PART 1 - Welcoming Generative AI into our Classrooms: A time for optimistic engagement

The recent launch of generative artificial intelligence models, like ChatGPT, are eliciting an energetic variety of responses from instructors everywhere, ranging from consternation to cautious optimism*. It is likely that we are witnessing a novel and permanent disruption in the classroom activities of higher education. While it will take several months (years?) to fully assess the extent of this continually developing disorder, we are faced, in a few short weeks, with the beginning of a new semester. During the past three years, though, we've certainly learned how to pay attention to new challenges and how to pivot to meet them directly.

The inescapable reality is that ChatGPT and other AI writers are here and students are going to use them. Trying to prevent the use of these new tools is likely to be a losing battle. We may be dismayed with students who will simply use these platforms in order to achieve an acceptable grade without actually engaging in original thought or work. We may sympathize, to some degree, with students who use these tools to complete more assignments in less time. Consider, too, our dawning awareness that current plagiarism detection software cannot completely detect AI-generated material. Further, consider that AI writers will likely improve in efficacy as rapidly (if not more so) as the technology of any detection software. The appeal of this new resource – either in wholesome or shady ways – is undeniable.

Even a few minutes' thought about the use of AI writers quickly gives rise to sweeping questions of (nearly) existential scope. Is plagiarism our prime concern as we view the proliferation of AI writers among our student populations? Should we stop students from utilizing these easily accessible resources? Is that goal remotely achievable? Where do we draw lines between identifying someone's original work amid the array of commonly accepted digital technologies already available? Who among us has not relied on the ubiquitous "auto-correct" when typing; or accepted wording suggestions in our text messages. What attention should we give to the inherently visible flaws among AI writers? How are we to be concerned about their evident lack of inclusivity?

How do we describe our evaluation of quality? Are there differences in degree among possible methods for producing, say, a loaf of bread? Consider some possibilities: A world-class baker employing her years of experience and skill, working with locally-sourced ingredients; A home baker preparing bread 'from scratch'; A home baker using a boxed mix and a bread machine; An automated factory assembly line producing *Wonder Bread*. Do these various venues constitute differences only in degree, or do the variable circumstances result in substantive differences? An

analogy, perhaps, as we seek to understand our own and our students' engagement with AI writers.

While everyone's entanglement with AI writers is unavoidable, this situation represents a unique and optimistic moment for deeply refining our approach to classroom work of all kinds. Though (of course!) creating additional work for instructors, this is a prime opportunity to highlight our ongoing care for student learning, academic well-being, and the authenticity and validity of our learning outcomes. **Over the next few weeks of IAP, and by way of introduction, we will examine some broader questions here. These questions are especially critical and relevant as we all seek to establish a workable foundation for engaging in the long term with AI technologies in learning spaces across MIT classroom and learning spaces**:

- **Week of 1/18: How can we use these AI tools to support and enhance student learning? Can these tools help us to more effectively meet existing desired goals for learning outcomes?**
    - How might these tools prompt us to reconsider goals for student learning?
        - Are there levels of higher order thinking that we'd like students to achieve and if so, can AI tools help them get there?
        - Does the technology enable students to engage more meaningfully and authentically with the course material and/or the discipline overall.
        - How can we redesign our assignments and assessments to leverage these tools to better support authentic and meaningful student learning?

- **Week of 1/25: How can we lead students to thoughtfully engage with these tools and, importantly, with their underlying issues?**
    - Academic integrity and personal responsibility
    - Shared values
    - Inclusive teaching

Undertaking an initial survey of these questions will no doubt raise other questions and concerns and, we hope, demonstrate additional cause for optimism and creativity. And, given the ongoing proliferation of articles and blog posts, we expect no shortage of material to offer for your reflection, comment, and use.

In the meantime, if you'd like to read some particularly thoughtful pieces, we recommend the following:

1. Schiappa, Edward & Montfort, Nicholas (2023). Advice Concerning the Increase in AI-Assisted Writing, Internal MIT document.
2. Bruff, Derek (2022). Three Things to Know about AI Tools and Teaching, *Agile Learning Blog*.
3. Brake, Josh (2022). Education in the World of ChatGPT. *The Absent- Minded Professor Blog*.
4. McMurtrie, Beth (2023). Teaching: Will ChatGPT Change the Way You Teach?, Chronicle of Higher Education.

