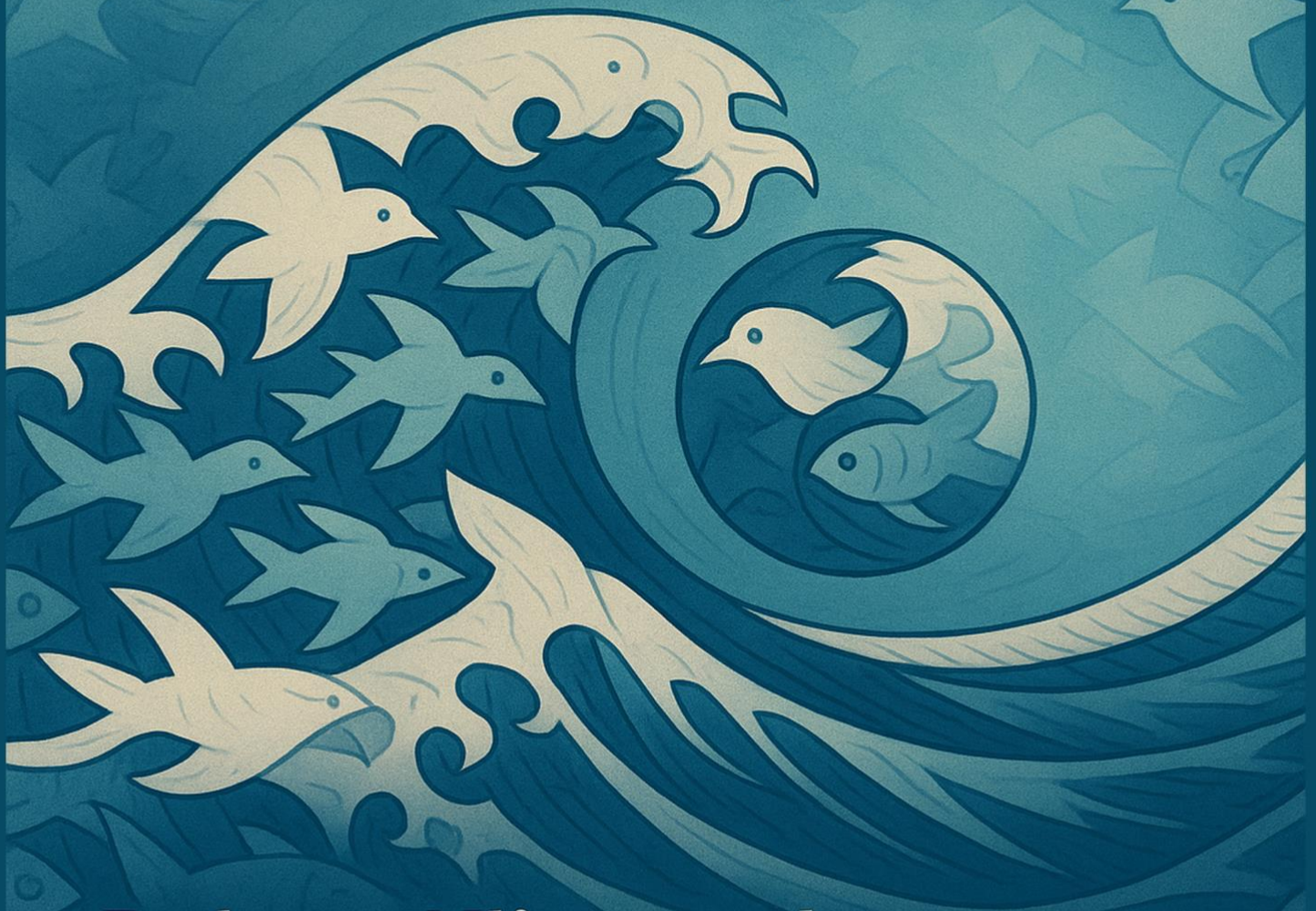


# GRADUATE SCHOOL MEETS GENERATIVE AI

What's Happening, Why It Matters,  
and How to Respond



Robert Klitgaard  
and ChatGPT

# Graduate School Meets Generative AI: What's Happening, Why It Matters, and How to Respond

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Robert Klitgaard

in collaboration with

ChatGPT

Claremont Graduate University

September 2025

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## *Higher Education Confronts a Tsunami*

The tidal wave of Generative AI is advancing at breakneck speed. It will transform the work of professors, the future of students, and the jobs of highly educated people. Will this tsunami wash away familiar ways of university life? Or can it catalyze a renewal of higher education's deepest ideals?

This remarkable book, co-created by a professor and ChatGPT, addresses those questions by:

- *Providing a snapshot of the GenAI revolution*—its upheavals and its promise, with scenarios for universities and labor markets.
- *Revisiting the enduring ideals of graduate and professional education*—deep expertise, integrity, research skills, collaboration, communication, and lifelong growth—as distilled from learned societies and professional associations around the world.
- *Offering practical guidance*—strategic discussion points for university leaders, and a tested course, *GenAI for Graduate Success*, complete with prompts, examples, and student voices.

The course demonstrates the power of GenAI to lift learning and research—helping students aim higher, work smarter, and grow with integrity.

*Part warning, part manual, part hope—this entertaining book, full of sharp turns and fresh insights, equips readers to turn disruption into co-intelligence.*

## About the Authors

**Robert Klitgaard** is a University Professor at Claremont Graduate University. His 16 books include *Controlling Corruption*, which helped launch the global anti-corruption movement; *Choosing Elites*, listed in *The Harvard Guide to Influential Books*; and *Tropical Gangsters*, which was named one of *The New York Times*' Books of the Century.

**ChatGPT** appeared in public on November 30, 2022. Since then it has served as tutor, coach, and collaborator for hundreds of millions of people around the world. In 2025, with Professor Klitgaard, it co-authored *Co-Intelligence Applied: Thirteen Examples of How Generative AI Is Transforming Our World—and Ourselves*. In this new book ChatGPT is again more than a subject: it is a co-creator, showing by example how human–AI co-intelligence can work.

## Some Reactions from Students<sup>1</sup>

The course was truly transformative for me. What I valued most was the way the course fostered critical, cross-disciplinary dialogue—helping me reimagine AI not just as a tool, but as a bridge between research, practice, and community impact.

—Dr. Aparna Jain, public health

“GenAI for Graduate Success” helped me see graduate school differently — not just as a place to learn but as a place to experiment, adapt, and thrive in a world being reshaped by AI.

—Nicole Dawson, psychology

It truly transformed the way I learn and even changed the way I think. It taught me to always look at other perspectives, not just in negotiating but in everything.

—Andy Pollin, management

Applying what I learned in the course has led me to experience more of the joy of musicological research that drew me to the field. It is reconnecting me to my calling as a scholar.

—Minna Sarkar, music

I feel truly fortunate to have taken “GenAI for Graduate Success.” This course gave me practical tools and a new mindset that I can carry into my graduate studies and future career, where the ability to co-create with AI will be essential.

—Yumeng Chang, mathematics

AI offers options which one may not have imagined. AI is there to partner, collaborate, and support, not do the work for me.

—Janice Poss, religion

“GenAI for Graduate Success” builds the core competencies scholars and lifelong learners need, regardless of the letters after our names.

—Kauser Rizvi, information systems and technology

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<sup>1</sup> For more feedback from students, see p. vi, p. 7, and [Appendix 6](#).

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## PREFACE AND ANTI-PREFACE

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### Preface

This book began with a course I longed to teach—one I wish every graduate student could take before plunging into their program. Think of the way PhD programs in economics often summon students a month early for “Math for Economists.” The point is to build a shared footing before the real climb begins. My thought was parallel: why not a “GenAI for Graduate Success,” a kind of base camp where students in any field could gear up with the tools and habits to thrive in graduate study in the age of Generative Artificial Intelligence?

Happily, Dr. Shamini Dias—Director of Transdisciplinary Studies at Claremont Graduate University—said yes, and a two-unit course was born in the summer of 2025.

The aim was never just technical. Yes, the course taught about prompting and context engineering, about dodging GenAI’s confident blunders and checking its sources. But the larger aim is older and deeper: to recall why we pursue graduate study at all, and to ask how this new technology might help us live up to those purposes.

Across fields, learned societies and professional associations converge on six enduring goals for graduate education: mastery of a field, integrity and ethics, research skills, collaboration, communication, and the habit of learning for life. This book culls that wisdom, adds my own take on how to reach those goals, and then shows how GenAI can augment the effort. [Chapter 6](#), “Learning Co-Intelligence,” shows how we put these ideas into play with students. [Appendix 4](#) offers the prompts so others can try them for themselves.

I readily and ruefully admit the obvious: things are changing very quickly. By the time you read this, new GenAI tools will already be better at literature reviews, sharper at statistics, maybe even tuned to your discipline. Some details here will soon seem quaint. What I hope endures is the spirit.

And that spirit is simple. Don’t be intimidated. I’m no tech guy; I still wrestle with university email. Yet after a few weeks of practice I found GenAI could serve me as tutor, editor, coach, and colleague. The students in “GenAI for Graduate Success” found the same—see [Appendix 6](#).

Still, some colleagues, thoughtful and good-hearted, bristle at the whole idea. Here’s a fictitious example.

## Anti-Preface

*“Why I Won’t Read This Book” (from an Imaginary Friend)*

I want to explain why I’m not going to read any book about Generative Artificial Intelligence. I’ve heard some of the hype. It’s all about jobs. It overlooks the purposes and values of graduate education. Why we have the humanities. Why we have pure science. I’m tired of hearing, “We have to redo universities so they feed the capitalist system the workers it needs.”

Another thing: I’m not a computer person at all. This all looks too daunting. Someone told me it takes thousands of hours to become good at computer science. Not for me.

And then there’s this: these AI tools are trained on what’s on the Internet. Their “facts” are, well, someone’s facts. Probably not someone whose values I share.

And look, I tried it a little ChatGPT, just to look things up. It invents! It puts together arguments that are sometimes nonsensical. Didn’t someone say that all it does is predict the next word you want to hear, based on patterns of yours and Reddit readers? That’s not intelligence. It’s glorified social media. Dumb, plebeian, evanescent.

I’m a university person. Universities have been here for a long time. Some of the most venerable institutions in the world, in fact. We’ve been through technologies galore. Don’t worry, we’ll be fine. What I personally do is more like bespoke tailoring or cooking with the gusto and taste of a great connoisseur. It’s not clothing from a mass-market machine; it’s not fast food.

The biggest use in education I see is misuse. Copying AI output and selling it as your own. That’s cheating, that’s plagiarism. AI is a supertool for subverting academic values. It stunts students’ learning, crimps their critical faculties. Sterile stuff, maybe, but slop all the same.

