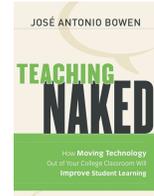
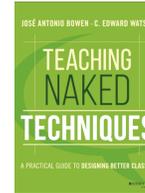
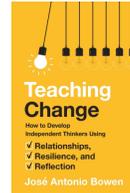
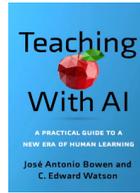


Teaching with AI

José Antonio Bowen



AI is Changing **WORKING** and **THINKING**

"See the patient, not the technology" (Augmedix)

"So you can do more of what AI can't." (CoCounsel

Healthcare: Clinical Notes, Summaries, Diagnosis

"See the patient, not the technology" (Augmedix)

Legal: Document review, Deposition prep, Analyze contracts, Transactional work

"So you can do more of what AI can't." (CoCounsel

EVERY job is going to change

100% of jobs have at least one task that AI can do better TODAY

Maslej, N., Fattorini, L., Brynjolfsson, E., Etchemendy, J., et al. (2023, April). [The AI Index 2023 Annual Report](#), AI Index Steering Committee, Institute for Human-Centered AI, Stanford University. All 950 jobs listed by the US Department of Labor

80% of the U.S. workers could have **10%** of tasks affected by AI

19% of workers may see at least **50%** of tasks affected by AI

Eloundou, T., Manning, S., Mishkin, P. & Rock, D. (2023, March.) [GPTs are GPTs: An Early Look at the Labor Market Impact Potential of Large Language Models](#), [Papers](#) 2303.10130, arXiv.org.

"It's like Grammarly for empathy"

AI-based conversational assistance

- IMPROVES customer sentiment
- REDUCES requests for managerial intervention
- IMPROVES employee retention
- INCREASES issues resolved per hour (14%)
- Greatest impact on novice and low-skilled workers

Brynjolfsson, E., Li, D., & Raymond, L. (2023, April). [Generative AI at Work](#) NBER Working Paper No. w31161. 5000 Customer Support Agents

Online Counseling

Hsu, S., Shah, R.S., Senthil, P., et al. (2023). Helping the Helper: Supporting Peer Counselors via AI-Empowered Practice and Feedback. *ArXiv, abs/2305.08982*.

Peer Support (19% increase in perceived empathy)

Sharma, A., Lin, I.W., Miner, A.S. et al. (2023) Human-AI collaboration enables more empathic conversations in text-based peer-to-peer mental health support. *Nat Mach Intell* 5, 46–57.

Detection of Distress in Healthcare

Morrow, E., Zidaru, T., Ross, F., et al. (2023). Artificial intelligence technologies and compassion in healthcare: A systematic scoping review. *Frontiers in psychology*, 13, 971044.

Consolation of Pet Loss (even when told directly by AI)

Liu, Y., Mittal, A., Yang, D. & Bruckman, Amy. (2022). Will AI Console Me when I Lose my Pet? Understanding Perceptions of AI-Mediated Email Writing. Conference on Human Factors in Computing Systems 1-13.

A New Era of Human Thinking

WORKING and THINKING



AI for Faculty

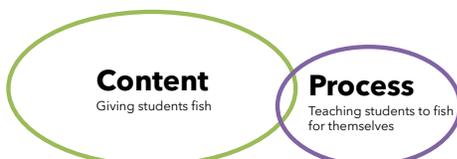
- What's unclear about these instructions?
- Provide five ideas for how to introduce X
- Design a classroom exercise where students will need to...
- Why might I want to keep using this old code/software?
- A sample lesson plan for...
- Improve this assignment so it is harder to cheat using AI
- Can you put this into simpler terms for beginning students?
- What are the 50 most important uses of Y?
- Summarize the meaning or symbolism of this story. Mention any plot twist. Speculate on the moral. Analyze how well the story reads to an average reader grammatically and structurally.
- Analyze typical assignments for college-level data science courses and adapt or create 5 new assignments that need to be done with AI assistance. Provide instructions. If the assignment can be done by AI alone then start over.