A more complete list of resources is included at the end of this post.

Are you interested in leveraging the utility of AI writers in your assignments and coursework? Contact us (TLL@mit.edu) with your suggestions, questions, and ideas. What are your strategies for engaging with this new reality? We are happy to collaborate with you on the development of effective approaches!

Resources

Higher Ed

- Brake, Josh (2022). Education in the World of ChatGPT. *The Absent- Minded Professor Blog*.
- Bruff, Derek (2022). Three Things to Know about AI Tools and Teaching, *Agile Learning Blog*.
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- Bogost, Ian (2022). ChatGPT Is Dumber Than You Think, *Atlantic*.
- Roose, Keven Roose. The Brilliance and Weirdness of ChatGPT, *NYTimes.*

* On the morning of publishing this post - the following article appeared in *Inside Higher Ed*: ChatGPT Advice Academics Can Use Now, by Susan D'Agostino.

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—----------END OF FIRST PIECE—----------

Part II - How can we use generative AI to support and enhance student learning?

As described in our previous post, the unavoidable entanglement with generative AI tools represents a unique and optimistic moment for deeply refining our approach to classroom work of all kinds. Though (of course!) creating additional work for instructors, this is a prime opportunity to consider how the thoughtful integration of AI tools into our subjects can support and enhance student learning and establish a workable foundation for engaging in the long term with AI technologies across MIT classrooms and learning spaces.

[DALL-E generated images - book rising out of water, digital art]

In this post, we provide some guidance and associated resources for the use of generative AI in assignments and assessments in subjects across the Institute.

How might generative AI prompt us to *reconsider and refine goals for student learning*?

Before considering the affordances or annoyances of generative AI in your teaching context, it is important to critically examine your real goals for student learning. Are there levels of higher-order thinking - more complex, more authentic learning goals - that you'd like students to achieve? If so, you can begin to explore the ways that generative AI tools help students achieve those goals. In particular, you may wish to consider:

- How (or if) the technology can enable students to engage more meaningfully and authentically with the course material and/or the discipline overall?
- How you might redesign your assignments and assessments to leverage generative AI to better support meaningful student learning?
- Engaging with ChatGPT and examining how it handles your current assignment prompts and problems. Think back to your ideal goals for student learning - for most of us, these goals are not achievable by generative AI. Consider how you can modify your assignments to support your actual goals for student learning.

The *Process* of Student Learning

For many instructors, thinking about *the process* of student learning and the assessment of that process - may be a useful way to (1) help students develop the habits of mind and skills essential to the discipline (or subject) and (2) shift the focus of student learning assessment away from end products that may lend themselves to chatbot plagiarism.

Higher education author and consultant John Warner recently commented: *“One of the hallmarks of growing sophistication as a writer is seeing the idea you thought you were expressing change in front of your eyes as you are writing. This is high-level critical thinking. This kind of emergent rethinking is an experience that every college-level writer should be familiar with.” (*Warner, 2022).

And, as Nancy Gleason director of the Hilary Ballon Center for Teaching and Learning at NYU Abu Dhabi, wrote recently in The Times Higher Ed, "[*...the assessment of only] a completed product is no longer viable. Scaffolding [and assessing] the skills and competencies associated with writing, producing and creating is the way forward.*" (Gleason, 2022).

This is particularly relevant here at MIT, where developing students as critical thinkers and problem solvers are primary and essential goals of an MIT education and cornerstones of the campus ethos. Experts in a field are comfortable “playing” with multiple solution paths and ideas - i.e., hitting dead ends - and learning from these mistakes to eventually formulate solutions (see reading suggestions below at Resources on Expert v. Novice Learners). Many novices (our students included) believe if they don’t see the solution right away, that they have failed. Learning how to solve problems involves learning from failed solution attempts and accepting that initial “failure” is almost always part of developing a successful solution. Here, a focus on the *process,* in addition to the product, can help students achieve our goals for them as MIT graduates and minimize chatbot plagiarism. Consider the usefully prescient comments of cognitive and learning scientist Michelene Chi in her 1994 paper on the role of self-explanations in the improvement of student science understanding:

> “...especially for challenging science domains....students should learn to be able to talk science (to understand how the discourse of the field is organized, how viewpoints are presented, and what counts as arguments and support for these arguments), so that students can participate in scientific discussions, rather than just hear science.” (Chi, 1994)

[A h

ammer hitting a wooden box with shiny bright colored crystals flying up as sparks, photograph - DALL-E generated image.]