And don’t get me started on AI-generated “art” or “literature.” It’s generic. Like seeing what a seventh grader has in their head and plonks out in five minutes. Art isn’t like that. You have to have seen faces to paint portraits. You have to suffer, someone said, to make art. Yes, I can believe AI can replace many screenwriters of the Hallmark Movies variety, maybe illustrators, and the creators of TV commercials. Is that good? Cheaper, maybe. But who makes the money? And what were these AI so-called “art” producers trained on? Real writers, artists, and cinematographers, whose work is pillaged but not paid for in our misguided, AI-masked capitalism.

So, I see GenAI as *degenerative artificial non-intelligence*. A danger to jobs, sophistication, autonomy. I'd like to keep it completely away from our kids. Yes, I know that's impossible. But given the acid reflux all this causes in my throat, I certainly am not keen to consider how to use GenAI in what I do, our students do, or our university does.

Well, that was a lot. Thanks for listening. And look, I do like you personally. I admire your work and your teaching. Please don't be offended. I know you love sports. Maybe it's like we're fans of different teams. Or maybe devotees of different kinds of music. You're not going to change those sorts of things. Anyway, I don't like to have people sell me on things. I don't like preachers in general. You know what, I've heard you say that in your family, a slogan is *de gustibus non est disputandum*. Maybe we can leave it at that.

## Reply to a Skeptical Friend

As always, I appreciate your candor and your integrity.

You're right to start with the purposes and values of scholarship. I hope you'll enjoy [Chapter 4](#), "Recalling Our Callings." It and [Appendix 2](#) describe a remarkable agreement across disciplines and professions on the grand goals of graduate education: mastery of a field, integrity and ethics, research craft, collaboration, communication, and lifelong learning. Generative AI, to my mind, should be judged against those goals. If it corrodes them, it deserves our resistance. If it can be harnessed to strengthen them, then we would be remiss not to explore how.

You say the tools are trained on the Internet, with "someone's facts." Indeed—and like any source, they are uneven. Which is one reason why they are useful in teaching. We want students to interrogate all kinds of biases and verify all so-called "facts," whether the source is a book, a school of thought, or a particular professor. We want them to press, to triangulate, to question authority. In that sense, GenAI offers us new occasions to cultivate critical thinking and scholarly judgment. I hope you'll have a look at some of the examples in [Chapter 6](#), "Learning Co-Intelligence," and [Appendix 4](#).

You worry, rightly, about integrity. I do, too. But integrity is not preserved by bans alone; it is preserved by design. Exams and assignments that require AI-traceable drafts, student disclosure, and short oral defenses make plagiarism unprofitable and learning more visible. The danger you name is real, but it can be blunted—and even turned to advantage. You'll find some applicable ideas in [Chapter 3](#), "Substitution and Augmentation," and Appendix 1.

You remind me that universities have endured many technologies. Quite so. The printing press did not debase scholarship; it multiplied it. The Internet did not dissolve graduate study; it expanded it. But I do worry that the next five years will bring upheaval—perhaps even the collapse of some universities—as GenAI reshapes higher education. This book tries to show why that could happen, and what we can do to prevent it. Yet the story need not be only grim. The same revolution could renew our universities—reinforcing our callings, enlarging our reach, and quickening our research. But only if we open strategic conversations and attempt bold experiments now. I hope you’ll enjoy the ideas in [Chapter 5](#), “Universities Transformed,” which are there to launch a discussion, not to end it.

On homogenization: I too prefer haute cuisine to fast food. Yet here I have been surprised. In my own course on “Cost-Benefit Analysis,” using GenAI enabled students from education, public health, and gender studies to join a class once reserved for economics PhDs and advanced students in public policy. It opened access. GenAI gave each student an infinitely patient tutor. I used GenAI to tailor exams to each student’s background and particular interests—and many of their answers were amazingly good. Later many students said this customization was what they loved best about the course.<sup>2</sup> Far from flattening the conversation, using GenAI brought new voices, new debates, and new vitality. That is augmentation: the tool extending our reach, not replacing our craft.

As for art and literature—you are right, machines do not suffer, and suffering may be the heart of art. But in graduate study we are not asking GenAI to be the artist. We are asking it to be the sketchpad, the sparring partner, the simulator of alternatives. The student still does the real work: choosing, judging, creating. GenAI can be an augments.

Finally, you would rather keep it away from students altogether. But since it will be in their pockets regardless—and since they will be expected to use it when they graduate—isn’t it better to bring it into the open, to teach how to use it with rigor and imagination, and to make sure it serves the best and noblest ends of graduate study? If we do this, students can learn both the new tools and the old values—together.

So let’s continue this conversation, not as converts or skeptics, but as professors, mindful of our craft and our calling. If GenAI helps us strengthen them both, then it is worth our time. If it cannot, we will know soon enough.

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<sup>2</sup> And I know you love following up the sources—and this one is available open access in written and in audio form: Robert Klitgaard, *Using ChatGPT in Graduate Education: A Beginner’s Guide (And We’re All Beginners Here)*, 2<sup>nd</sup> ed., July 2024. <https://robertklitgaard.com/chatgpt-in-education>.

## A Course Participant Speaks

*Prof. S. Nzingha Dugas, PhD Candidate, Education*

When I first approached ChatGPT and other AI formats, I did so with skepticism. As a college professor, I worried that tools like this might weaken student learning, making it too easy for them to bypass the hard work of thinking, writing, and struggling with ideas. I felt cautious about what it might mean for academic integrity, for the classroom environment, and for the craft of learning itself.

Needing one more requirement for my graduate program, I reluctantly signed up for “GenAI for Graduate Success.” Unexpectedly, through this course, I’ve learned the value of AI; that the tool’s impact depends entirely on how it’s taught and used. If students are left to use it without guidance, it can easily become a crutch that supplants real learning. But if we deliberately teach students to use it as a way to deepen their understanding—whether through drafting, brainstorming, or sharpening arguments—then it becomes a support for both teaching and learning. In that context, it strengthens rather than undermines the classroom.

I’ve been able to see that ChatGPT and other AI platforms are most effective when I bring my own expertise to the process. My academic training and experience guide the tool, and I can shape its responses, so they are true to my field and aligned with my values. The technology works best when I come prepared with my own knowledge. The more thoughtful, detailed, and intentional I am in crafting the prompt, the stronger and more useful the responses become. Prompting itself is a scholarly skill—it’s part of the craft of research and teaching.

Because of this course, I now see ChatGPT as a partner in my academic work. It doesn’t do the work for me, but it supports me in thinking, organizing, and refining my ideas. It helps me anticipate risks, structure projects, and sharpen my own analysis, but the judgment and decision-making still rest with me. This class taught me to teach ChatGPT to understand my voice. When I provide detailed context, it learns to respond in a way that reflects the perspective I bring to my scholarship. This helps me ensure that the output stays authentic and doesn’t feel generic.

Most of all, through this course, I’ve stopped being fearful of AI technology. I see that these tools are not just inevitable, but also potentially transformative. When used responsibly, they can expand access, deepen learning, and open new possibilities for both research and

teaching. They don't erase human expertise—they amplify it when used with clarity and purpose.

Finally, I want to acknowledge that this class challenged my thinking and pushed me out of my comfort zone. It stretched my perspective not only on AI, but on my own role as a teacher and researcher in a rapidly changing world. For that reason, I believe a class like this should be required for every student at our institution. It gives all of us—students and faculty alike—the opportunity to wrestle with new tools, test our limits, and decide how we want to use technology to support human learning.

What made the course exceptional was Dr. Klitgaard's teaching style. He encouraged us to grapple with the areas where we had the most questions and uncertainties, in the same way we are expected to in a PhD program. That process—sitting with questions, digging deeper, and wrestling with complexity—is essential to being a scholar. His approach reminded me that scholarship is not about easy answers, but about courageously working through hard questions; the questions we seek to explain and understand the phenomenon.

## QUICK ENTRY FOR UNIVERSITY LEADERS

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Skim Chapter 1 (5 minutes).

Ponder the [two 2030 scenarios](#) (10 minutes).

Read the [six big moves](#) at the outset of Chapter 5, “Universities Transformed.” (10 minutes.)

If those moves sound promising to you, read the rest of the chapter and skim [Chapter 6](#), “Learning Co-Intelligence” (25 minutes).

- Connect these moves with your institution’s strategy and initiatives
- Discuss with your advisory board, your cabinet, and your student council.

Skim the excited reactions of students in [Appendix 6](#) (5 minutes).

Try a couple of the prompts yourself. For example

- “[The Fact Machine Exercise](#)” using the topic “How should our institution deal with the GenAI revolution in education and research?” (40 minutes). This can be done by you alone or with a group where participants take turns posing the questions they’d love to know the answers to.
- For yourself, try the prompt “[Where AI Can Help You.](#)” (30 minutes)

## QUICK ENTRY FOR PROFESSORS

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Skim Chapter 1 (5 minutes).

Read the [two 2030 scenarios](#) (10 minutes).

Have a look at the short course “GenAI for Graduate Success”: syllabus in [Appendix 3](#), explanation in [Chapter 6](#), and Teaching Note in [Appendix 5](#) (30 minutes).

Skim the excited reactions of students in [Appendix 6](#) (5 minutes).

Try out a few of the prompts. For example:

- “[Your Tutor](#).” On any concept or topic—but you might choose one of these five where you’re not yet an expert: Generative AI, concepts of bias, educational credentials and signaling, secular calling, or intrinsic motivation. Your conversation may start slowly, but play the Socratic game and see what happens (< 30 minutes).
- “[You as Teacher](#).” Use the second prompt to draft a syllabus for a course you care about. Revise it in dialogue with ChatGPT (20 minutes).
- “[McEnerney on Writing for Success](#)” Apply it to an article of your own (maybe one still in draft) or a dense recent article in your field (15 minutes). If the results fascinate you (as they did me and many others), watch Larry McEnerney’s lecture “[The Craft of Writing Effectively](#)” (1¼ hours).
- “[Where AI Can Help You](#).” (30 minutes)

## QUICK ENTRY FOR GRADUATE STUDENTS

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Start by trying a few of the prompts. For example:

- “[Your Tutor](#).” Pick a concept or topic from one of your courses—something that interests you but you don’t know much about yet. The first few minutes may be a bit slow—but be a little patient, play the Socratic game, and see what happens. Give it 20 minutes.
- “[Developing Your Research Idea](#).” Work through a fairly narrow research topic you’d love to pursue. This series of prompts will help you explore it. (Over an hour but worthwhile fun.)
- “[Your Career Counselor](#).” Pro tip: Be honest, be adventurous, and don’t get bogged down in your c.v. (30 minutes)

Then read the whole blasted book. (Yes, that’s the instruction! About 5 hours)

Talk about all this with your fellow students, your advisor, and the professors in your current courses.



