OPINION

AI can be educational springboard

By Sheldon Jacobson

ChatGPT is the latest artificial intelligence disrupter. It provides informed answers to questions, generating text with the capability of creating essays around topics. The tool employs machine learning to produce such text and mimic human conversation.

Like many new AI tools, there will be enthusiastic supporters and cautious detractors. Some of the most vociferous critics are coming out of higher education.

ChatGPT poses a threat to many college educators, particularly those in the social sciences and liberal arts, where writing is core to their education and evaluation processes. Even those in the science, technology, engineering and math fields may be affected, given how ChatGPT has demonstrated its ability to solve problems.

College students are taught to logically present and communicate their positions using essays. Their writings are then evaluated to determine how well a student has performed and, in effect, assign the student a grade.

If ChatGPT can create such essays, then how can students be evaluated and graded? Under the current model, they cannot.

This means that alternative ways of evaluating and grading students must be formulated — not to neutralize ChatGPT but to embrace it.

This is not the first time that technology has disrupted education.

In the 1970s, handheld electronic calculators became more affordable, and hence, more ubiquitous. This made the teaching of arithmetic calculations obsolete, though not the rules by which they are executed.

Instead of fighting the use of calculators, mathematics education transformed, effectively embracing problem formulation and problem solving. This allowed students to consider real-world problems in which the answers could be computed using calculators, provided the problem was correctly formulated and the appropriate techniques were applied.

Calculators expanded the scope of problems that could be tackled. This technological transformation meant that the process rather than the outcome became the target of student evaluation.

A similar transformation will be needed when essays provided by ChatGPT are to be evaluated.

ChatGPT creates text, but the genesis of such text is existing ideas.

ChatGPT is also not flawless. It can extract incorrect information and regurgitate it. Unlike people, it cannot reason and employ critical thinking.

What people bring to the table are ideas. This creates a much higher bar for evaluation, with the essay style and structure provided by ChatGPT serving as a first draft. Students can then imbue their own creative content to enhance what ChatGPT initially provided.

This means that grammar and punctuation are likely to be flawless with ChatGPT. What will be far less impressive is the novelty embedded in the content. This makes ChatGPT strong on style and sizzle and more limited on substance.

ChatGPT will not be the last text creator available. Indeed, new and improved products are likely to be introduced in the coming years.

For those intent on holding onto existing methods to evaluate students, they will be swimming upstream against a strong current. However, if AI tools can create text, then AI tools will become available to detect AI, much like using fire to fight fire. Such tools would effectively uncover a writing's DNA to assess its origins. This is the foundation for the Turing Test originally proposed to assess whether a computing device can appear to think like a person.

Stopping an AI advance in this manner is a short-term stopgap for what is likely to be a long-term trend.

At the root of many of the criticisms is fear. Any new tool has the potential to affect people's lives and livelihoods. Such concerns are likely ill-founded and most certainly premature.

Will ChatGPT replace college instructors? Hardly. What it could do is improve their ability to educate. It may also expose those who are ineffective.

Students who rely totally on ChatGPT or similar AI systems for writing essays may find that their beautifully composed writing, with appropriate scrutiny, will be exposed for its lack of depth and creativity. On the other hand, students could use ChatGPT to learn about a topic and then take advantage of its output as a launchpad and imbue it with their own ideas. This will make the final product better than what they could have composed on their own. In this way, ChatGPT improves the initial conditions. This also means that the bar for success must be similarly moved higher.

If I composed an exam on which ChatGPT could score a perfect grade, the problem may be my exam, not ChatGPT. Perhaps my goal should be to compose an exam that ChatGPT could not successfully tackle.

The ability for ChatGPT to pass medical exams such as the U.S. Medical Licensing Exam exposes these exams for highlighting recollection of facts, not for innovative thinking, feeding to ChatGPT's strength.

ChatGPT is a game-changer and disrupter. It will enable better writing and, if embraced, better thinking, something that all educators should support. The question is whether higher education will accept this change and allow it to be a springboard for better written communication.

Sheldon H. Jacobson is a professor in computer science at the University of Illinois at Urbana-Champaign. As a data scientist and operations researcher, he applies his expertise in data-driven, risk-based decision-making to evaluate and inform public policy.