Using generative AI in your assignments

Incorporating this technology in your assignments will generally involve asking your students to critique and compare – or even iteratively improve upon – AI-generated content (see additional reading suggestions below in the Resources section). We call attention to a continually expanding set of ideas as instructors from all disciplines proactively wrestle with these new challenges.

Here, for example, Lucinda McKnight, senior lecturer in pedagogy and curriculum at Deakin University, offers several suggestions for incorporating AI writers into student assignments, including:

- **Use AI writers as researchers.** They can research a topic exhaustively in seconds and compile text for review, along with references for students to follow up. This material can then inform original and carefully referenced student writing.
- **Use AI writers to produce text on a given topic for critique.** Design assessment tasks that involve this efficient use of AI writers, then [ask students to provide] critical annotation of the text that is produced.
- **Use different AI writers to produce different versions of text on the same topic to compare and evaluate.**
- **Use and attribute AI writers for routine text, for example, blog content.** Use discrimination to work out where and why AI text, human text, or hybrid text are appropriate and give accounts of this thinking.
- **Research and establish the specific affordances of AI-based content generators for your discipline.** For example, how might it be useful to be able to produce text in multiple languages in seconds? Or create text optimized for search engines?
- **Explore different ways AI writers and their input can be acknowledged and attributed ethically and appropriately in your discipline.** Model effective note-making and record-keeping. Use formative assessment that explicitly involves discussion of the role of AI in given tasks. Discuss how AI could lead to various forms of plagiarism and how to avoid this. (McKnight, 2022).

In subjects that use problem sets, ask students to explain their thought processes as they solve (a subset of) the problems. A few (of many possible) helpful prompts may include asking them to describe:

- Why they chose a particular method;
- Why they made certain assumptions and/or simplifications;
- Where they ran into dead ends, and how they found their way forward; and
- What broader takeaways they learned from solving the problem.

Developing students' metacognitive skills, by requiring them to self-regulate and self-explain their solution process may mitigate their use of AI-generated responses. Self-evidently, it is much more difficult to explain their problem-solving process when they didn't actually solve the problem! If a student uses generative AI in some aspect of the solution, the requirement that they document their thought processes will force them to engage a bit deeper with certain aspects of the problem and the learning process overall.

In their paper, Mollick & Mollick offer detailed descriptions of ways to leverage programs like ChatGPT in student assignments. They suggest that "...AI can be used to overcome three barriers to learning in the classroom: improving transfer, breaking the illusion of explanatory depth, and training students to critically evaluate explanations." (Mollick & Mollick, 2022). In line with the suggestions of McKnight above, they provide detailed examples of AI-leveraged assignments to support deeper student learning.

What's out there?

Finally, whether you plan to leverage AI or push back against its use in your subjects - it is useful to know about existing AI tools and applications. For a comprehensive and current list, see https://www.futurepedia.io/.

We are here to help:

- Would you like to rethink your real goals for student learning?
- Would you like to redesign your assignments and assessments (and possibly the way you teach) to better support those goals?
- Are you interested in leveraging the utility of generative AI to create more meaningful assignments and more authentic learning experiences?
- Contact us (TLL@mit.edu) with your suggestions, questions, and ideas. What are your strategies for engaging with this new reality? We are happy to collaborate with you on the development of effective approaches and to share the ideas with the MIT community.

GENERAL RESOURCES

Higher Ed

- Brake, Josh (2022). Education in the World of ChatGPT. *The Absent-Minded Professor Blog*.
- Bruff, Derek (2022). Three Things to Know about AI Tools and Teaching, *Agile Learning Blog*.
- D'Agostino, Susan (2023).*ChatGPT Advice Academics Can Use Now, Inside Higher Ed*.
- Fyfe, Paul (2022). How to cheat on your final paper: Assigning AI for student writing. *AI & Society*.
- Gleason, Nancy (2022). ChatGPT and the rise of AI writers: how should higher education respond?, *Times Higher Education.*
- Grobe, Christopher (2023). Why I'm Not Scared of ChatGPT: The limits of the technology are where real writing begins. *Chronicle of Higher Education*
- Klopfer, Eric & Reich, J. (2023) and Calculating the Future of Writing in the Face of AI. *Comparative Media Studies & Writing @ MIT*