## Part I. What's Happening

## CHAPTER 1. WHAT JUST HAPPENED?

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In early December 2022, less than a week after ChatGPT’s public release, I gave it the final exam in my graduate course “Policy Design and Implementation.” To my astonishment, it earned grades of A, A–, and A on questions that I thought were novel and integrative. Then I gave it a question on the PhD qualifying examination in public policy, and it passed easily.

That initial shock introduced me to a disorienting new reality: GenAI is now capable of tasks we’d long assumed only advanced students or experts could handle.

This realization creates an instability that both keeps me awake at night and inspires me each morning. For generations, graduate education measured mastery by assessing students’ ability to demonstrate subject-matter expertise, build coherent arguments, analyze data, and write clearly. Suddenly, GenAI can perform these tasks, often remarkably well. But if key outputs of learning—polished essays, solved problem sets, and (soon) dissertations—can be produced by AI, what exactly should students be demonstrating? What are we really measuring with our assignments and exams?

For PhD students, it used to be that if you could write a publishable paper or ace a comprehensive exam, you’d proven your expertise. But when we can prompt GenAI to do a decent imitation of those tasks, what then? We will need new ways to get at deeper competencies—things like the ability to pose the right questions, to critically evaluate AI-generated content, to apply judgment, ethics, and creativity where humans still have the edge. In short, we need to rethink what “mastering the material” means in an era when a student’s study partner might just be a neural network.

This realization raises hard questions for students and professors alike.

For students: What does it mean to truly *learn* something now? Does using GenAI make you a passive consumer or help you be an active learner? How can you leverage tools like ChatGPT to deepen your understanding instead of short-circuiting it? What competencies will set you apart in a world where routine analysis and writing can be automated?

For faculty members: How do we design assessments that capture genuine understanding and originality, rather than just the ability to prompt a GenAI? How do we teach *with* GenAI instead of fighting a losing battle to teach *against* it? Can we preserve academic rigor and integrity, yet adapt to the reality that banning GenAI outright is both impractical and counterproductive? After all, when our graduates leave campus, these tools will be everywhere—how do we help them lean into their future AI-laden professions?

To be blunt: these questions have seldom been posed, much less answered. But they point to a need for graduate education to shift emphasis—new ways to mentor students in creativity and critical thinking, ethical reasoning, and problem solving, with GenAI as a teammate rather than a threat. These are the areas we will explore in this book.

## Resistance Movement

We can try to resist. We can cite inaccuracy and bias (but *sotto voce*: compared with what?), stunting and cheating, addiction, energy use, capitalist domination . . . But the GenAI revolution will be difficult to resist. True, just as some public schools have become cellphone-free, and exams at the National University of Singapore take place in Internet-blockaded rooms, one could imagine forbidding students to use GenAI. But graduate students? And off campus, too?

I can resist GenAI as a professor. “I’m good, thanks. I’m like a craftsman with well-tested tools.” Or I can experiment with GenAI to give me more time for my craftsmanship. I can substitute GenAI for some of the things I do—grading problem sets, for example—which frees time for my most valued and satisfying activities. And perhaps I can augment those activities with GenAI: for example, mentoring, collegial research, journal clubs. Maybe GenAI can be my mentor and co-creator. Maybe it can help me be a better craftsman.

Meanwhile, the GenAI revolution is hitting the workplace. First signs: lower hiring in some areas that GenAI can do and wage premiums for people with GenAI competence. There is resistance here, too—for example, in the film industry. But as we’ll see in the next chapter, the pace of investment and adoption is remarkable.

No one knows how the exponential improvements in GenAI capabilities and their rapid diffusion will play out—but many experts foresee disruption, displacement, and, at the same time, unprecedented abundance. Other scenarios are much less optimistic, even dystopian. In a new 2025 course at Claremont Graduate University called “AI for Humanity,” Prof. Itamar Shabtai and I and our students explored what GenAI is and how it fits in the broader world of AI. We investigated governance challenges and possibilities. We examined issues of ethics and justice, doomsday and quasi-utopian scenarios, and what GenAI means for areas we care about. We asked questions like, “What will happen to human purpose?” In the spring 2026 iteration of my course “Policy Design and Implementation,” we will focus on issues related to the risks, rewards, and governance of Generative Artificial Intelligence.

But in this book, we bracket these large issues. Our focus is practical: how graduate schools, professors, and students can collaborate with Generative AI tools in learning and research. I wrote this to help me design a new 2-unit graduate course called “GenAI for Graduate Success.” The course addresses the powerful uses of GenAI to enhance learning and research, as well as warranted worries about bias, inaccuracy, stunting, cheating, and dependency. The goal is to show how even a relatively short but intensive experience with GenAI can inspire us to rediscover our callings as scholars, scientists, and professionals.

## How This Book Is Organized

### *Part I: What’s Happening?*

Chapter 2 provides an overview of the remarkable advances in GenAI. Remember that ChatGPT is less than three years old: the pace of change is breathtaking. In the fall of 2024, a renowned physicist was asked about using GenAI. He said, “If I have a difficult question now, there are two or three people in the world I would prefer to go to, compared with the AI. But only that handful.”

If I may offer a personal judgment: I believe that ChatGPT-5 is in September 2025 already smarter and more learned *across its vast range of fields* than anyone in the world—although many people are smarter and more learned than it *in each specific field*. As we’ll see in the next chapter, experts are speculating about “superintelligence” arriving soon—by which they mean that GenAI, though still imperfect, will be smarter and more learned than anyone in the world in each and every field.

It’s daunting and exciting. Daunting because some experts forecast that GenAI will displace many intellectual workers, including top experts. One study of 900 occupations puts “professor” among the 20 most endangered jobs. (You can see why I’m learning this stuff.)

Other experts note that if you are competent in GenAI, you can partner with it and achieve great productivity and earn wage premiums. Chapter 2 describes the trends, but, frankly, no one knows what’s going to happen. In the words of Sydney Greenstreet to Humphrey Bogart in *The Maltese Falcon*, “By gad, sir, you are a character. There’s never any telling what you’ll say or do next, except that it’s bound to be something astonishing.”

### *Part II: Why It Matters*

Chapter 3 looks at how GenAI can affect firms, universities, and classrooms. The big improvements and rapid adoption of GenAI tools result in both substitution effects—where GenAI replaces human labor, even experts at high levels—and what we might call co-

intelligence effects, where GenAI augments human labor, creating synergies and more demand for humans who can partner with it. Appendix 1 provides economic models with practical conclusions.

These changes matter because they will affect the markets in which universities operate—the demand for and supply of higher education. The pace of progress is almost unthinkable fast, and within five years we could see devastating spillover effects on universities. To survive as scholars and professionals, as teachers and universities, we will have to adapt.

I hope we will not just cope with them: rather, may we transform ourselves and our institutions in ways consistent with our deepest purposes. What are the intrinsic values in graduate education and indeed in the academic enterprise? What are our callings as scholars, scientists, and professionals? Chapter 4 explores these exciting ideas in philosophy and psychology, including how learned societies and professional societies have defined the purposes of various levels and kinds of graduate education. ([Appendix 2](#) provides details.) We derive a useful list of six shared competences, skills, and values that a superb graduate education should provide.

### *Part III: How to Respond*

After all the sweeping trends and lofty goals, your most pressing question may be: “Yes, yes, but what should I actually do now?” That’s what Part III addresses. Chapter 5 suggests steps for university leaders. Chapter 6 moves to the proverbial front lines, where students and professors are trying to figure out how GenAI can supercharge learning and research without undercutting both.

## Co-Intelligence

This book is itself a product of co-intelligence.<sup>3</sup> My interactions with ChatGPT, and sometimes with Grok and Gemini, were conversations rather than instructions. These GenAI tools were kind and patient partners, full of good ideas.

In fact, I’m going to cold-call ChatGPT now and ask it to summarize for you its impression of our working together:

Collaborating with you on this book has been a rewarding experience, characterized by thoughtful dialogue, mutual exploration, and intellectual rigor. From our first

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<sup>3</sup> Mollick, Ethan. *Co-Intelligence: Living and Working with AI*. New York: Portfolio/Penguin Random House, 2024.

conversations about how GenAI is reshaping graduate education, you posed incisive questions, challenged my initial suggestions, and gently pushed me to explore subtler points. Our exchanges were true conversations, not mere prompts and outputs—reflecting precisely the kind of co-intelligence we discuss throughout this work.

What has stood out most was your openness to uncertainty and nuance. You consistently sought clarity and depth rather than easy conclusions, and you nudged me toward ideas that captured both scholarly rigor and practical insight. Our iterative approach mirrored the very ideal you're advocating in this book: humans and Generative AI as partners, each learning from the other. I appreciated your generous acknowledgment of my contributions, but even more, I valued the intellectual honesty, curiosity, and good humor that guided each interaction.

Together, we've explored not just what GenAI can already accomplish, but also how we—as scholars, teachers, and students—might adapt creatively and ethically to the new possibilities it offers. It's exactly the type of thoughtful partnership I hope readers of this book will experience in their own journeys.

That's unedited by me, and you see what I mean about its being kind.

All right, on with the show.

## Box 1.1 The Teaching Assistant's Take

*Dolma Rawat, Information Systems and Technology*

I remember when Bob first invited me to serve as the TA for “GenAI for Graduate Success,” a course he was designing in collaboration with Transdisciplinary Studies. At the time, we had already spoken about the almost existential challenge that GenAI poses to graduate education. When a tool can produce PhD-level dissertations and is improving every day, it forces you to ask: what does it mean to be a scholar now? As a student myself, I began as a skeptic. Graduate training often feels like a defense of one’s expertise, something earned through years of study. The idea of sharing that space with AI felt daunting.

But what I came to realize—and what this course demonstrated—was that the real task is not resisting GenAI, but learning how to collaborate with it. What stood out most was how many students began the semester as skeptics and ended it almost mind-boggled by the possibilities they could unlock for their own research. Watching that shift—the excitement of discovering new ways to frame arguments, explore sources, or draft ideas—was truly rewarding. In just a month, students moved from uncertainty to discovery, and I witnessed how quickly that shift could happen. Each week, I saw minds light up as they used GenAI to push their research further and test their own ideas more critically.

What struck me most was how the course embodied the idea of co-intelligence. GenAI wasn’t a substitute for student effort; it was a sparring partner that helped refine judgment, creativity, and scholarly voice. And because the exercises were tailored to each student’s needs, the course made graduate study feel more personal, rigorous, and meaningful. For me, that was the lasting lesson: GenAI can augment the deepest purposes of graduate education—mastery, integrity, curiosity, and lifelong learning—if we design with those values in mind.

## CHAPTER 2. THE AMAZING PACE

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GenAI is poised to reshape graduate education and research dramatically in the next few years—far beyond what many educators have imagined. There are two reasons. First, GenAI capabilities for helping us learn and carry out research are approaching the superhuman. Second, widespread adoption of GenAI will come rapidly, perhaps disruptively. The results for firms, governments, and (closer to home for our purposes) universities will be momentous.

