

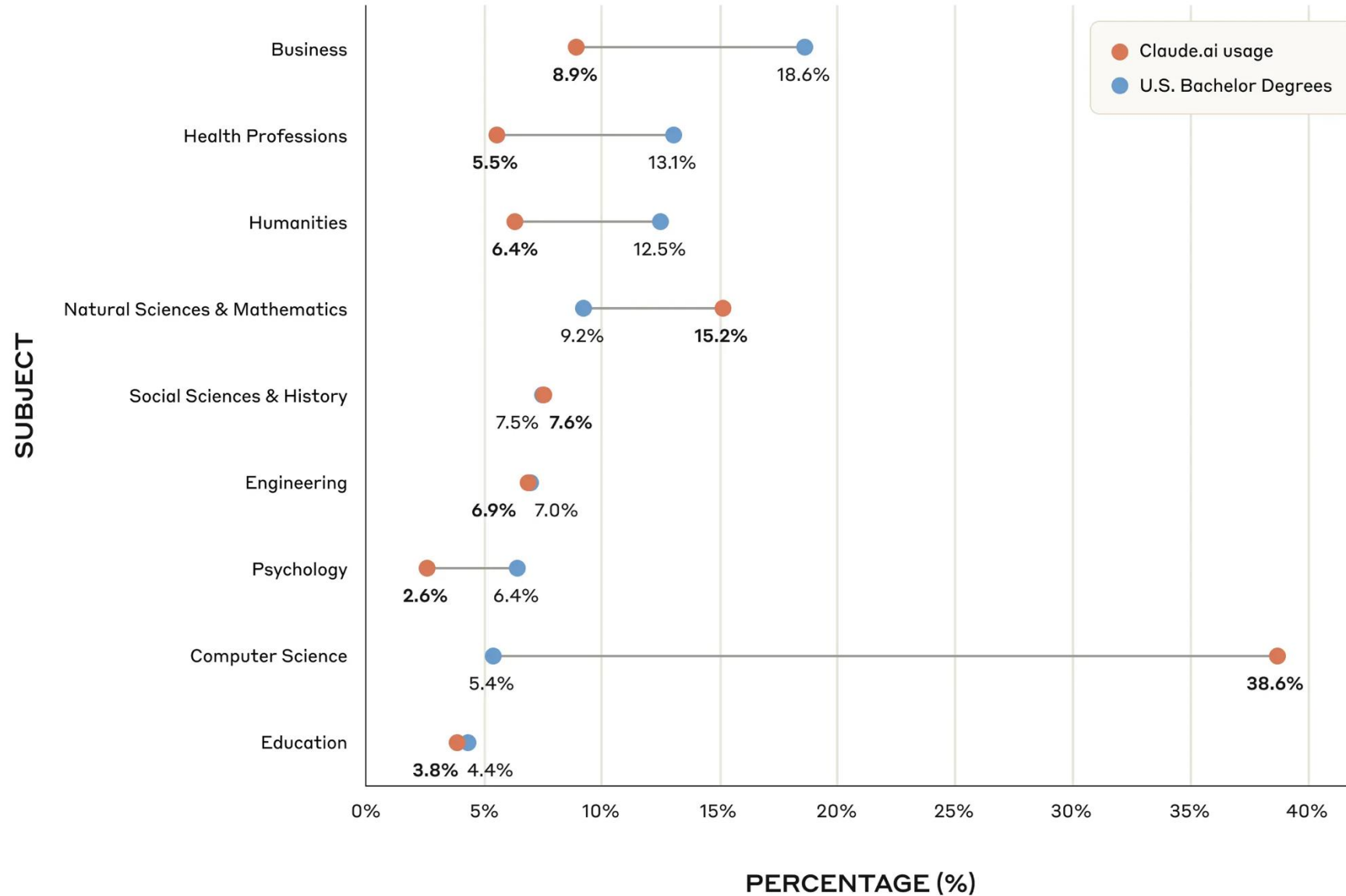
# AI in Action Session 3

Collaborations with AI in Student Research

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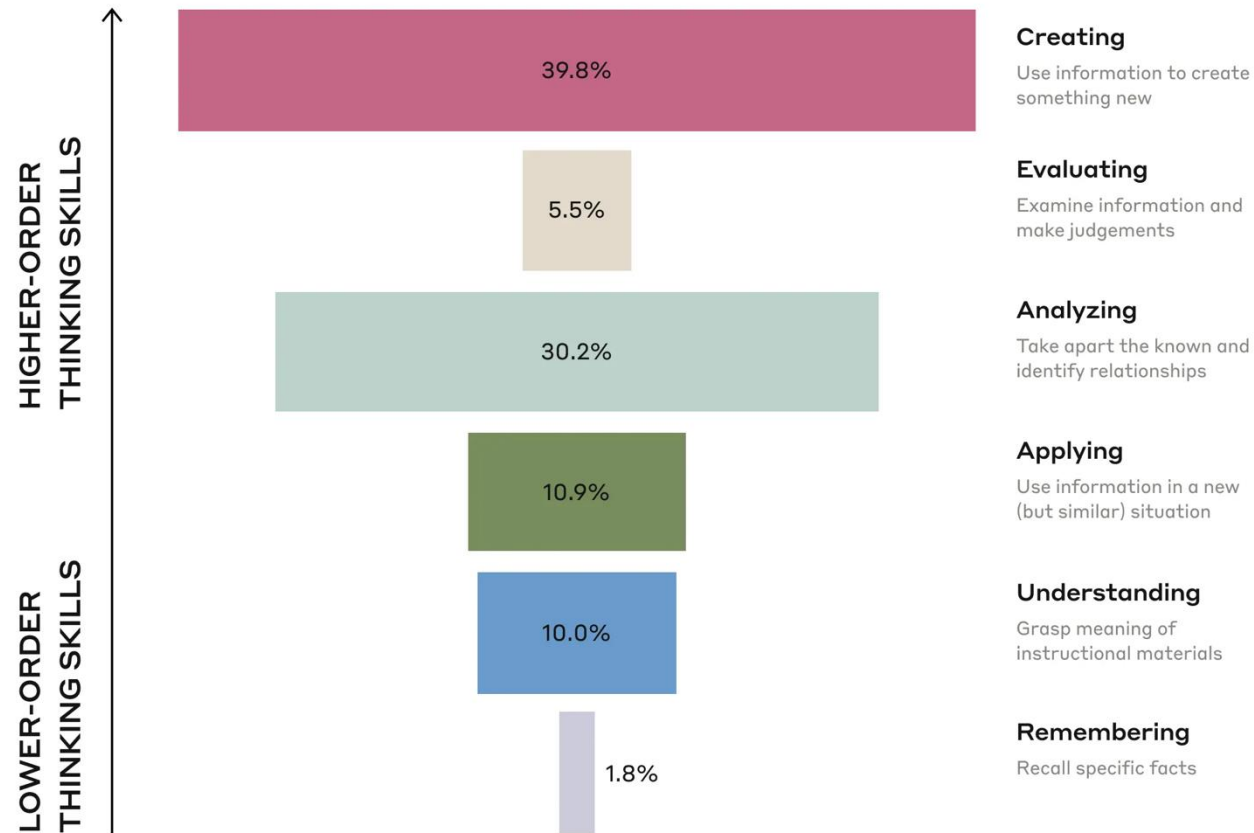
Department of Economics

# Claude.ai Usage vs. U.S. Bachelor Degrees



# Students Are Using AI—But How?

## Claude's skills on Bloom's Taxonomy



# AI as a Partner

Think about the goals of a liberally educated student (William Cronon)

- Listen and hear
- Read and understand
- Talk with anyone...

How to think of AI as collaborative partner?

My goal was to build structures and incentives to:

- Teach students to collaborate with AI
- Preserve cognitive ownership at higher levels of skills