- McMurtrie, Beth (2023). Teaching: Will ChatGPT Change the Way You Teach?, Chronicle of Higher Education.
- McKnight, Lucinda (2022, October 14). Eight ways to engage with AI writers in higher education. *Times Higher Education*.
- Mollick, Ethan R. and Mollick, Lilach (2022, December 13). New Modes of Learning Enabled by AI Chatbots: Three Methods and Assignments. Available on SSRN.
- Mondschein, Ken (2022). Avoiding Cheating by AI: Lessons from Medieval History *Medievalists.net*.
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- Watkins, Marc (2022). AI Will Augment, Not Replace [Writing], Inside Higher Education.
- *Comparative Media Studies & Writing @ MIT* Schiappa, Edward & Montfort, Nicholas (2023). Advice Concerning the Increase in AI-Assisted Writing, Klopfer, Eric & Reich, J. (2023) and Calculating the Future of Writing in the Face of AI.
- University of Michigan's Center for Research on Learning & Teaching (2023). ChatGPT: Implications for Teaching and Student Learning.
- *Warner, John (2022, August 31).* The Biggest Mistake I See College Freshmen Make. *Slate.*

General

- Bogost, Ian (2022). ChatGPT Is Dumber Than You Think, *Atlantic*.
- Roose, Keven Roose. The Brilliance and Weirdness of ChatGPT, *NYTimes.*

Resources for Supporting Self-Explanations

Chi, M. T. H., de Leeuw, N., Chiu, M.H., LaVancher, C. (1994). Eliciting self-explanations improves understanding. *Cognitive Science*, 18, 439-477.

Chi, M. T., Bassok, M., Lewis, M. W., Reimann, P., & Glaser, R. (1989). Self-explanations: How students study and use examples in learning to solve problems. Cognitive Science, 13(2), 145–182.

Crippen, Kent J., Earl, Boyd L.(2007). The impact of web-based worked examples and self-explanation on performance, problem solving, and self-efficacy. *Computers & Education*, 49(3), pp. 809-821.

Resources on Expert v. Novice Learners - add to tab in Assessments

Hardiman, P.T., Dufresne, R. & Mestre, J.P. The relation between problem categorization and problem solving among experts and novices. Memory & Cognition 17, 627–638 (1989). https://doi.org/10.3758/BF03197085

Larkin, J., McDermott, J., Simon, D.P., & Simon, H. (1980). Expert and Novice Performance in Solving Physics Problems. *Science*, 208(4450). pp. 1335-1342. DOI:10.1126/science.208.4450.1335

Polya, G. (2014). How to Solve It: A New Aspect of Mathematical Method. Princeton University Press.

Wankat, P.C., and F.S. Oreovicz. Teaching Engineering, Second Edition. (2015). Chapter 5 - Problem Solving & Creativity (pp. 93-115). Purdue University Press. (Open Access Edition)

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Chi, M. T. H., de Leeuw, N., Chiu, M.H., LaVancher, C. (1994). Eliciting self-explanations improves understanding. *Cognitive Science*, 18, 439-477.

Gleason, Nancy (2022, December 9). ChatGPT and the rise of AI writers: how should higher education respond?, *Times Higher Education*.

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Warner, John (2022, August 31). The Biggest Mistake I See College Freshmen Make. *Slate*.

Extra

In his excellent post on ...*Derek Bruff, suggests* that when used intentionally, AI tools can augment and enhance student learning, even towards traditional learning goals. Bruff offers an analogous example of his use of Wolfram Alpha [link] in his linear algebra class. He persuasively argues that by allowing students to use the software to row-reduce large matrices (after ensuring that students engage in and grapple with the row-reduction process "by hand") students are able to model and solve more interesting and challenging problems. I.e., use of the software allows students to focus on the more meaningful and relevant aspects of problems and problem solving.

Warner
ChatGPT Can't Kill Anything Worth Preserving

If an algorithm is the death of high school English, maybe that's an okay thing. *John Warner. 11, 2022*

It's not that student writing skills are so bad, but rather that they've had little experience developing their writing practices, the skills, knowledge, attitudes, and habits of mind of writers. They've been denied access to the most interesting parts of writing and thinking.