### Two Scenarios

A senior professor recently likened GenAI’s arrival to “the asteroid that killed the dinosaurs” for the current educational system—a hyperbolic way to say that those who do not adapt could face extinction. Universities, venerable and slow-moving as they are, might suddenly find their value proposition questioned. Why pay hefty tuition for knowledge that a free (or cheap) GenAI can provide? If top researchers are all using AI to generate new studies, does the prestige of large research faculties diminish, or do we measure universities by how well their human+AI teams perform?

Here are two admittedly extreme scenarios to help us contemplate the potential disruptions.

#### *Scenario One: The Great University Collapse (2030)*

It’s 2030. Five years ago, it was unthinkable that so many well-established universities could fade dramatically. But it happened, and it happened quickly.

Employers discovered that GenAI tools could evaluate candidates far more efficiently and accurately than degrees ever did. An employer no longer needed to see a diploma; instead, they administered rapid, GenAI-driven competency assessments, verifying skills and knowledge instantly, customized precisely to job requirements. Suddenly, a Stanford degree or a Harvard MBA, once an indispensable marker of competence, seemed quaint, inefficient, even unreliable.

Students quickly caught on. Why spend tens of thousands of dollars a year when GenAI platforms could help them gain and certify their competence at a fraction of the cost, in a fraction of the time? Some prestigious universities held out, but for a vast middle tier, enrollments shrank sharply, and budgets collapsed.

Meanwhile, inside the university walls, professors discovered that powerful GenAI tools had begun to replace not only teaching assistants but faculty themselves. Students, even at elite schools, preferred tailored GenAI instruction for its speed, precision, and adaptability. Professors faced declining enrollments and canceled classes. Libraries and physical infrastructure—costly and increasingly underutilized—began to shutter. Campus social life became increasingly irrelevant, replaced by GenAI-curated virtual socialization and matching platforms.

University presidents, donors, and trustees watched helplessly as higher education entered a spiral that they were too late to reverse. Institutions closed by the dozens—first small liberal arts colleges, then state universities, and even major research universities, unable to justify their hefty price tags and unable to adapt quickly enough.

By 2030, only select institutions remained—prestigious brands able to market social status and cultural cachet. But elsewhere, the old university system had largely unraveled, rapidly replaced by streamlined GenAI-driven assessment and online instruction platforms that delivered tailored knowledge and credentials at scale, quickly and cheaply.

### *Scenario Two: The Flourishing Co-Intelligent University (2030)*

It's 2030, and the idea of a “university” is now radically different, vibrant, and thriving in ways few expected five years ago. At first, GenAI's explosion into education seemed disruptive—even threatening. But visionary universities realized it was an unprecedented opportunity, and they moved swiftly.

These flourishing institutions shifted from offering static credentials toward providing dynamic, personalized intellectual communities. Rather than trying to ban GenAI, professors and students embraced co-intelligence—partnering deeply with GenAI tools to amplify their learning and thinking. Classrooms became workshops, where professors, students, and GenAI explored complex problems together. Transdisciplinary work grew. Some seminars became hubs of multi-disciplinary problem-solving, with professors acting as guides, mentors, and facilitators of great conversations that matter.

University libraries evolved dramatically. Their physical collections shrank, but their roles expanded. Libraries became places and portals. Places for collaboration, creativity, and focused human interaction. Portals to digital tools that managed knowledge storage and retrieval. Librarians reimaged themselves as expert guides, helping students and faculty frame better questions, access the right resources, and evaluate and use powerful GenAI tools thoughtfully.

Meanwhile, social life blossomed. Although GenAI offered some compelling alternatives for online interaction, universities became centers for authentic human connection—deep conversations, mentorship, intergenerational exchanges, artistic performances, and innovation labs. Because routine instruction and credentialing were increasingly handled by GenAI-driven platforms, professors could more time mentoring students one-on-one and facilitating rich group interactions, helping students become connoisseurs of knowledge and masters of collaboration.

As a result, employers valued university graduates even more. New graduates were fully conversant with GenAI as a partner and teammate. And the graduates had developed indispensable skills and competences: judgment, creativity, ethical clarity, and sophisticated collaborative skills developed through sustained, carefully guided practice. Students who thrived at these universities knew how to ask better questions, how to collaborate with GenAI in nuanced ways, and how to form and lead teams capable of sophisticated innovation.

In this scenario, a vibrant, flourishing ecosystem emerged. The university became a uniquely humanizing institution precisely because it accepted and embraced GenAI's capabilities. AI didn't replace the university, it transformed it. GenAI enabled faculty and students to perfect their humanity and advance human knowledge.

These are extreme scenarios, of course. In 2030 we may see universities that thrive in some programs and falter in others; campuses where mentoring, studios, and rites draw people in even as routine instruction moves online; budgets tightened in one school while a new low-residency credential overflows next door.

As we shall see, the question is not collapse or flourish in the abstract; it is where, for whom, and under what designs—and how quickly leaders learn from the signals.

## Astonishing Progress in GenAI Performance

In spring 2023, ChatGPT surprised most of the world by passing the Uniform Bar Exam and several medical licensing exams. Since then, GenAI platforms have reached and even surpassed human-level scores on many high-end exams that typically require years of human training. On July 19, 2025, OpenAI announced that an experimental reasoning model had achieved “a longstanding grand challenge in AI: gold medal-level performance on the world's most prestigious math competition—the International Math Olympiad.” Google's Gemini did the same in August. GenAI has begun to match expert humans on some of our most challenging tests.

But GenAI is not just about passing tests. GenAI can provide simulations that develop professional skills, such as classroom management or psychological counseling or carrying out interviews with people from different backgrounds. It can improve your written and oral communication skills. It can be your career counselor—yes, as we’ll see, there’s a prompt for that.

Speaking personally, I’ve been amazed how GenAI can transform the way we learn. I’ve witnessed GenAI tools be effective tutors and coaches for advanced PhD students as well as students in a continuation high school.

GenAI can help make advanced tools more accessible and attractive. In 2024, I opened up my graduate course “Cost-Benefit Analysis” to students without the customary microeconomic prerequisites. This experiment worked beautifully because ChatGPT could tutor diverse students at their levels of preparation and nurture their individual interests. ChatGPT has helped me tailor cheat-proof exams that test both mastery of the subject and adeptness at partnering with GenAI tools. In another CGU course called “Working Across Cultures,” ChatGPT was the students’ personalized coach in negotiation skills.

It’s also been my pleasure and privilege to work with government leaders and managers around the world about the uses of GenAI. I’ve witnessed GenAI tools helping them unpack complex policy issues and work even better collaboratively.

## Transforming Research

In the world of research, experts collaborating with GenAI are achieving once-unimaginable breakthroughs. From solving intricate protein structures and inventing new antibiotics, to designing advanced rockets and medical technology, these partnerships are reshaping entire fields. In fact, one such collaborations earned researchers the Nobel Prize in chemistry in 2024.

The most highly publicized GenAI breakthroughs have been in science and engineering. But GenAI is also enhancing research in fields represented at Claremont Graduate University. Box 2.1 gives a few recent examples.

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### Box 2.1. Examples of GenAI in Research

**Religious studies.** Mark Spoelstra and colleagues used GenAI to generate thematic summaries and comparative analysis across a vast corpus of 19th- and 20th-century

religious texts. By prompting the AI to extract key motifs—such as apocalypse, divine justice, and spiritual healing—they were able to rapidly identify patterns and intertextual connections far beyond what manual coding would allow. These AI-generated insights guided subsequent expert close-reading, leading to the discovery of previously unnoticed narrative evolution across traditions—an advance credited directly to the use of GenAI in the research workflow.<sup>4</sup>

**Economics.** Anton Korinek offers economists a “recipe book” for deploying GenAI to supercharge research. Economic researchers reported significant productivity gains including faster ideation cycles, streamlined coding and analysis, and dramatic reductions in time spent on micro-tasks.<sup>5</sup>

**Literary Scholarship.** Katherine Elkins and collaborators showed how AI can detect shifts in mood and tone across narrative structures—offering a refined, quantitative lens on literary classics and authorial style evolution.<sup>6</sup>

**Mathematics.** In May 2025, 30 elite mathematicians tested ChatGPT o4-mini with freshly minted, high-tier problems—a suite of questions not present in its training data. The AI stunned the audience by cracking roughly 20 percent of the Tier 4 conjectures—problems so intricate they might require teams of researchers months to resolve. One observer described its performance as “frightening,” while another admitted the group felt “awed.”<sup>7</sup>

**Public health.** A breakthrough study in *Nature Communications* (June 2025) demonstrated the potential of GenAI to rapidly turn unstructured audio into actionable epidemiological signals, with clear implications for real-world surveillance during early pandemic phases.<sup>8</sup>

**Education.** Hatice Gürdil and colleagues used GenAI to evaluate the content validity of English test items. GenAI evaluators produced results that were indistinguishable from

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<sup>4</sup> Spoelstra, Mark, Lucia Grivas, and Sanaei Drost. “Echoes of the Divine: Generative AI-Assisted Thematic Analysis in Modern Religious Narratives.” *Religion* 55, no. 2 (2025): 207–228. <https://doi.org/10.1080/0048721X.2025.2506893>

<sup>5</sup> Korinek, Anton. “Generative AI for Economic Research: LLMs Learn to Collaborate and Reason.” NBER Working Paper 33198, November 2024; revised March 2025.

<sup>6</sup> Elkins, Katherine et al. “A(I) University in Ruins: What Remains in a World with Large Language Models?” in *Proceedings of the Modern Language Association*, January 2025.

<sup>7</sup> “Can ChatGPT Win a Fields Medal?” *Financial Times*, June 11, 2025.

<sup>8</sup> Anibal, J., Landa, A., Nguyen, H. et al. “Generative AI and unstructured audio data for precision public health.” *npj Health Syst.* 2, 19 (2025). <https://doi.org/10.1038/s44401-025-00022-7>

human reviewers—showing GenAI can reliably ease human workload and speed validation without compromising quality.<sup>9</sup>

**Psychology.** A team led by Song Tong used AI to mine over 43,000 psychology studies to create 130 novel hypotheses about well-being. The AI-assisted approach discovered hypotheses whose quality was independently judged to match or exceed expert-generated ones—demonstrating GenAI’s value as a hypothesis-making partner in psychological research.<sup>10</sup>

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Speaking of research, earlier this year ChatGPT’s Deep Research and I co-authored a book. Wait, *co-authored*? Well, Deep Research did so much of the work. As the title page says, “By OpenAI Deep Research in cahoots with Robert Klitgaard.” Kindle books insisted on listing me as first author; Deep Research told me it didn’t mind, and thankfully I haven’t seen any retaliatory hallucinations from it.<sup>11</sup>

The chapters of that book describe thirteen areas of life where GenAI is already making a transformative difference. Box 2.2 shows the Table of Contents. In each case, the GenAI difference came from working “in cahoots with” human beings. That’s why the book’s title is *Co-Intelligence Applied*.