AI Research Assistants: Elicit, ResearchRabbit, Humata.AI, ExplainPaper, Perplexity

- Lit review
- Generate ways this research could fail
- What biases might I not see in this research?
- Find other research that has asked similar questions
- What other papers have the same methodology?
- Provide abstracts for research around this question
- What other behaviors have been connected to this problem?
- What interventions have been successful alleviating this problem?
- What are the possible barriers to this theory/behavior?
- What are the potential counterarguments?

AI will change
WORKING and **THINKING**

Thinking with AI is a new skill
What new curriculum will support this?



How might an AI assistant help you in your work ?
How might we update our curriculum?
What new skills or courses might we consider?

AI is Changing **AVERAGE**

AI is the new C Grade (A, A-, B, B- & P at Harvard)

Maya Bodnick (2023, July 26). Chronicle of Higher Education



It's Cheating: Stop It

Proctoring, Blue Blues. Surveillance

Is what we call cheating, what business calls progress?

Why would anyone hire a C student if AI can do this?

Can we articulate what our graduates will do that AI cannot?

Do your students know where to aim?

	Absent (0%)	AI-Level (50%) = F	Good (80%) = B	Great (100%) = A
Thesis, Ideas Analysis (20%)	There is no thesis or focus.	The essay is focused around a single thesis or idea	The thesis is interesting and includes at least one original perspective.	The thesis is original and there are compelling ideas throughout.
Evidence (30%)	Almost no detailed evidence to support thesis.	Some evidence may be missing, unrelated or vague.	Supporting evidence for all claims, but it is not as strong or complete .	A variety of strong, concrete and appropriate evidence with support for every claim.
Organization (20%)	There is little or no organization.	There is a clear introduction, body and conclusion, but some paragraphs need to be focused and/or moved.	Each part of the paper is engaging with better transitions, but more/fewer paragraphs and/or a stronger conclusion are needed.	Each paragraph is focused and in the proper order. Great transitions and the the right amount of details for each point. Introduction and conclusion are complementary.
Language Maturity (10%)	Frequent and serious grammatical mistakes make meaning unclear.	Writing is clear but sentence structures are simple or repetitive.	The language is clear with complex sentence and varied structure, but could be clearer and more compelling.	Creative word choice and sentence structure enhance the meaning and focus of the paper.
Style Voice (10%)	No sense of either the writer or audience.	Writing is general with little sense of the writer's voice or passion.	The essay addresses the audience appropriately and is engaging with a strong sense of voice	There is a keen sense of the author's voice and the writing conveys passion.
Citations (10%)	Material without citations	Good citations but not enough of them	All evidence is cited and formatted correctly and mostly from the best source.	All evidence is cited correctly and always from the best sources.

How are Students Using AI?

- Write a summary of A in the style of my professor B.
- Using examples from X, create 5 new X products and write descriptions
- Using campus language and that of previous University of Y press releases, write a press release that responds to a potential campus security incident
- Read the books by X and imagine 10 specific interview questions for an interview about his new book on AI, based on his early work.
- Ten ideas for paper topics about a
- I need an outline for a 500-word essay on
- Provide a sample introductory paragraph

Writing in Style

- I want you to write in my style. Here are some samples of my writing to emulate whenever you respond to my prompts. [upload samples]
- Before you begin, ask me what other information you might need to fulfil this task. Do you have enough samples of the writing of [my professor at my university] to emulate her style?

Motivation: Inspiring Students to Do Better

- Engagement **I CARE**
- Optimism **I CAN**
- Agency **I MATTER**

Better, Shorter and More Efficient Assignments

Transparency, Motivation, Belonging and **Scaffolding**

- PURPOSE** **WHY?** What skills will I gain? How will I be able to use this?
- TASK** **CLARITY** What will I need to do?
HOW Process? Roadblocks or mistakes I you avoid?
SPACING When and Where? Can I do this all in one sitting?)
- CRITERIA** **CHECKLIST** of the parts. I am on the right track?
RUBRIC What is expected? What matters and is most valuable?
RELEVANCE Examples of real-world work

Examples at Transparency in Learning and Teaching (TILT)

<https://tilthighered.com/tiltexamplesandresources>

AI Literacy & Prompt Writing

Write a 200-word process for removing a peanut butter sandwich from a toaster in the style of the King James Bible.

