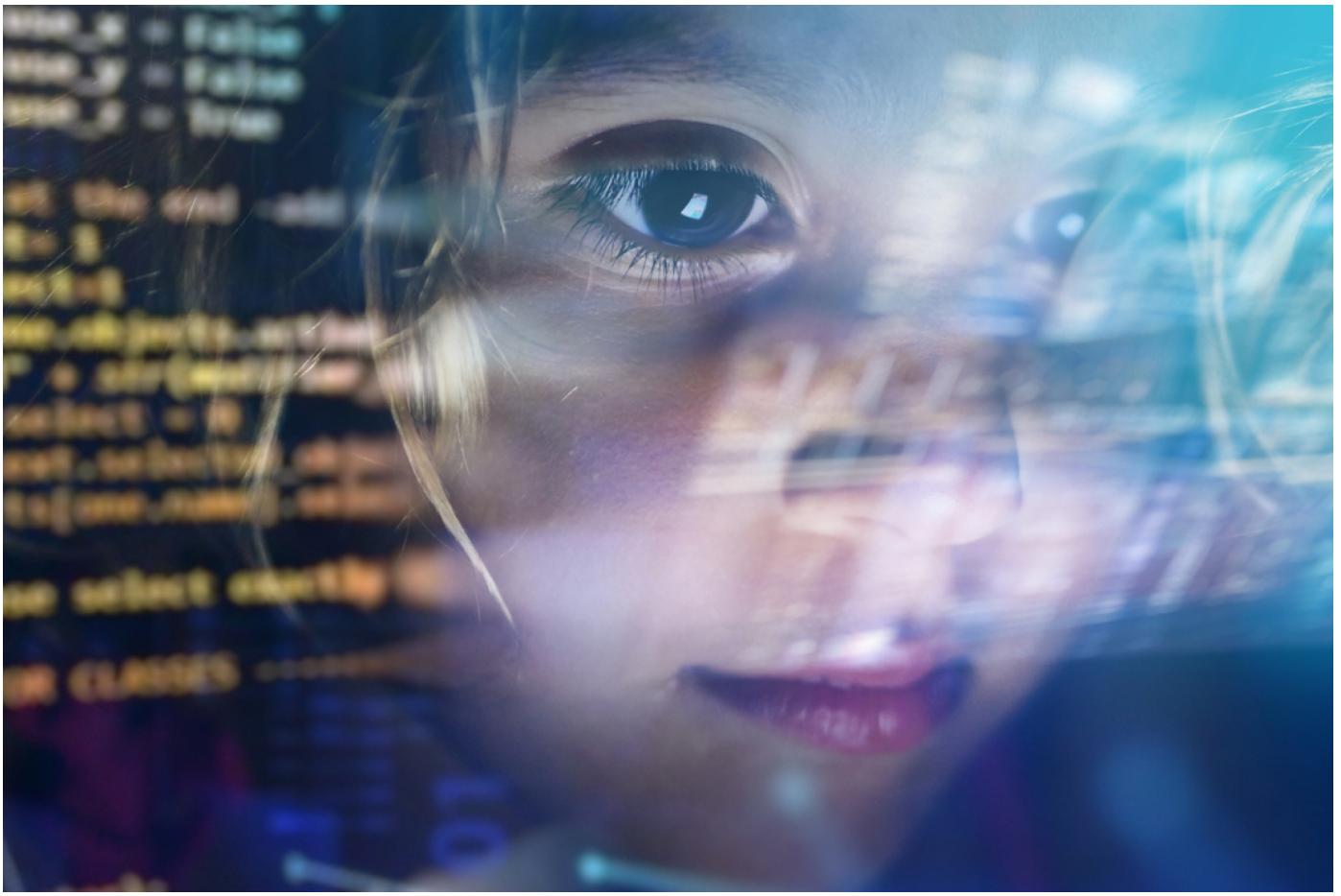


Embracing Artificial Intelligence in the Classroom



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*](#).