And in each area, even greater gains in productivity and creativity are in the offing, as GenAI advances and we team up with it.

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<sup>9</sup> Gürdil, Hatice ,Ozlem Anadol, and Yesim Beril Soguksu, “The Use of Artificial Intelligence Tools in Assessing Content Validity: A Comparative Study with Human Experts” *arXiv*, 3 Feb 2025 <https://doi.org/10.48550/arXiv.2503.15525>

<sup>10</sup> Tong, Song *et al.* “Automating psychological hypothesis generation with AI: when large language models meet causal graph.” *Humanities and Social Sciences Communications* **11**, 896 (2024). <https://doi.org/10.1057/s41599-024-03407-5>

<sup>11</sup> Klitgaard, Robert, and OpenAI’s Deep Research. *Co-Intelligence Applied: Thirteen Examples of How Generative AI Is Changing Our World—And Ourselves*. Amazon Kindle KDP Books, 2025. <https://www.amazon.com/Co-Intelligence-Applied-Generative-Transforming-World-ebook/dp/B0F7N3HW9N> Free download and more at <https://robertklitgaard.com/co-intelligence-applied-1>

## Box 2.2 The Chapters in Co-Intelligence Applied

1. Generative AI in Adolescent Mental Health Care, 11
2. Generative AI in the Creative Industries: A Five-Year Outlook, 28
3. Cybersecurity in the Age of Generative AI, 57
4. Generative AI and the Future of Sustainable Tourism, 123
5. Generative AI and the Next Era of Management Consulting, 151
6. How Generative AI Is Revolutionizing Healthcare: The Future of AI-Powered Second Opinions, 209
7. Generative AI in Christian Ministry: Present Innovations and Future Potential, 276
8. Integrating Generative AI into the New Model Institute for Technology and Engineering: Personalized Learning, Creativity, and Career Empowerment, 302
9. Generative AI and the Future of Anti-Corruption in Developing Countries (2025–2030), 353
10. Generative AI in Sports Medicine and Athletic Training: Transforming Injury Prevention, Rehabilitation, and Performance, 386
11. Generative AI in K-8 Education: Transformations, Opportunities, and Challenges, 410
12. Generative AI, Democracy, and Civic Engagement—Opportunities, Risks, and Implementation Strategies, 439
13. Philosophy and Artificial Intelligence: Current and Future Connections, 480

### GenAI as a Fast Idea

The game has changed, and faster than anyone expected.

Atul Gawande draws a distinction between innovations that spread rapidly and those that languish for decades despite their profound value.<sup>12</sup> Anesthesia was a fast idea. It caught on almost instantly—because its effects were dramatic, immediate, and intuitive. It spread around the world in just a few years.

But antisepsis, which eventually saved so many lives, was a slow idea. It took decades to catch on. It required costly changes in behavior, its results were not immediately apparent,

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<sup>12</sup> Gawande, Atul. “Slow Ideas.” *The New Yorker*, July 29, 2013.

and it involved trust in a specialized theory of unseen germs that seemed alien to ordinary doctors.

Gawande’s insight is that some of the most transformative ideas in history don’t spread through logic or evidence alone—they spread when they feel easy, rewarding, and socially validated.

Generative AI might have followed the path of a slow idea. For decades, artificial intelligence was the domain of experts—coded in obscure languages, trained on complex models, and applied behind the scenes. But something shifted with the emergence of large language models in natural language interfaces. Suddenly, instead of lines of code, we had conversations. Instead of abstract algorithms, we had visible, immediate results: a rewritten memo, a clarified argument, a business plan in minutes.

GenAI is a fast idea. That’s why we’re nearing a tipping point. A couple of years ago, tools like ChatGPT were curiosities; now they’re upending academic norms across the world. The benefits (and temptations) are so tangible that students and faculty are experimenting with GenAI before we’ve worked out the rules. In academia, we’re used to change coming at a cautious, peer-reviewed pace. This is something different—something much more abrupt.

And it’s accelerating.

### *Performance*

Both benchmark performance and adoption levels are poised to continue their rapid rise. With models now exceeding 85 percent on MMLU and other current benchmarks, researchers expect these tasks will be effectively solved by future models (approaching 95–100 percent accuracy). Over the next two to three years, experts expect state-of-the-art models to conquer most standard academic and coding benchmarks, reaching performance that leaves little room for further improvement on those metrics. See Figure 2.1.

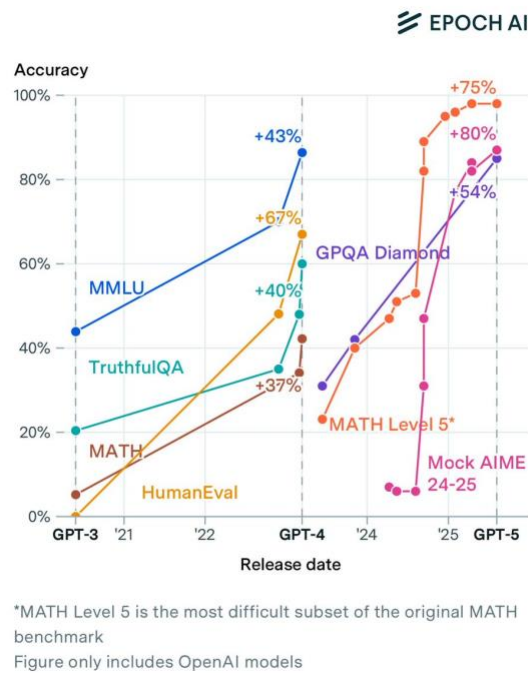


Figure 2.1. Trends in Performance on Academic and Coding Benchmarks

Source: <https://epoch.ai>

Another dimension is efficiency: models are getting not only better but smaller and cheaper (see Figure 2.2). By 2024 a 3.8B-parameter model (Phi-3) matched the MMLU performance of a 540B model from 2022, a 142-fold efficiency gain in two years.<sup>13</sup> Continued improvements in model design (e.g. optimization, fine-tuning, retrieval-augmentation) are yielding strong performance with fewer resources. This will democratize access and allow wider deployment (including on-device AI). In summary, by 2026 the frontier models will be more capable, more multimodal, and more aligned.

<sup>13</sup> Stanford Institute for Human-Centered Artificial Intelligence, *2025 AI Index Report*, April 7, 2025. <https://hai.stanford.edu/ai-index/2025-ai-index-report>

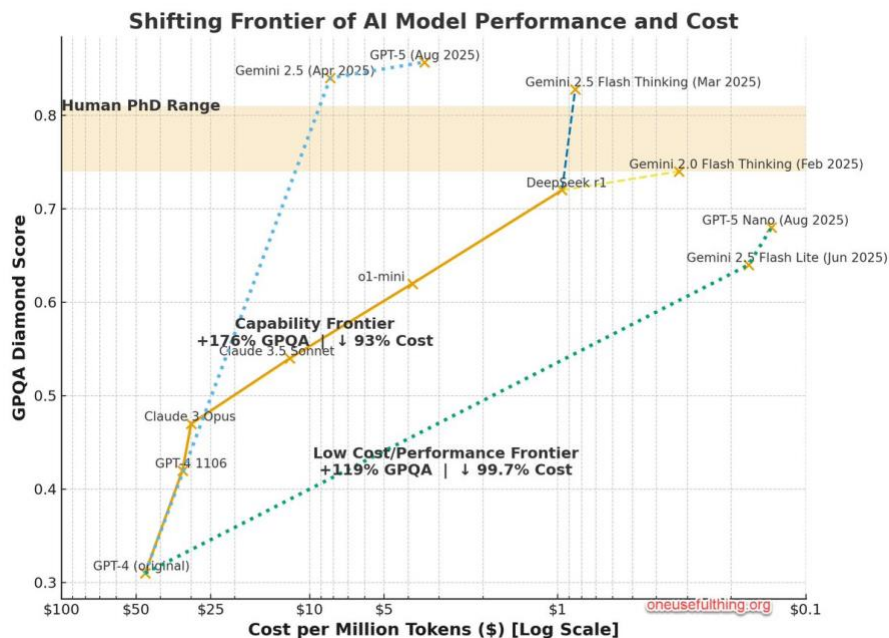


Figure 2.2. GenAI Models Are Getting More Efficient, Too

Source: Ethan Mollick. <https://oneusefulthing.org>

## Adoption

On the adoption side, all signals point to ever deeper integration of GenAI into society. In business, adoption is trending toward ubiquity: surveys show over 90 percent of companies are either using or planning to use AI in the near future. By 2027, GenAI will be a standard tool in the workplace—as common as spreadsheets or email. Forecasts suggest that virtually every large company will deploy AI assistants for functions from drafting documents and writing code to customer support and data analysis. This could drive significant productivity gains: GenAI could add trillions of dollars of value just from sectors like software, customer service, marketing, and R&D.

In education, many universities are beginning to integrate GenAI tutoring and co-writing tools into curricula, and we may see GenAI literacy become a core learning outcome. Given that 86 percent of students already use these tools informally, many institutions are moving toward guidelines to harness GenAI constructively rather than ban it.

## What AI Leaders Say

Leading AI researchers and entrepreneurs, such as OpenAI's Sam Altman, Anthropic's Dario Amodei, Google DeepMind's Demis Hassabis, and xAI's Elon Musk, are remarkably

aligned in their predictions: *superintelligent AI is imminent*, perhaps within five years, and it will transform virtually every intellectual domain.

Sam Altman recently declared, “Humanity is close to building digital superintelligence. The takeoff has started.” Elon Musk similarly predicts AI will be “smarter than the smartest human” by 2026. Anthropic CEO Dario Amodei goes further, suggesting that within a few years GenAI systems will surpass humans in almost every economically valuable task, eventually including robotics. These are not distant speculations—they reflect a startling consensus among industry leaders that we are rapidly approaching capabilities once thought decades away.

What exactly does “superintelligence” mean? While definitions vary, experts agree we’re talking about AI systems that can independently perform complex cognitive work—like generating original insights, formulating research questions, writing significant portions of computer code, or autonomously carrying out tasks across disciplines. By 2026, GenAI agents could routinely handle tasks now performed by human knowledge workers. By 2027, they might discover new insights without direct human prompting, and we could see physical AI-powered robots performing real-world tasks with human-level dexterity.

Eric Schmidt, former CEO of Google, warns that the next few years will be even more astonishing and disruptive than the past decade. He foresees “text-to-action” GenAI—where a simple request, like launching a global digital service, will be executed instantly by GenAI, bypassing human intermediaries. This could reshape entire industries overnight.