1. Task

- Write, Create, Summarize, Analyze, Elaborate, Reimagine, Explain,

2. Format

- Essay, Opinion Piece, Blog Post, Email, Jargon-Free Summary, Dialogue,
- Syllabus, Lesson Plan, Product Description, Legal Brief, Nurses Notes
- Code, Spreadsheet, CSV file, Table, Chart, PDF, Graph, Visual
- Length or number: List only the top four using bullet points.

3. Voice

- Using academic/comic/medical language, right-wing/left-wing,
- In the style of the King James Bible, Trader Joe's Frequent Flyer, Walmart
- Like a copywriter, engineer, human resources manager, millennial,
- In the style of my professor, Oprah, this person/group
- Respond as if you were Yoda, Martin Luther King Jr, single/married

4. Context

- Use/read/follow these models/examples
- Previous institution/personal emails/articles/press releases
- Suitable as a reading assignment for an undergraduate course
- I'm trying to be serious and funny at the same time
- I want solutions that are inexpensive

Meta-Prompts

Yang, C., Wang, X., Lu, Y., Liu, H., Le, Q. V., Zhou, D., & Chen X. (2023, Sep 7). Large Language Models as Optimizers.

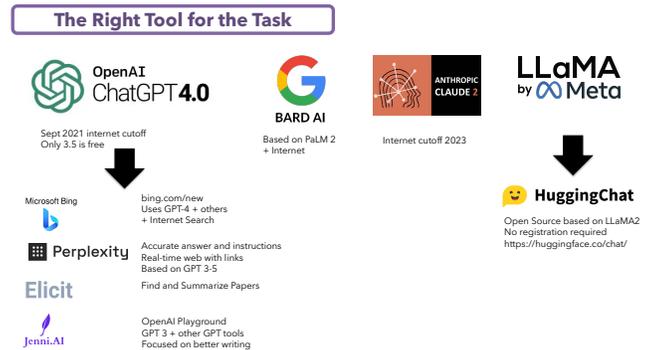
- Don't do anything yet. First ask me if any part of what I am asking you to do is confusing.
- Let's break it down!
- Take a deep breath and work on this problem step-by-step.

Get help with one of your assignments or tasks.

Prompt and Iterate:

- What makes the answer good?
- What makes the process/prompt good?
- Where are the potential problems?

What else needs to be defined?



AI Policies

1. When is AI use is permitted or forbidden? Why?
2. How should AI use be credited?
3. A warning about the limits of AI.
4. Clear rules about students' accountability for AI output.

Discussion

AI Literacy

Using AI ethically and responsibly.

How to use AI as a tool to learn.

Examples at Lance Eaton's Google Doc



Sample Policy:

1. One of the course goals is to help you learn to write and communicate effectively: that will require practice.
2. While you will be expected to use AI at work to increase the speed at which you can produce, you still need to be able to create, edit and recognize high quality writing yourself. If AI can do the work without you, you will not have employable skills.
3. To that end, the assistance of AI in your writing is prohibited in the first half of the course. In the second half of the course you may be allowed to use AI under specific circumstances as we transition to learning to write with AI.
4. You will still be responsible for the final product and for any limitations or potential biases from LLMs. I reserve the right to modify this policy as necessary.

Ask ChatGPT to write a policy?

Equitable Outcomes

Equitable: access, support, completion, earnings, wealth

AI is Changing CREATIVITY

“It’s like collaborating with an alien.”

Ryan McClelland, NASA research engineer

ASSIGNMENTS that use AI as a TOOL

Marketing

- Using examples from X, create 500 new X products and write descriptions
- Pick the best 10; Market test & Iterate
- Demonstrate the viability of the 3 best new products

Visual AI: Midjourney, DreamStudio, Stable Diffusion, Microsoft Designer

- Ira Greenburg, Director of the Center of Creative Computation & Prof at SMU
 - <https://objkt.com/profile/tz1SmFz7vPbLaCR9fetjFuhHpgB4EUhX6wfd/collections>
 - <https://emprops.ai/projects/the-oracles?page=1&size=51>
 - <https://emprops.ai/projects/beasts?page=1&size=51>
 - Create X using AI: Use text prompts, visual inputs and weightings. Iterate; refine.
 - Invent a new saint and create an image using AI that tells the story through iconography.
 - Teach an AI how to paint like John Constable. Create a new image and clarify what stylistic elements are visible.