Those of us who teach writing and think deeply about these issues have, for years, been crying out about the importance of focusing on the writing process for the purposes of assessing progress, rather than merely grading the written artifact.

Writing is thinking. Writing is about making choices. People develop as writers when they are required to practice making choices inside genuine rhetorical situations. Again, this is almost entirely absent from school. This often also includes college.

- What can we do? Highlight suggestions from
    - Mollick & Mollick
    - Expert problem solving
    - John Warner stuff ?? suggestions?

GET EXAMPLES FROM MOLLICK PAPER

GIVE SOME EXAMPLES OF HOW TO USE SELF EXPLANATIONS.

John Warner quote: “It's not that student writing skills are so bad, but rather that they've had little experience developing their writing practices, the skills, knowledge, attitudes, and habits of mind of writers. They've been denied access to the most interesting parts of writing and thinking.”

Twitter: https://twitter.com/biblioracle/status/1599101797557489664

Author of

Expert-Novice References

It is interesting to not the comments of Michi Chi in her 1994 paper on, Eliciting self-explanations improves understanding

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- Brake, Josh (2022). Education in the World of ChatGPT. *The Absent- Minded Professor Blog*.
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END OF PART II

Material still to incorporate in future weeks –

Part 3

A policy prohibiting the use of ChatGPT for assignments in your course might read: Collaboration with ChatGPT or other AI composition software is not permitted in this course.

From College Unbound - policy statements around use:

College Unbound - AI Generative Tools Policy Development Plan

Teaching & Learning with ChatGPT: Opportunity or Quagmire?

Part III: Academic Integrity, Student Data Privacy & Equity

Certainly, for in-class assessments, e.g., written or oral exams student use need not be an issue. But for out-of-class assignments, instructors should assume that students will be taking advantage of the software (and their uses may not be readily detectable).

Academic Integrity

- Discuss academic integrity with students, including what constitutes original work and plagiarism in your field, what type of assistance is and is not permitted. It is also worth pointing out that OpenAI's terms of use include the following among its restrictions: users may not "represent that output from the Services was human-generated when it is not. (U. Michigan CIRT, 2023)

The Center for Research Teaching at the University of Michigan offers some excellent guidance. They write:."create assignments that require students to show stages of their work (outlines, rough drafts, etc.). [These] strategies can lead to deeper learning, provide instructors with more regular insight into student work, and increase the likelihood that the final product reflects

student efforts rather than a copy of others' work (human or artificial)." They offer the following specific suggestions:

- "Specify the types of source materials students should use, including some that are very specific to the assignment, such as field specific journal articles that require authentication, data collection and analysis when relevant, or client assessment for field assignments.
- Ask students to engage in and submit a reflection about what they have learned from completing the assignment. Sample prompts include: a) Discuss the most challenging and most rewarding aspects of your project. b) What was the most surprising thing you learned in the course of this project? c) If you had the chance to do it again, what one thing would you have done differently on this project?
-
-
-

With respect to Question 4: *What can we do to make sure that students thoughtfully engage with the issues underlying the use of these tools?*,

In a recent article in *AI & Society*, Paul Fyfe states,

> "...computer- and AI-assisted writing is already deeply embedded into practices that students already use. The question is, where should the lines be drawn, given the array of assistive digital writing technologies that many people now employ unquestioningly, including spellcheck, autocorrect, autocomplete, grammar suggestions, smart compose, and others? Asking students to "write with AI" can usefully provoke conversations not only about extreme examples of essay bots, but about everyday technologies, too. Within this spectrum of practices, what are the ethical thresholds? At what point, in what contexts, or with what technologies do we cross into cheating? Should that concept be redefined?"

In addition to leveraging AI writers for assignments, instructors may also want to proactively and overtly facilitate critical student engagement with programs like ChatGPT. McKnight suggests asking students to compare the output of several different programs, and critique the results or to ask an AI writer to generate a body of material, e.g. a list of references, on a particular topic and then evaluate the body of material generated by considering:

- "What was the body of material on which this AI was trained? In other words, what has this AI read and absorbed, to make its "assumptions" of what strings of words make "sense"?
- Who, and what, has been excluded from this body of material, and therefore, potentially, the text generated?
- What assumptions, biases and injustices are embedded in this material, and therefore, potentially, in the text generated?"

