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Learning gains
from COVID-19

Diversifying
educational
pathways and
lifelong learning

Education for
sustainable
development

The emerging
role of AI in
education

*Including a special
pull-out: “ChatGPT:
A tool kit for students
and educators”*



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The emerging role of artificial intelligence in education

Embracing ChatGPT and other generative AI tools in higher education: The importance of fostering trust and responsible use in teaching and learning

JONATHAN Y. H. SIM

The advent of generative artificial intelligence (AI) tools, such as ChatGPT, is fast disrupting the landscape of education. A growing number of students are adopting these AI tools in their learning. They are discovering that AI can be so much better at teaching, with a degree of patience that is beyond human. Educators are also struggling to keep up with this new reality as they discover how traditional modes of teaching and assessment can easily be replicated and answered by such tools. Every advance in generative AI technology is proving that it is becoming impossible to design AI-resistant assessments.

Such unsettling realisations have led many educators to respond with apprehension. Is the teaching profession at existential risk? How can we preserve academic integrity in student learning? Will we see the rise of a generation reliant on AI tools as a digital crutch? These and similar concerns have led to calls in some places for the outright banning of AI tools, while others have resorted to reinstating closed-book final examinations in place of continuous assessments.

Despite these concerns, however, it is critical for higher education to stay relevant by equipping our students with the necessary skills to navigate the complexities and uncertainties that lie ahead.

As educators, we must embrace the potential of artificial intelligence (AI) in teaching and learning, leading our students by example in the responsible and effective use of these tools. Only then will we be equipped to brave the frontiers of this uncharted and evolving educational landscape.

Bridging the disruption of trust

Since the public release of ChatGPT in November 2022, a narrative of suspicion has overshadowed discussions about AI in education, fuelled by instances of cheating and widespread misunderstandings about how students are using AI for legitimate learning purposes. Unfortunately, this has produced an atmosphere of mistrust between students and their educators.

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As a first step, we need to actively engage with AI tools to better understand how they can help us in our work. As we use AI tools, however, we may find ourselves grappling with ethically grey areas. Consider these examples:



1. An educator turns to AI for inspiration in designing a new lesson. The AI tool generates a list of ideas, one of which is particularly exceptional. Is it cheating if the educator incorporates this idea into her lesson plan? How does this differ from seeking ideas from the internet or a colleague?
2. After drafting a paper, an educator consults an AI tool for more eloquent ways to articulate her ideas. The AI articulates certain sections more impactfully than she had. Is it cheating if she incorporates these revisions into her paper? Again, how does this differ from seeking assistance from colleagues, friends, or even an editor?

As we navigate the ethical dilemmas that arise from relying on AI tools, we need to recognise that students will face similar challenges when using these tools. By familiarising ourselves with the ethical implications of AI in our own work, we can develop empathy and a nuanced understanding in order to better recognise that not all students who use AI for their assignments do so with the intent to cheat.

Moreover, AI detection tools are far from perfect. I can attest that my own original works and the original works of colleagues and students are occasionally flagged as containing “parts written by an AI”. What students fear most is that they might be falsely accused of cheating, as the result of a false positive by such detection tools. In these circumstances there is no clear way to prove their innocence. Trust between the student and educator is jeopardised in such circumstances.