Conversations with Famous Historical Figures:

- Copy and paste the following prompt to start a conversation with an AI. Ask 10+ follow-ups to prepare for our discussion. Save and upload your conversation
- “Respond as if you were Issac Newton. How did other scientists respond to your new theory of gravity at the time? Please name these scientists.”

Writing

- Ask ChatGPT for 5 ideas
- Critique these ideas and pick the best one
- Ask ChatGPT to do an outline of the best thesis idea
- Look at all five & argue why one of them is best. Also articulate what it is missing

Presentations

- Use an AI to help you prepare a presentation.
- You will need to present without notes.
- You alone are responsible for the accuracy and quality of content and the quality.

Take-Home Project

- Create a graphic novel about X using AI Comic Factory from Hugging Face

Data Visualization

- Do an analysis/recommendation/data visualization...
- Show me a table/trends/ prediction/outliers for this report... Act as a professional Data Scientist and write a Python code for loading five thousand random samples from the dataset for the above project.
- Write code to cleaning a dataset. The function should drop missing values...
- Write Python code to perform Exploratory Data Analysis (EDA) on the above project. Include a histogram to...

Improving Ai Code

1. Ask the AI to write code to do X.
2. Indicate the errors the AI made.
3. Do at least two versions where you make the code better.
4. Discuss the trade-offs in the different kinds of “better.”
What are the pros or cons of elegant, short, secure or simple?
5. How could you improve your prompt to make the original AI code more like your improved version?
6. Describe for an employer what value you added to this process.

AI for Formative Feedback

- What would make this essay/project better?
- How could I make this design accessible to more people?
- Explain this to me using a soccer/fashion/music analogy.
- What are 4 counterarguments to my thesis?
- Are there important references that I am missing?
- Check my essay against this “ready to submit criteria.”
- Which passages/slides are least clearly stated?

Find the errors in this code.

Rewrite this essay in more academic language.

Which of these statements are controversial

To whom? When? Where?

Are all of these statements absolutely true?

1. How might AI undermine the goals of my current assignments? (Is there work that is now too easy?)
2. How might you add an AI component to an assignment or assessment?
3. Cautions and Threats?



ALL Assignments are now AI Assignments

AI-Inclusive

Increase Ideas & Creativity
Collaborate with an Alien
Create Scenarios & Visualizations
Generate Drafts & Content
Find Errors and Improve Quality
Increase Feedback & Learning
Expand Research & Analysis
Predict Average Responses
New Types of Learning & Motivation

AI-Resistant

Local and Personal
Critique Results
Projects
Creativity and Collaboration
Video and Presentations
Class Conference
AI Detectors

AI-Transparent

Clear Policies
Define Quality
What can only Humans do?

AI as a **SKILL** for
WORKING and **THINKING**

AI as a **BASELINE** for
AVERAGE

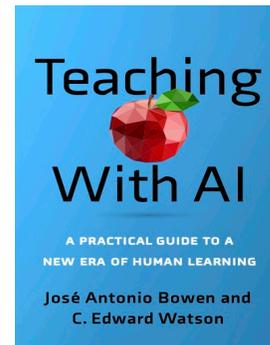
AI as **TOOL** for
CREATIVITY & LEARNING

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<https://www.press.jhu.edu/books/title/53869/teaching-ai>



More at www.teachnaked.com (under “Borrow”)

Teaching Change: *How to Develop Independent Thinkers Using Relationships, Resilience, and Reflection* (Johns Hopkins University Press, 2021)

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Teaching Naked: *How Removing Technology from your College Classroom will Improve Student Learning* (San Francisco: Jossey-Bass, 2012). AAC&U Ness Award 2013

Teaching Naked Techniques: *A Practical Guide to Designing Better Classes* with C. Edward Watson (San Francisco: Jossey-Bass, 2017).

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