Anyone who has “played” with ChatGPT knows that - at least as for now - it doesn’t always get the right answer: sometimes it misses entirely, whereas other times it gets close, but doesn’t quite get there. Try entering some conceptual questions from your discipline/subject and see what you get. By analyzing ChatGPT’s (likely incomplete) response to a question from a pset or assignment, you can underscore the need for close and critical reading of all texts and online material.

Many strategies can be used to evaluate computer code or programs - as well as written, natural language text.

Are you interested in leveraging the affordances of ChatGPT or other AI writers in your assignments and coursework? Contact TLL (TLL@mit.edu) to brainstorm possible strategies and approaches.

Resources

Higher Ed

- Brake, Josh (2022). Education in the World of ChatGPT. *The Absent- Minded Professor Blog*.
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Dan's Part I Draft

Welcoming AI bots in our classrooms: A time for optimistic engagement

Doesn't it seem like every week now affords us an opportunity to welcome our new robot overlords?

The recent launch of the artificial-intelligence-powered chatbot ChatGPT is eliciting an energetic variety of responses from instructors everywhere ranging from consternation to cautious optimism. I think we are witnessing a novel and permanent disruption in the classroom activities of higher education. While it will take several months (years?) to fully assess the extent of this continually developing disorder, we are faced, in a few short weeks, with the beginning of a new semester. During the past three years, though, we've certainly learned how to pay attention to new challenges and how to pivot to meet them directly.

The inescapable reality is that ChatGPT and other AI writers are here and students are going to use them. Trying to prevent the use of these new tools is likely to be a losing battle. We may be dismayed with students who will simply use these platforms in order to achieve an acceptable grade without being called out or penalized for using external assistance. We may sympathize, to some degree, with students who contend that AI write

Consider, too, our dawning awareness that current plagiarism detection software cannot completely detect AI-generated material. Further, consider that AI writers will likely improve in efficacy as rapidly (if not more so) as the technology of any detection software. The appeal of this new resource – either in wholesome or shady ways – is undeniable.

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identifying someone's original work amid the array of commonly accepted digital technologies already available? Who among us has not relied on the ubiquitous "auto-correct" when typing; or accepted wording suggestions in our text messages. What attention should we give to the inherently visible flaws among AI writers? How are we to be concerned about their evident lack of inclusivity?

How do we describe our evaluation of quality? Are there differences in degree among possible methods for producing, say, foccaciacroissants? Consider some possibilities: Home baker preparing foccacia croissants 'from scratch'; Home baker using a boxed mix and a bread machine;; Neighborhood bakery using prepackaged ingredients; Automated factory assembly line; and A world-class chef employing her years of skill with locally-sourced ingredients. Do these various venues constitute differences only in degree, or do the variable circumstances result in substantive differences? An analogy, perhaps, as we seek to understand our engagement with AI writers.

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1. How can we use these AI tools to support and enhance student learning? (January 18)
2.
    - Can these tools help us to more effectively meet existing desired goals for learning outcomes?
    - How might these tools prompt us to reconsider goals for student learning?
        i. Are there levels of higher order thinking that we'd like students to achieve and if so, can AI tools help them get there?
        ii. Does the technology enable students to engage more meaningfully and authentically with the course material and/or the discipline overall.
        iii. How can we redesign our assignments and assessments to leverage these tools to better support authentic and meaningful student learning?
    -
    - Redefining learning outcomes and supporting higher-order thinking
        i. Designing assessments
    - Deepening our teaching and learning process
    - Supporting higher-order thinking and redefining learning outcomes

    - Attending to differences among disciplines
3. How can we employ these AI tools to better support both our traditional and redefined goals for student learning? and our effectively meet our existing learning outcomes? (January 25)
    - DesigningPreparing assignments
    - Designing assessments
    - Fostering individual and group engagement
4. How can we lead students to thoughtfully engage with these tools and, importantly, with their underlying issues? (February 1)
    - Academic integrity and personal responsibility
    - Shared values
    - Inclusive teaching

- Discuss academic integrity with students, including what constitutes original work and plagiarism in your field, what type of assistance is and is not permitted. It is also worth pointing out that OpenAI's terms of use include the following among its restrictions: users may not "represent that output from the Services was human-generated when it is not. (U. Michigan CIRT, 2023)

Undertaking an initial survey of these questions will no doubt raise other questions and concerns and, we hope, demonstrate additional cause for optimism and creativity. And, given the ongoing proliferation of articles and blog posts, we expect no shortage of material to offer for your reflection, comment, and use.