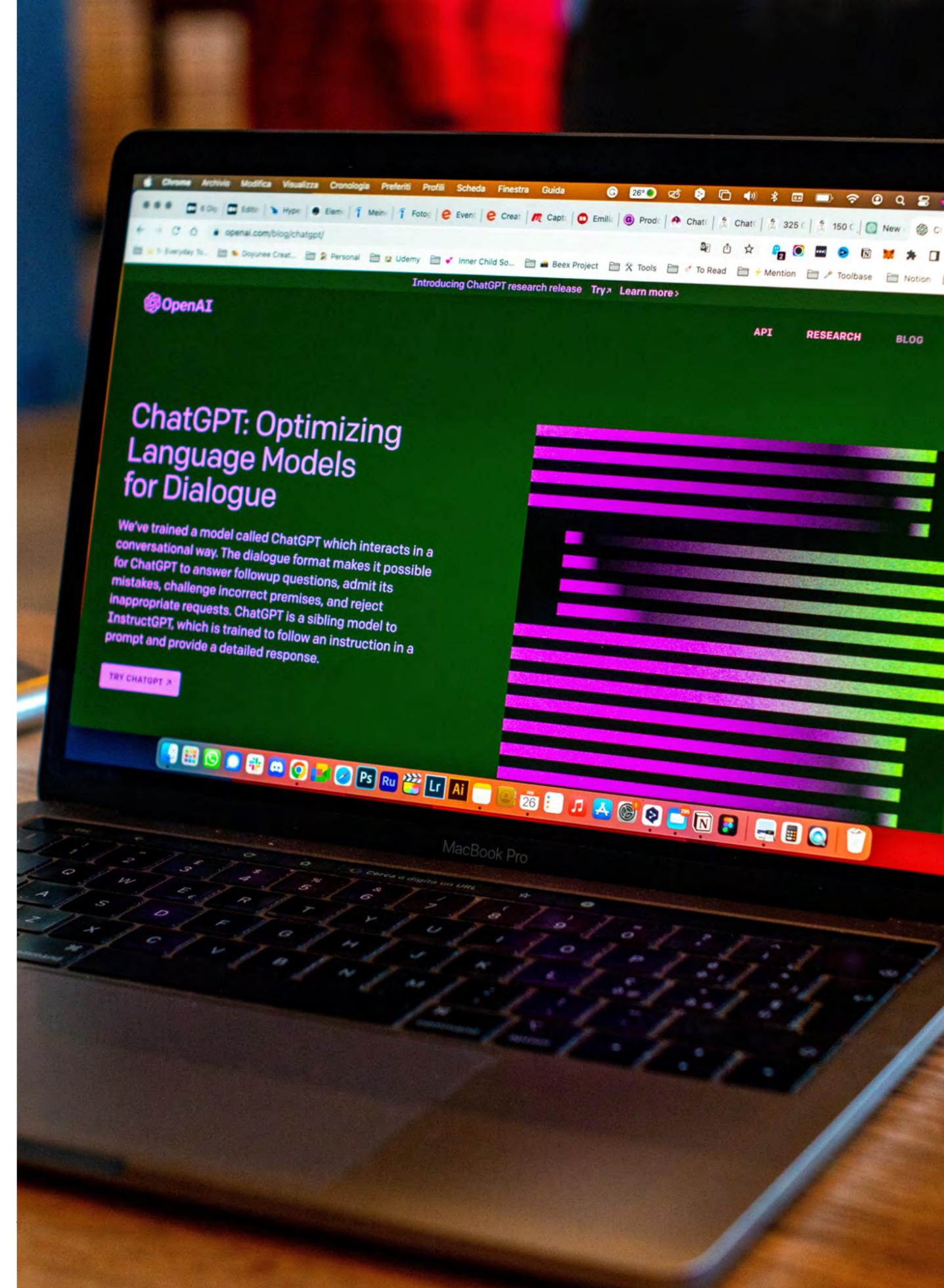
Recovering trust while embracing AI in learning

In the face of such circumstances, there are two things that we can do to preserve trust between students and educators.

First, we should create a safe space for students to explore and use these technologies responsibly, by allowing students to use AI-generated content in their work with proper attribution and citations (as they would with any other cited material). This will empower them to be more transparent and open about their usage of AI tools in learning without fear of penalty.

Second, we should shift the focus of assessments away from evaluating student performance. This creates an unhealthy competition for grades, and incentivises students to cheat. Instead, we should focus on designing formative assessments that are intended to help students learn deeply as they do the work.

For starters, we can encourage collaborations between students and their educators through self-directed research projects. By requiring students to



formulate their own research questions, there is no ready question that students can simply feed into an AI tool to obtain answers. They will need to deepen their own understanding before they can formulate a question. This encourages students to pick topics of interest, which will motivate them to use AI tools more as a supplement to their knowledge than as a shortcut.

Further, since research is a collaborative process, students can gain feedback and affirmation from their educators, while educators can gain fresh insights that may be beneficial to their own work. Ultimately, students and educators will be able to nurture trust and respect for each other, and students will rediscover the joys of learning without unnecessary pressures to perform.