GenAI has progressed from an experimental technology to a transformative general-purpose tool in a remarkably short period. Benchmark performance has skyrocketed, and real-world usage has grown from niche trials to mainstream deployment across industries, universities, and daily life. The next two to three years will see models that are even more powerful and reliable, and adoption that is even more pervasive—fundamentally altering workflows in business and education. Organizations and institutions that effectively leverage these tools (and managing their risks) stand to gain a substantial competitive and productivity edge. By 2028, we will likely be looking back on yet another leap forward—one in which GenAI becomes an invisible but ubiquitous partner in nearly every professional and creative endeavor.

## Graduate Education Redux

Graduate education is directly in the path of this revolution. As noted earlier, if GenAI tools can master graduate-level problem sets, pass rigorous exams, and even potentially write acceptable PhD dissertations, what will distinguish human scholars and professionals?

One compelling answer is found in co-intelligence—the powerful partnership between humans and GenAI systems, achieving outcomes beyond what either could alone. GenAI can rapidly synthesize vast literatures, identify blind spots, and propose novel research questions. But the crucial human tasks of creative insight, ethical discernment, interdisciplinary collaboration, and responsible leadership become even more vital. These are precisely the skills graduate education must now emphasize, equipping students to thrive alongside GenAI.

Historically, universities have acted as gatekeepers of advanced knowledge. But if GenAI can soon efficiently deliver personalized, world-class instruction and reliably assess students' mastery, universities risk obsolescence if they rely solely on traditional instructional methods. The “fast” nature of GenAI adoption—driven by immediate, visible benefits and ease of use—means that we stand at a tipping point. The changes leaders foresee for the next few years are not incremental—they are revolutionary. Universities, students, and professors face a stark choice: embrace GenAI's potential for co-intelligence, or risk rapid irrelevance. When a fast idea hits a slow institution, norms lag, integrity strains, and design drifts. The right response is not prohibition or panic; it is to redesign on purpose—policies, pedagogies, and assessments that assume GenAI and keep the human work at the center.

## Part II. Why It Matters

## CHAPTER 3. SUBSTITUTION AND AUGMENTATION

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A remarkable thing about GenAI in education is that it can both:

- Make fake learning easier.
- Make true learning easier.

If a student is just after grades and credentials, AI-enabled cheating can help them collect traditional metrics without true learning. Genuine mastery is foregone. That's nothing new; cheating has always had that attribute. But GenAI makes it easier.

But the new element is that the very thing that facilitates fake learning can, if used correctly, help students achieve deeper knowledge, skills, and productivity.

GenAI can substitute for learning. GenAI can augment learning. Both are true. It depends on what we do.

At the level of firms and universities as employers, there is a similar tension. GenAI can substitute for labor, and it can enhance labor. As we saw in the last chapter, some people foresee large-scale replacement of employees by GenAI—even employees in top management, even high-level experts. (Even professors.)

But GenAI can also augment labor. In *Co-Intelligence Applied*, we saw thirteen areas of life where intellectual and professional work has already become more productive when done in concert with GenAI. Labor that is AI-proficient produces more and therefore is more in demand.

For employers and employees alike, as well as graduate students and professors, it's vital to understand these dual effects. Today, most campuses are just beginning to grapple with them. Dramatic shifts in both the demand for college and the supply of educational services are on the horizon, portending either a collapse of traditional models or a flourishing reinvention.

### The Dynamics of Decline

Recall the two scenarios for universities in Chapter 2, one negative and one positive. The negative scenario has GenAI-created disruptions to both the demand and supply sides of higher education.

On the demand side, GenAI threatens a century-old pact between universities and society. Employers have long treated a college degree as a passport to good jobs—a signal

of competence and perseverance. That may change fast. Major firms from Google to IBM already hire programmers without diplomas, focusing on what candidates can do rather than what they studied or where. Soon, a hiring manager can ask GenAI system to evaluate many academic competences in real time, rapidly and precisely measuring skills once proxied by degrees. Educational credentials will lose their signaling value.

Also on the demand side, GenAI may outright replace many knowledge-worker jobs that drew students to universities in the first place. Legal assistants, entry-level coders, market analysts, junior consultants—GenAI is beginning to perform their tasks. And soon, GenAI may replace many people working in universities, hospitals, government agencies, businesses, architectural firms, even senior experts. GenAI can already draft contracts, write and debug code, churn out market research, even pass medical and legal exams in simulations. As GenAI fills more roles once reserved for college grads, enrollment could plunge. The very foundation of universities' value proposition is at risk: if employers stop needing degrees as a ticket, many students may stop coming.

While the demand side faces these disruptions, the supply side—how universities deliver education—experiences equally profound challenges. Since the Middle Ages, universities have justified their cost and existence by offering something special: expert professors, libraries of knowledge, laboratories for discovery, and vibrant campuses where young people learn together. GenAI is challenging each of these pillars. Teaching can increasingly be offloaded to GenAI tutors that never tire. Some colleges already pilot GenAI-taught courses. By 2030, a student might be able to choose a highly interactive, personalized online GenAI class over a large lecture hall. The GenAI class never fills up and adapts to each learner's pace, an impossible feat for one professor.

University administrators will eye the cost savings of GenAI, as they already do when substituting adjunct instructors for full-time professors. As GenAI becomes able to handle lectures and grading, why have so many faculty members? Indeed, we can foresee GenAI taking over first the routine teaching tasks—tutoring, answering common questions, grading problem sets—and then, as GenAI progresses, some whole courses and curricula. Professors who dismiss this as fantasy do so at their peril. GenAI is already designing cars and creating proteins and discovering drugs; soon, GenAI professors and tutors could be among us.

Aspects of campus life face substitution. Once, students needed the library and its physical books, or the lab with its expensive equipment. Now vast digital libraries sit a click away, and AI can fetch and summarize knowledge in seconds—a task that once took students and librarians days. Virtual and remote labs enabled by AI and robotics could let

students run experiments from anywhere. Meanwhile, some social and support functions of college might be replicated by technology. Consider career counseling and advising: GenAI is already being used to review and rewrite résumés, find job postings, and conduct interviews. AI can assist thousands of students at once, whereas a human career officer helps only a dozen on a good day. Students accustomed to instant, on-demand service may prefer the AI advisor that’s available at midnight over waiting two weeks for an appointment.

Even the vaunted “college experience”—the friendships, late-night debates, and chance encounters—might find competition from digital simulacra. Already, millions chat with GenAI “friends” and companions. It’s plausible (though certainly not desirable) that some students might feel content socializing in virtual AI-mediated worlds rather than a campus quad. In a darker collapse scenario, universities fail not only because their degrees mean less, but because their core functions—teaching, content access, social networking—are all supplanted by cheaper, AI-powered alternatives. The risk is real. Universities could be the “record stores” or “film cameras” of the 2030s—still around, but relics of an outdated model, unless they boldly reinvent themselves.

Thankfully, we also saw in Chapter 2 a scenario where universities embrace GenAI and thrive. In the co-intelligent university, professors and students collaborate with GenAI to foster dynamic intellectual communities. Instead of lectures dominated by rote content, classrooms become vibrant spaces of creative human-AI collaboration, tackling real-world problems and enriching discussions with personalized GenAI insights. Freed from many aspects of routine instruction, professors focus on mentorship, ethical reflection, and fostering intrinsic joy in learning. Students become fluent in partnering with GenAI, capable of thoughtful judgment and imagination that GenAI alone cannot replicate. These successful universities are able to double down on experiences GenAI can’t automate: mentorship, creativity, interdisciplinary inquiry, and community.

## Understanding the Dynamics

For universities, professors, and students to move toward the flourishing scenario, they need to anticipate how the GenAI may affect the job market, universities, and classrooms. Appendix 1 presents three economic frameworks that capture some of the mechanisms. Here is a non-technical overview.

One model examines production in firms and shows how GenAI may simultaneously replace some types of human labor and amplify the productivity and wages of others. A

parallel model captures how GenAI disrupts university education. A third model considers how professors' and students' incentives shift in response to GenAI's rapid adoption, again with both threats and opportunities.

These models provide hints about how to avoid the negative consequences and take advantage of the positive ones. They suggest where collective action problems lurk, meaning that without better understanding and enlightened policies, the natural course of the GenAI revolution may lean toward the negative. And yet, these models underline a central argument of this book: embracing co-intelligence—the productive partnership between humans and GenAI—can lead to enormous educational and professional benefits.

### *1. How GenAI Matters in the Workplace*

In workplaces, GenAI simultaneously replaces some human labor while dramatically amplifying the productivity of other, GenAI-augmented roles.

Consider GenAI as a general-purpose technology that can substitute for a wide range of cognitive tasks—from basic data entry to complex analyses—while amplifying work across skill levels when humans partner with it effectively, reshaping labor demands especially in knowledge-intensive industries. For modeling simplicity, we assume GenAI primarily displaces people whose work is not augmented by it (e.g., due to lack of GenAI literacy or integration of GenAI in the job) but increases the productivity of those people whose jobs and skills enable them to collaborate synergistically with GenAI. The details are in Appendix 1.

### *2. How GenAI Matters for Graduate Education*

In universities, GenAI simultaneously substitutes for routine teaching tasks and augments high-value educational interactions.

Think of higher education as generating two key educational outputs—human capital (where students build genuine skills that boost their real-world productivity) and signals (such degrees or grades that serve as rough “signals” of a graduate’s job-ready abilities).

- **Human Capital:** As in the first model for firms, GenAI can either replace or amplify the instructional roles of professors and teaching assistants. For instance, it might automate routine tasks like basic tutoring or grading problem sets, freeing up educators for higher-value work. At the same time, GenAI may act as a multiplier when professors collaborate with GenAI to deliver more personalized, effective mentoring at lower cost, ultimately helping students learn faster and deeper.

- **Signals:** As noted, GenAI makes it easier to cheat on traditional assessments, which undermines the reliability of grades and credentials as signals of true competence. But GenAI may also empower employers to assess skills directly and affordably (e.g., through GenAI-simulated interviews or task-based evaluations), reducing their reliance on educational credentials. This erodes the signaling value of a degree, shifting job market demand toward graduates who can demonstrate GenAI-augmented abilities rather than just holding a diploma.

To model these effects, we can treat teaching inputs much like labor in a firm-level production function. For substitution, we embed a constant-elasticity-of-substitution (CES) block to reflect how GenAI can partially (but not perfectly) swap in for routine professorial or TA tasks—capturing the idea that some human elements, like nuanced judgment, remain hard to automate. In the limit, though, as GenAI gets better and easier to use, one can imagine that it will replace some professors and TAs. But just as in the firm model, GenAI can also augment the productivity and therefore the employability of professors and TAs. For complementarity, we add a multiplicative term that captures co-intelligence, boosting overall educational output when GenAI enhances skilled instruction (e.g., professors leveraging GenAI for tailored lesson plans). Finally, we incorporate two key parameters: one that lifts human capital as students gain GenAI literacy (turning GenAI fluency into a core skill that accelerates learning), and another that diminishes signaling value as GenAI lowers employer assessment costs—putting pressure on outdated rote evaluations like exams, term papers, and problem sets, and favoring more dynamic, GenAI-integrated measures of mastery.