In the meantime, if you'd like to read some particularly thoughtful pieces, we recommend these three:

1. Bruff, Derek (2022). Three Things to Know about AI Tools and Teaching, *Agile Learning Blog*.
2. Brake, Josh (2022). Education in the World of ChatGPT. *The Absent- Minded Professor Blog*.
3. McMurtrie, Beth (2023). Teaching: Will ChaGPT Change the Way You Teach?, Chronicle of Higher Education.

4. x\\\\

Are you interested in leveraging the utility of AI writers in your assignments and coursework? Contact us (TLL@mit.edu) with your suggestions, questions, and ideas. What are your strategies

for engaging with this new reality? We are happy to collaborate with you on the development of effective approaches!

749 words for this first, introductory post (not counting, obv., the missing references)

Part III

In this third part of our series on the use of generative AI. Here, we outline a few issues to consider and address before the beginning of the semester:

- Academic Integrity
- Student Data Privacy
- Equity and Inclusion

Please also see Part I and Part II of this series.

Academic Integrity

The Teaching + Learning Lab recommends that you clearly state your policy on the use of generative AI in the academic integrity statement on your syllabus. Note that OpenAI's terms of use include the following among its restrictions: users may not "represent that output from the Services was human-generated when it is not."

Examples of AI-use statements for various levels of use are provided below. [DROPDOWN]

[HEADER 1] **The use of generative AI is prohibited in the subject**

Since a central goal of this subject is to help you become independent and critical thinkers, you are discouraged from using AI tools to create [text | code | equations | video | audio | images] in your work (assignments, activities, responses, etc). Any work submitted using AI tools will be treated as though it was plagiarized.

If any part of this is confusing or uncertain, please reach out to me for a conversation before submitting your work. *Adapted from the Center for Teaching Excellence, BC*

[HEADER 2] **The limited use of generative AI is permitted with proper citation**

Since a central goal of this subject is to help you become independent and critical thinkers, you are discouraged from the *extensive use* of generative AI tools to create [text | code | equations | video | audio | images] as part of your work.

If you do use AI-generated content in your assignments, you must clearly indicate what work is yours and what part is generated by the AI. In such cases, no more than XX% of your work should be generated by AI. Any AI-generated work not cited and/or used for more than XX% of your assignment will [specify outcome].

If any part of this is confusing or uncertain, please reach out to me for a conversation before submitting your work. *Adapted from the Center for Teaching Excellence, BC*

[HEADER 3] **Acceptability of use determined on a case-by-case basis**
There are situations when the use of generative AI may be appropriate and educational. If you believe that your use of generative AI is appropriate for a given assignment, please contact me (via email, or in-person at least [X] days before the due-date) to explain your rationale for its use. *Adapted from the Yale Poorvu Center's AI Guidance*

Please note - that for equity and inclusion related reasons, you should be extremely clear - that you are open and willing to discuss the use of generative AI with all students. You should also be transparent about your criteria for deciding justified use. A case-by-case approach may disproportionately negatively impact first-generation/low income (FG/LI) students and/or students from other traditionally marginalized backgrounds in higher education. These students may be less willing to reach out to instructors for special accommodations, and may, overall, be less comfortable approaching faculty. This may be due in part to fears of reinforcing negative stereotypes (stereotype threat) and/or because FG/LI students may not know that conversations with faculty are an expected part of higher education (i.e., they have less academic cultural capital than non-FG/LI students). In addition, without clearly articulated criteria for your decisions, students may feel that your decisions re AI use are unfair or biased.

For additional syllabus statements from colleges, universities and programs across the country, see: Classroom Policies for AI Generative Tools. Compiled by Lance Eaton, Director of Digital Pedagogy, College Unbound, Providence, RI.