Integrating AI tools into learning activities

What if we wish to integrate AI tools into our learning activities? Again, there are two categories of activities we can explore.

The first category is to treat AI as a learning partner. The AI tool can assume the role of a “tutor”, providing evaluative feedback on students’ drafts, or it can function as a fellow “student”, enabling learners to discuss new subjects or hone certain soft skills through conversations and debate. AI can also be instructed to engage in Socratic dialogue, with either the AI or the student taking on the role of the Socratic questioner. With ChatGPT and other prompt-based AI tools, we can direct the AI to adopt any role to productively interact with students.



Prompt to get ChatGPT to roleplay as a confused student: “I want you to pretend that you are confused about <discipline>. You have partial knowledge of <topic> and it makes very little sense to you. As I teach you, I want you to ask me clarification questions to help you gain a better understanding. Tell me if my explanation makes sense to you or not, and if it doesn't, explain why it wasn't helpful to you. You should start by asking me a question about <topic>.”

Prompt to get ChatGPT to engage students in a debate: “I want to engage with you in a debate on a controversial issue within the area of <topic>. You must take a stand on the issue and begin by stating a view from your stance in one sentence (begin by saying “They say...”). Thereafter, I will reply with my own objection. And you will subsequently respond to my objection with your own objection in one sentence (again, begin by saying “They say...”, do not ask questions). We will continue to have this back-and-forth conversation with each other until I say stop.”

Prompt to get ChatGPT to engage in Socratic dialogue (student as the questioner): I would like to engage with you in a Socratic dialogue. I will be the teacher, and you will be the student. I will ask a question about <topic>, and you will respond pretending that you are a beginner. I will critique your response with further questions, and you will continue to respond to my questions as a beginner. This should continue until I ask you to stop.”

Important: Do note that after a few replies ChatGPT may forget that it is supposed to engage in a role play, so the student will need to remind the AI about what it is supposed to do to continue the conversation.



The second category involves guiding students to identify the limitations of AI tools and find areas where human intervention can add value to AI-generated output. To achieve this, we must teach them how to develop better instructions (or prompts) to command the AI, and subsequently how to critically question and evaluate the output. This will enable students to identify flaws and limitations in AI-generated content, and to discover their own niche areas where they can add value to the AI’s work, ultimately surpassing the AI’s capabilities.

This approach parallels the way in which design schools teach Photoshop, not as an end in itself but rather as a means to cultivate a discerning eye for excellent design. Although we may use tools like ChatGPT for now, the idea still holds true for the future, since we are teaching students how to employ AI tools to develop a critical eye for exceptional AI-generated content – a soft skill that will be transferable to other AI tools in the future.

I recently designed a tutorial activity for a diverse cohort of 400 humanities and social sciences students. The activity tasked students with designing the best prompt to instruct ChatGPT to generate a presentation pitch. Once they were satisfied with the output, they were challenged to critique and refine the pitch to identify the features of a compelling presentation.

The lesson was a resounding success. Students learnt that the process of refining prompts and outputs requires an artful combination of questioning and evaluative skills, as well as expressive and articulate communication. Students who excelled in these skills outperformed their peers.

To demonstrate the effectiveness of this activity, I would like to share an incident. A group of four students struggled to design better prompts, while a fifth member – a literature major – found that her literary training had equipped her well to precisely articulate her needs and produce sophisticated outputs. By the end of the class this student had a newfound confidence in her literary abilities to prepare her for the future of work with AI.

We can create a more dynamic, collaborative and engaging learning environment that fosters trust and understanding, and challenge students to cultivate their intellectual curiosity to go further than an AI tool.

Braving the frontiers

Generative AI tools have begun to disrupt the traditional dynamics in higher education. As educators, it is our responsibility to adapt and embrace AI’s potential to enhance teaching and learning.

Embracing AI in education should not be seen as a threat. Instead, it should be perceived as a timely opportunity to reinvigorate education. We can create a more dynamic, collaborative and engaging learning environment that fosters trust and understanding, and challenge students to cultivate their intellectual curiosity to go further than an AI tool.

We must lead our students by our example as we brave the frontiers of this uncharted and evolving educational landscape into the future.

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