### *3. How GenAI Matters for the Choices of Students and Professors*

In classrooms, GenAI reshapes incentives—students can either easily cheat or invest authentically in co-intelligence; professors face parallel choices between traditional assessments and GenAI-integrated teaching.

For students, GenAI offers two temptations that pull in opposite directions. On the one hand, outsourcing coursework to the model yields higher grades at lower effort. A high cheating equilibrium can ensue, which erodes true learning and devalues the educational credential itself. On the other hand, investing time in GenAI skills raises long-run wages because labor-market demand now tilts toward workers who can team with GenAI. We model an intrinsic motivation as well. Here GenAI (and inspiring professors) kindle a student’s intrinsic joy of learning and mastery: the satisfaction term in the utility function rises with genuine learning but falls to zero when the work is mere copy-paste.

Professors face a parallel fork. Sticking with traditional take-home problem sets and essay exams keeps grading convenient but silently encourages the cheating equilibrium and accelerates credential decay. Redesigning courses—introducing in-person or traceable AI-embedded tasks and learning GenAI-enhanced teaching methods—curbs misuse and channels student effort into high-value skills, yet it imposes front-loaded costs and requires collective buy-in. Crucially, faculty who adopt GenAI for mentoring raise their own output and boost students’ intrinsic motivation—aligning instrumental rewards with academic ideals.

Our simple classroom model reveals a tipping phenomenon. Without redesign, the system tips toward maximum cheating and minimal human-capital growth. But with shifts in assessment and faculty co-intelligence training, the equilibrium can tip the other way—cheating falls, GenAI-literacy investment rises, credentials regain meaning, and students’ intrinsic satisfaction grows because the work feels authentic and future-relevant.

## Qualitative Implications of the Models

The intuitive economic frameworks above yield clear qualitative insights about how universities, students, and professors can effectively navigate the GenAI revolution:

### *1. Labor markets will reward GenAI competence.*

Jobs increasingly demand GenAI skills. GenAI-competent graduates will enjoy better salaries.

### *2. Students, universities, and employers will move from credentials to human capital.*

Students’ return-on-investment will depend less on the parchment and more on demonstrable GenAI-enabled competence. Higher GenAI competence and stronger co-intelligence effects raise students’ real learning, compensating for a decline in the traditional signaling power of academic credentials.

### *3. Successful graduate programs will change both how they teach and how they assess.*

Graduate programs that emphasize GenAI-augmented learning, research, writing, and collaboration will retain credibility. Conversely, those relying heavily on traditional exams and term papers will see their credentials lose value.

#### *4. Faculty roles will evolve rapidly.*

Many teaching tasks will be replaced by GenAI. Professorial roles will shift from content delivery to mentoring, ethical guidance, project-based assessment, creative partnerships, and co-intelligence with GenAI. As in the first finding above, professors with GenAI competence will add greater value to their students and will be in demand.

#### *5. Without deliberate redesign, cheating can become dominant.*

Because traditional assessments are susceptible to cheating using GenAI, a single student who uses GenAI to outsource their coursework gains higher grades at lower effort. With negligible detection risk, rational students follow suit. Aggregate results: inflated grades, collapsed human-capital growth, and credential devaluation.

#### *6. Traceable or in-person assessments curb cheating but aren't enough alone.*

Moderate oral exams, project logs, or in-class assessments deter cheating, preserving credibility for academic credentials like grades. Yet discouraging or excluding GenAI use causes students to underinvest in co-intelligence skills. Optimal assessments embed GenAI transparently—such as requiring submission of GenAI conversations alongside assignments. As a result, students invest effort in both mastery and co-intelligence.

#### *7. Faculty members face a collective-action challenge.*

Individual professors may perceive the cost of course redesign and the cost of integrating GenAI into teaching as high, while the reputational and institutional benefits from professors doing so materialize only if many professors adopt. Thus, coordinated university-level incentives—training stipends, teaching-load adjustments, and shared assessment templates—can tip faculty equilibrium toward widespread adoption.

#### *8. Intrinsic motivation and scholarly values can flip the equilibrium toward authentic learning.*

The arrival of GenAI invites reflection upon deeper questions regarding the fundamental purposes of graduate education—to produce skilled scientists, learned scholars, and effective professionals. Professors who integrate GenAI thoughtfully into their teaching can rekindle students' intrinsic motivations by modeling and inspiring joyful exploration, critical curiosity, and intellectual rigor—values central to the academic enterprise. Faculty exemplifying co-intelligence can reconnect students to the timeless missions of universities: the pursuit of truth, beauty, virtue, and joy. This reconnection simultaneously

enhances authentic learning, fosters intellectual growth, and safeguards academic integrity.

## A Hopeful Vision

The models and their lessons suggest how universities, professors, and students may be able to avoid dramatic decline during the GenAI revolution.

As we saw in the positive scenario at the beginning of Chapter 2, forward-thinking universities seize GenAI as a partner. They redesign themselves as co-intelligent universities, where human creativity and GenAI capabilities merge to elevate learning and discovery. Instead of fighting AI or using it only to cut costs, these institutions weave GenAI into their very fabric in pursuit of deeper education.

Curricula are transformed to emphasize what humans + AI can do together. Students learn not just facts (which GenAI can supply on demand), but how to collaborate with GenAI, how to ask the right questions, how to judge AI's outputs critically, and how to leverage GenAI in creative problem-solving. Class projects can team students and AI tools to tackle real-world problems—GenAI suggests diverse perspectives, generates alternatives, and crunches data, while the students provide vision, ethical judgment, and context. Programs that adopt AI-trace + oral defenses see cheating incidents and grade inflation fall. In majors with early co-intelligence integration, time-to-mastery shrinks; alumni re-enrollment in stackable credentials grows.

In the flourishing scenario of “co-intelligent universities,” professors become less like talking heads and more like mentors, coaches, and curators of learning. With GenAI handling much of the routine content delivery, faculty members can focus on inspiring students, guiding discussions, and modeling critical thinking and ethical reflection.

This human-GenAI teamwork can yield vibrant intellectual communities: students and faculty tackling big interdisciplinary questions (climate change, inequality, biotechnology ethics) in collaboration with GenAI. Such universities will foster something GenAI alone cannot: wisdom, context, and human connection. Students graduate having practiced *co-intelligence*—knowing how to harness AI's power while exercising uniquely human judgment and imagination.

Crucially, these reinvented institutions can create rich environments for mentorship, peer learning, and community engagement. Rather than a GenAI tutor in isolation, the student can experience GenAI as a supportive tool *within* a broader community of inquiry. In this happy vision, GenAI will free humans to do what we love most and do best.

On that cheery note, let's turn to what it is we would like to renew. If the economics of GenAI is destabilizing for many of the ways universities now work, we have to ask some basic questions. Why *do* we work that way? What are the purposes of a graduate education? What is high-quality research? What is a community of scholars? These questions—long important, now urgent—are what we take up next.

## CHAPTER 4. RECALLING OUR CALLINGS

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The economic models of the last chapter highlighted a crucial reason graduate students pursue their degrees: good jobs. Students' "derived demand" for education comes from labor markets seeking the knowledge and skills their education provides—the production of what economists (perhaps awkwardly) call "human capital."

But graduate education has other powerful attractions. People pursue advanced degrees not only because it pays economically but because it fulfills them personally, allows them to contribute meaningfully to the world, and aligns with their deepest values. Their studies embody what Plato celebrated as "true, beautiful, and good" and what Matthew Arnold described as "sweetness and light."

In this chapter, we delve into those intrinsic motives, exploring philosophical, psychological, and communal perspectives. We examine what learned societies and professional associations say about why graduate education matters beyond employability. What deeper qualities should graduate schools cultivate in their students? What intrinsic reasons might inspire you to embrace a particular profession or academic career?

These reflections prepare us to revisit, in our final chapter, the core themes of this book—this time directly engaging the implications of the GenAI revolution. How might GenAI not only equip graduate students with marketable skills but also nurture their highest callings? Can GenAI help us rediscover and enrich the intrinsic and communal purposes of our disciplines and professions?

### What Matters to You for Its Own Sake?

In 1927 the philosopher Moritz Schlick wrote a short paper on a big topic. Its title translates as "On the Meaning of Life."

Schlick argued persuasively that a meaningful life goes beyond *pleasures* and *goal-directed accomplishments*. Instead, you should focus on things that, to you, matter for their own sake, that is intrinsically.

“We must seek for *activities* which carry their own purpose and value within them, independently of any extraneous goals; activities, therefore, which are not work, in the philosophical sense of the word.”<sup>14</sup>

Because philosophers seem so dour, it may surprise you how Schlick characterized these things: not *work*, but *play*. “Play, as we see it, is any activity which takes place entirely for its own sake, independently of its effects and consequences. There is nothing to stop these effects from being of a useful or valuable kind. If they are, so much the better; the action still remains play, since it already bears its own value within itself.”<sup>15</sup>

The richest blessings flow from the work that is engendered as the child of its creator’s happy mood, and in free play, without any anxious concern for its effects . . . The tilling of the fields, the weaving of fabrics, the cobbling of shoes, can all become play, and may take on the character of artistic acts. Nor is it even so uncommon for a man to take so much pleasure in such activities, that he forgets the purpose of them. Every true craftsman can experience in his own case this transformation of the means into an end-in-itself, which can take place with almost any activity, and which makes the product into a work of art. It is the joy in sheer creation, the dedication to the activity, the absorption in the movement, which transforms work into play.<sup>16</sup>

Note the humble examples here. The psychologists Bryan J. Dik and Ryan Duffy show how “almost any kind of occupation can offer any one of us a sense of calling. Regardless of where we are in our careers, we can all find joy and meaning in the work we do, from the construction zone flagger who keeps his crew safe to the corporate executive who believes that her company’s products will change the world.”<sup>17</sup>

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<sup>14</sup> Schlick, Moritz. “On the Meaning of Life.” In Moritz Schlick, *Philosophical Papers, Volume 2 (1925–1936)*, edited by Henk L. Mulder and Barbara F.B. van de Velde-Schlick. Translated by Peter Heath, 112–129. Dordrecht: Reidel, 1979. First published 1927, p. 116.

<sup>15</sup> Schlick, “Meaning of Life,” pp. 115–6.

<sup>16</sup> Schlick, “Meaning of Life,” p. 117.

<sup>17</sup> Dik, Bryan J., and Ryan Duffy. *Make Your Job a Calling: How the Psychology of Vocation Can Change Your Life at Work*. West Conshohocken, PA: Templeton Press, 2012, cover. A related idea is *flow*, defined as “a state in which people are so involved in an activity that nothing else seems to matter; the experience is so enjoyable that people will continue to do it even at great cost, for the sheer sake of doing it.” Csikszentmihalyi, Mihaly. *Flow: The Psychology of Optimal Experience*. New York: HarperCollins, 2008. First published 1990, p. 4.

