Critical Thinking Conversations:

Learning and Professional Identity in the Age of AI

Q. Sticking with the mountain analogy. Do we need to start thinking about climbing new, larger, and more difficult-to-navigate mountains? In other words, if we start with the same type of assignments, we are not giving students the opportunity to challenge themselves. By introducing more sophisticated problems that require students to go beyond what AI can do (for example, building), can we help students reach higher goals and accomplish more? It's a different paradigm, but students will still be learning, making mistakes, and continuing to grow.
A. Answered in webinar. Summary: Rather than simply making assignments more difficult, the shift is also toward designing different kinds of learning experiences—ones that emphasize creation, decision-making, and reflection over producing a single correct answer. AI can handle many traditional tasks, so the opportunity is to engage students in work that requires them to explain their reasoning, justify their choices, and build something that reflects their thinking process. In this way, it is both about climbing a bigger mountain and about navigating new terrain where the value lies in how students think, not just what they produce.

Q. I feel there's a connection between The Matrix and how AI can be shaped by misleading data—almost like choosing between the blue pill and the red pill 😊 Does the thinking stop once Ai has provided an outcome or is it only one data point … – I spend more time placing AI in the context of data triangulation with my students to force them to think beyond the prompt answer.
A. Answered in webinar. Summary: AI should be treated as one data point within a broader process of inquiry, not as a final answer. The thinking does not stop when AI produces an output; in many ways, that is where critical thinking begins. By comparing AI-generated responses with other sources, questioning inconsistencies, and evaluating credibility, students learn to engage more deeply with information. Positioning AI within a framework of triangulation encourages students to move beyond passive acceptance and into active analysis and judgment.

Q. How can we leverage AI to modify the paradigm we have related to pace? We expect students to progress through a course in 15 weeks. However, not all students require that much time, and others might need more. Are there ways to leverage AI to envision a different educational model? Delivering information (knowledge) synchronously feels like an outdated paradigm that supports only a small percentage of students sitting in a classroom.
A. Fascinating question: We have always had to manage differentiation and support for students that were outside the average - whether needing more or less, but AI could support that in a whole new way, making learning more customized, including the time scale- I personally cannot wait to explore what different models can do for our university and how it can make us more responsive while also not resolving to a full 1:1 model. (JS)

Q. I appreciate this conversation so much. It is a subject that has been on my mind for many years now, and frankly, I am on a constant pendulum. I wonder if you consider that the habits formed or forming outside of academia aren't short-circuiting that appreciation for critical thinking. My own take is that behaviors need to be addressed by recognizing the value of the struggle. How might one answer the claim that AI lets me focus on high-level thinking instead of getting stuck on busywork? When to use the analogy: you need to learn to crawl before walking, and to run a marathon?

A. Answered in webinar. Summary: While AI can reduce time spent on routine tasks, it does not eliminate the need for foundational learning. The process of working through challenges—what might be perceived as "struggle"—is essential for developing the mental models that support higher-level thinking. The goal is not to preserve busywork, but to ensure that students engage in meaningful effort that builds their capacity to think through what they are presented with. When students recognize the value of that process, they are better equipped to use AI as a support rather than a substitute for learning.

Q. Would love to hear your thoughts about ethics related to sustainability with AI, particularly as it intersects with the points you've already made.
A. Answered in webinar. Summary: Ethical considerations around AI, including sustainability, bias, and responsible use, are an essential part of AI literacy. The environmental impact of large-scale computing, the potential for biased or incomplete data, and the implications of over-reliance on AI systems all require thoughtful engagement. Rather than treating these issues as separate from learning, they should be integrated into how students use and evaluate AI, encouraging them to consider not only what AI can do, but what it should do and at what cost. RIT has some great minds, especially in the sustainability and energy space, and it will take many to find answers to this challenge-- in pursuit of AI and the energy needs it requires, we have to manage the impacts to our world- the planet, the people, and the economic and social impacts. These cannot be separated from AI technology.

Q. I'm about to begin a PhD in the fall, and have been thinking about what I should learn and who I should become. If AI makes competence easier to simulate, then judgment and critical thinking may become more decisive. For those of us who may lead in a future deeply shaped by AI and growing moral ambiguity, what should I deliberately cultivate now to become trustworthy and genuinely responsible, rather than relying on machine-generated confidence?
A. Answered in webinar. Summary: As AI makes it easier to produce polished outputs, the distinguishing qualities become judgment, discernment, and integrity. Developing the ability to evaluate information, make reasoned decisions, and reflect on the broader implications of those decisions will be critical. Cultivating habits of thoughtful analysis, ethical awareness, and accountability helps ensure that leadership is grounded in genuine understanding rather than surface-level competence. Trustworthiness will come from how decisions are made and justified, not simply from the outcomes produced.

Q. Is it possible, now that generative AI is integrated into the lives of so many students, often as a means to an end (to pass a course, to save time, etc.), for people to use GAI in a HEALTHY way, to study? Or is AI too unreliable for that endeavor?
A. Most advances in our world can be used for both unhealthy purposes and for healthy ones. I see great advantage in using AI as a tutor for learners. It does not get bored or frustrated, and it is awake and available at all hours. To me, that possible use as a learner support is a great, healthy option. AI can help us build engaging scenarios, offer us chances to examine data and information in new ways, but as with anything, over-reliance is a problem, and anytime the learner is not doing the work (cognitive struggle/friction), they are trading their capacity to grow with a machine-- likely in the name of expediency. I personally use Google LM notebooks to organize information, helping me keep track of details and sources so I can find ideas I can almost recall. (JS)

Q. Do you support or know about organizations like AI Control that try to advocate for AI Regulations and try to slow down the development of superintelligence? Can students get involved in one that you think will really help?
A. Students, all of us, can get involved! I am working on a lecture called AI is the new HAZMAT… the idea is similar… HAZMAT is chemicals that are both beneficial but also dangerous if not thoughtfully handled, with the right framing, storage, controls, and processes. We need to apply the same tools and systems to our use of AI. Many countries and regions of our world are ahead of the US on this- a new version of the Precautionary Principle. As a professor who specializes in risk, I find this incredibly important to get right. No benefit is worth existential risk. (JS)

Q. How long before our incoming students are significantly more capable with agentic AI than most of us as faculty?
A. Answered in webinar. Summary: In many cases, that shift is already underway. Students are rapidly becoming more comfortable experimenting with and adopting new AI tools. However, the role of faculty is not to outpace students in tool usage, but to guide how those tools are used thoughtfully and effectively. Faculty bring expertise in critical thinking, context, and judgment—skills that remain essential regardless of how quickly technology evolves. The focus, therefore, is less on keeping up with every tool and more on helping students develop the intellectual habits needed to use them responsibly.

Q. For Prof. Collison -- for an international student trying to build a research career, how should one gain visibility in an AI-shaped environment where rapid ideation can be amplified much faster than deep but slower work? How do we stay rigorous while remaining professionally visible?
A. I think the key is not choosing between rigor and visibility but designing for both. My advice is to build a visible portfolio of real work. Use GitHub to show what you can actually build. Use LinkedIn to communicate what you're learning and doing. Perhaps pursue arXiv and publications for rigor. What matters is evidence and whether people can see your contributions. We discussed the tension between depth and speed, but the goal is to show both consistently and with meaningful work…Build, Document, Share… Thus, your rigor and productivity are visible. (CC)