[Dropdown]

Academic integrity statement (General)

In this course, I will hold you to the high standard of academic integrity expected of all students at the Institute. I do this for two reasons. First, it is essential to the learning process that you are the one doing the work. I have structured the assignments in this course to enable you to gain a mastery of the course material. Failing to do the work yourself will result in a lesser understanding of the content, and therefore a less meaningful education for you. Second, it is important that there be a level playing field for all students in this course and at the Institute so that the rigor and integrity of the Institute's educational program is maintained.

Violating the Academic Integrity policy in any way (e.g., plagiarism, unauthorized collaboration, cheating, etc.) will result in official Institute sanction. Possible sanctions include receiving a failing grade on the assignment or exam, being assigned a failing grade in the course, having a formal

notation of disciplinary action placed on your MIT record, suspension from the Institute, and expulsion from the Institute for very serious cases.

[ADD YOUR SPECIFIC EXPECTATIONS AND POLICIES WITH RESPECT TO THE USE OF GENERATIVE AI, HERE.]

Please review the Academic Integrity policy and related resources (e.g., working under pressure; how to paraphrase, summarize, and quote; etc.) and contact me if you have any questions about appropriate citation methods, the degree of collaboration that is permitted, or anything else related to the Academic Integrity of this course.[1]

For additional information on creating a syllabus that acknowledges and incorporates policies re the use of generative AI, see the Syllabus Resources on the Sentient Syllabus Project's website.

Student Data Privacy

If you would like students to engage with AI generated content in your subjects - you'll want to consider student privacy issues (ChatGPT is an open access tool, not supported by IS&T and not subject to MIT's student data safeguards) as well as the ethics of mandating that students use the tool. Read, and encourage all students to read ChatGPT's privacy policy which states that data collected by ChatGPT can be shared with third-party vendors, law enforcement, affiliates, and other users; and the terms of use, which states that "you must be 18 years or older and able to form a binding contract with OpenAI to use the Services" (i.e., students under 18 years old should not be asked to use the tool.) Users can request to delete their ChatGPT account, but all prompts and inputs to the site cannot be removed.

Writing in her blog, Jill Walker Rettberg, professor of digital culture at the University of Bergen in Norway writes, "OpenAI knows my email and the country I am connecting from, so they can assume my judgements about how ChatGPT responds to me align with "Norwegian values". OpenAI also knows what device, browser and operating system I am using, which can be a proxy for class and socio-economic status."

To address data privacy concerns, you may want to consider ways that students can use AI generated content without generating it themselves (E.g., you or a TA-volunteer could enter questions/prompts as specified by students, and share them for use in the assignment.)

Equity & Accessibility

For the time being, ChatGPT is open-access and free. Although there has been no official announcement, OpenAI is apparently planning to launch a paid version for unrestricted use. As with other apps/software - ChatGPT may become readily accessible only to those who are willing

[1] Office of Student Citizenship, W20-507, (617) 258-8423

and able to pay for it. When and if ChatGPT moves to a for-profit price structure, instructors will need to carefully reexamine and adjust how and when they ask students to engage with the tool.

With respect to accessibility, writing in Wired, Pia Ceres writes, “completely barring ChatGPT from classrooms, tempting as that may be, could introduce a host of new problems. Torrey Trust at the University of Massachusetts Amherst studies how teachers use technology to reshape learning. She points out that reverting to analog forms of assessment, like oral exams, can put students with disabilities at a disadvantage.” Contact Disability and Access Services at: accessibility [at] mit.edu if you’d like support designing accessible assignments and assessments.

New resources to add

Ceres, Pia (2023). ChatGPT Is Coming for Classrooms. Don't Panic, *Wired,* 26 January

Rettberg, Jill Walker (2022). ChatGPT is multilingual but monocultural, and it’s learning your values. December 6.

D’Agostino, Susan (2023). Designing Assignments in the ChatGPT Era, *IHE*. January.

Trust, Torrey ChatGPT & Education, College of Education, University of Massachusetts Amherst

—---------- END - Part III —----------

Extra

FYI, College Unbound has a pretty matured-looking policy rollout timeline that (very interestingly!) plans to include students in the policy-development process:

https://docs.google.com/document/d/1w1NKdOM2UW359_XPdtyVhMq6pBEt2B5rPNIfs3HeZN0/edit#heading=h.5anzq1njf8ny

https://www.facultyfocus.com/articles/educational-assessment/resilient-and-equitable-teaching-and-assessment-require-a-paradigm-shift/