<b>Project Phase</b>	<b>AI Collaboration</b>	<b>AI Skill Development Goal</b>
1. Research Proposal	Generate and refine topic ideas, explore feasibility, plan research steps	Prompt crafting, iterative refinement, assessing AI-generated ideas
2. Model, Data, & Annotated Bibliography	Use AI to help search for and summarize research, synthesize findings	Evaluate source quality, fact-check summaries, synthesize across texts
3. Poster and Data	Optional: Use AI for drafting text or designing layout	Understand limits of AI in visual/creative communication, polish output
4. Poster Session	Optional: Could use for preparation for poster session.	Practice independent communication of AI-supported work
5. Draft for Peer Review	Choose one AI-supported task: outline, intro/conclusion, or interpretation	Strategize AI use based on strengths/weaknesses; refine through iteration
6. Peer Review	No AI allowed	
7. Final Paper	Optional: Use AI to assist in editing, clarity, and argument development	Editing support, maintaining authorial voice
8. Conversation	Reflect on AI use throughout project	Develop a nuanced view of AI strengths, limitations, and integration into research

# Student thoughts

- Much of the concern surrounding AI relates to the decline of critical thinking and skill-building ...The logbooks helped reign me in my use, reminding me to use it as a resource, not a supplement.
- I think using AI properly takes discipline and that can be hard to gain when its so easy to basically abuse it....If we don't learn how to use it properly, we won't ever use it properly and then we simply stunt our learning.
- Now that I'm more confident in my ability to ask the right questions, I feel more excited about the possibilities ahead.

# Continued...

- This class helped me learn about effective methods to incorporate AI in the research and writing processes to enhance and improve your work.
- I think this course has helped me learn about how helpful generative AI can be in academic courses. Originally, I was pretty skeptical of its uses and thought people would stop actually doing work when they used it, but this class helped me learn about effective methods to incorporate AI in the research and writing processes to enhance and improve your work. I would say now I am pretty excited about AI and its potential.
- Since using AI in this class, I feel more equipped to use it efficiently in the future. Because this class utilized AI for such a range of activities, settling on a research question, finding resources, analyzing regressions, and organizing research writing, I am excited to use it for help in the future. Also, while it was extremely helpful throughout this class, I also saw some of its drawbacks, so I am not apprehensive as I learn more about it.

# What I've Learned: lessons and reflections

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Students can learn to use AI as a learning tool—but they need explicit guidance.



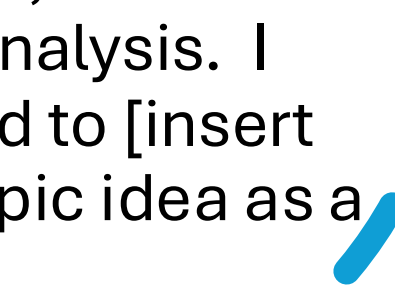
The logbook model fosters reflection.

# Research Proposal

Force students to start with an intentionally bad prompt. How do they follow up to get more useful help?

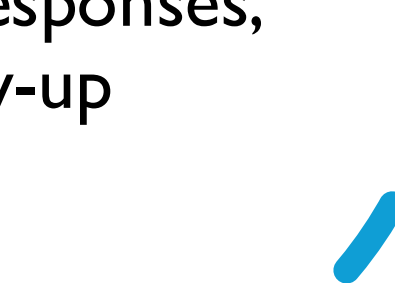
## Prompt


Please generate 10 potential topics for my research project for my introductory undergraduate econometrics course. As part of this project, I have to come up with a research question in economics, collect data, and subsequently perform regression analysis. I am most interested in topics related to [insert topics areas here]. Present each topic idea as a title.



# Poster Session Presentation Preparation

**Example of Prompt:** I've attached my research poster I've created for an upcoming undergraduate poster session in economics. I'd like to be better prepared to respond to questions and feedback as others ask me about my poster during the poster session. Could you ask me questions about my project (including but not limited to data sources, variables, regression model, and methodology)? After each of my responses, please provide feedback and follow-up questions to help me improve my explanations.





# Peer Review: I used AI to generate examples

## My prompt

I need to develop an in-class exercise to help students understand the point of the peer review process. They will each have to do a peer review for each other's research paper. They are not graded on their draft, they are graded on the peer review they do of someone else's research. I want them to read with a critical eye and be able to offer support and encouragement while also being honest about the flaws. I also need to teach them how to receive criticism -- this is valuable at this stage of research because there is still time to learn and address issues in your own research.

Students have all read AJR's 2001 paper (see attached). Can you create a good and bad peer review based on what that they will have to do for their peer review assignment? As a reminder, their assignment is (copied text and outline of what I wanted their peer review to be and rubric for how they will be assessed)

# Research tools



ELICIT



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