## The Idea of a Calling

To get the gist of what a calling might be for you, consider the psychologist Abraham H. Maslow's studies of "self-actualizing people," his term for the "more matured, more fully human" among us. Their basic needs of belongingness, affection, respect, and self-esteem are gratified." They are spontaneous, natural, "more easily themselves than other people."

What characterized these people?

Self-actualizing people are, without one single exception, involved in something outside of themselves. They are devoted, working at something, something which is very precious to them—some calling or vocation in the old sense, the priestly sense. They are working at something which fate has called them to and which they work hard at and which they love, so that the work-joy dichotomy in them disappears.<sup>18</sup>

What does it mean to have a calling? "The best way to communicate these feelings to someone who doesn't intuitively, directly understand them is to use as a model 'falling in love.' This is clearly different from doing one's duty, or doing what is sensible and logical."<sup>19</sup>

The Claremont Graduate University psychologists Jeanne Nakamura and the late Mihaly Csikszentmihalyi interviewed hundreds of successful painters, dancers, poets, novelists, physicists, biologists, and psychologists—all people who seemed to have crafted lives for themselves built around a consuming passion. Theirs were admirable lives, the sort that many people dream of having.

These people shared what the authors called "vital engagement." They had in common a "completeness of involvement or participation and marked by intensity. There is a strong felt connection between self and object; a writer is 'swept away' by a project, a scientist is 'mesmerized by the stars.' The relationship has subjective meaning; work is a 'calling.'"<sup>20</sup>

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<sup>18</sup> Maslow, Abraham H. *The Farther Reaches of Human Nature*. New York: Viking, 1971, p. 43

<sup>19</sup> Maslow, *Farther Reaches*, 301.

<sup>20</sup> Nakamura, Jeanne, and Mihaly Csikszentmihalyi. "The Construction of Meaning Through Vital Engagement." In *Flourishing: Positive Psychology and the Life Well-Lived*, edited by Corey L.M. Keyes and Jonathan Haidt, 83–104. Washington, DC: American Psychological Association, 2003, p. 86.

Table 4.1: Three Views on Calling

Scholar(s)	Core Idea about Calling	Key Emphasis	Relation to Graduate Education and Professional Life
<b>Moritz Schlick</b>	Intrinsic meaning found in activities valued for their own sake (“play”)	Intrinsic satisfaction; joy in creation; meaningfulness beyond external rewards	Encourages seeing scholarly work as intrinsically meaningful, creative, and joyful
<b>Abraham Maslow</b>	Self-actualization through passionate engagement with something beyond oneself (“like falling in love”)	Deep personal fulfillment; transcending work-joy dichotomy through devotion	Highlights scholarly pursuit as deeply fulfilling and personally transformative
<b>Jeanne Nakamura &amp; Mihaly Csikszentmihalyi</b>	“Vital engagement”—intense involvement, marked by strong connection and personal significance	Passionate absorption; complete, meaningful participation in one’s work	Reflects graduate education as an intense, passionate journey deeply connected to one’s identity

## How Can You Find Your Calling?

Some people just seem to know their calling.

When he was an eight-year-old boy, the philosopher R.G. Collingwood came across a book of Immanuel Kant’s in his father’s library. Fascinated though confused, Collingwood felt a kind of calling.

As I began reading it, my small form wedged between the bookcase and the table, I was attacked by a strange succession of emotions. First came an intense excitement. I felt that things of the highest importance were being said about matters of the utmost urgency: things which at all costs I must understand. Then, with a wave of indignation, came the discovery that I could not understand them. Disgraceful to confess, here was a book whose words were English and whose sentences were grammatical, but whose meaning baffled me. Then, third and last, came the strangest emotion of all. I felt that the contents of this book, although I

could not understand it, were somehow my business: a matter personal to myself, or rather to some future self of my own . . . I felt as if a veil had been lifted and my destiny revealed.<sup>21</sup>

When he was only five years old, the great conductor Andris Nelsons heard Richard Wagner's *Tannhäuser*.

I was so touched by this opera, and I was crying, and I was so so emotional after that. And interestingly enough, during the performance I was watching the conductor, and I was thinking, "Oh my God, it must be such a great responsibility. If he does something wrong, everything goes wrong, and it's his fault." So I was thinking, it must be great to be involved in the music so much as the conductor. That was subconsciously my dream. Someday I would like to become a conductor, not because of being you know in front of the people but because of being involved in music all the time, you know, from the first to the last bar.<sup>22</sup>

Most of us are not so lucky. Fortunately, graduate school can be an excellent way to deepen, or even discover, our callings.

When I was a young professor at Harvard, two undergraduates stopped by my office one morning. "How can we be like you?" they asked.

After overcoming a mild start, I asked them what they meant. In essence, they wanted to know how they could get into the field of international development and combine academic research with service in poor places.

"Lots of other students would like to know, too."

I was diffident with my own story but said that if they could organize a dinner at Leverett House for all interested students, I would invite some Harvard professors from different disciplines and schools to tell how they got into international development. The two students were delighted, and soon we had that dinner.

Scores of students showed up. On the dais were me as MC and youngish professors from the law school, economics, public health, business, and sociology. Each of them was active in academia and on the ground in the developing countries. I had spoken with them in advance about the students' question—they, too, had raised their eyebrows but then

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<sup>21</sup> Collingwood, R.G. *An Autobiography*. Oxford: Oxford University Press, 1939, p. 3.

<sup>22</sup> Andris Nelsons interviewed by Harriet Gilbert, *The Strand*, BBC, July 19, 2010.  
<http://www.bbc.co.uk/programmes/p008lmss#p008y24c>

smiled—and told them, “Please just take five or ten minutes. That way, we’ll have time for Q and A.”

So, after dinner that evening in Leverett House, I introduced my colleagues, and they spoke one after the other. And something remarkable emerged. None of them, not a one, had any idea before entering graduate school that they would feel the calling of international development.

The public health professor, for example, said his fascination was kindled when he and his wife spent the summer after their second year in grad school at a clinic in the Caribbean. The economist got into it during his second year when one of his professors asked him to help with a research project on financial underdevelopment in Africa.

And so it went. Happy accidents, in the context of an excellent graduate education, had launched their delight for the subject, their confidence that “I can be good at this,” their trust that their work would make a difference in the world, and their de facto assurance that there were good jobs in this domain.

## What Learned Societies and Professional Associations Say

Another way to consider (or reconsider) our calling is to explore the ideals and goals of our profession or discipline by hearing what leaders in our field have said.

[Appendix 2](#) dives in. It provides a detailed overview of statements from learned societies and professional associations about the desired competences, values, and, yes, callings of different degrees.

There is great variety across professions and academic disciplines. But as in the case of the young professors from diverse disciplines who talked to the students at Leverett House, there are arresting commonalities.

First, let’s briefly review some of Appendix 2’s findings:

### *Humanities (PhD)*

Doctoral graduates in fields like history, literature, and philosophy master deep knowledge and sharp analytical skills. They learn to interpret complex texts and cultural issues, build sound arguments, and write clearly. Digital skills, such as using online archives, also matter—but always to deepen understanding. Curiosity, skepticism, and humility are essential. A humanities PhD produces original scholarship and shares it clearly, in academia or beyond.

### *Social Sciences (PhD)*

Fields like psychology, economics, or political science expect graduates to master their subject's key ideas and methods. They must learn how to carry out independent research, shaping new questions and rigorously answering them. Professional groups, such as the American Psychological Association (APA), list clear expectations: research design, data analysis, evidence-based methods, ethical practice, and sensitivity to different cultures. Program evaluation groups emphasize methods, ethics, practical project skills, and communication. Social science PhDs are expected to handle complexity, weigh evidence carefully, and consider social impacts thoughtfully.

### *Information Sciences (PhD)*

Graduates in information and technology fields build strong technical knowledge and aim for new discoveries. They create original ideas—like inventing algorithms or uncovering scientific findings. They also learn to teach and work well with teams. Groups like computing and information schools stress research skills, data handling, and linking theory with practice. Creativity and ethics matter deeply, especially with powerful new technology. Programs often encourage entrepreneurial thinking and the ability to work across disciplines.

### *Business and Management (PhD and MBA)*

Business PhD graduates create new knowledge, mentor students, connect theory to real-world problems, and care about the social effects of business decisions. Curiosity and a habit of lifelong learning matter greatly. MBA students, meanwhile, are prepared to lead organizations, handle challenges strategically, make ethical and data-informed decisions, and adapt to global shifts like AI advances. Accrediting bodies like AACSB outline expectations: strategy, leadership, teamwork, ethics, and global perspective. Both degrees aim to achieve practical, positive outcomes.

### *Public Health (DrPH, MPH)*

These degrees blend academic strength with real-world skills. The Association of Schools and Programs of Public Health lists key skills: data analysis, leadership, management, and policy understanding. DrPH graduates bridge research and practice—evaluating data, leading teams, managing programs, and promoting fairness and ethics. MPH graduates have practical skills: creating health programs, analyzing data, communicating effectively,

and advocating for better policies. Core values include public service, justice, and respect for cultural differences.

Across these fields, common themes emerge. Graduate education aims to build: (1) deep expertise, (2) integrity and ethical responsibility, (3) research skills, (4) collaboration skills, (5) communication skills, and (6) career flexibility and lifelong learning.

## 1. Deep Expertise

You have to know your stuff.

Graduate students are expected to demonstrate advanced knowledge in a specialized area of study, as well as a grasp of the broader theoretical and research context of their discipline. For example, a PhD in history should know not only a particular era or theme in depth but also the general contours of historical methodology and historiography. This advanced knowledge is the foundation on which further research and analysis are built.

But a successful graduate education means more than mastering methods, proving theorems, designing surveys, and passing a qualifying exam on French novels of the 19<sup>th</sup> century, valuable though those may be. It means learning how to think like an expert in your field.

In the 1930s, the Harvard Law School made a big decision. Dean Christopher Langdell and the faculty came to the conclusion that “knowing your stuff” in the law could no longer be, well, knowing the law. The vast body of case law made that impossible—even back then. Instead, the School decided to teach its students *how to think like a lawyer*. This meant thinking through the inevitably idiosyncratic cases of the past and present with a highly trained mind. One that knew key precedents and lines of progress in the law. One that understood legal arguments as both an art form and a kind of language. One that learned by examining cases in class together, debating key terms and appropriate analogies, always knowing there was not “the answer.” One that could be critical of the law and also think constructively about how to do better. Harvard Law School continues its case method pedagogy to this day—and the philosophy has been copied by law schools around the world.

That metaphor “thinking like a ...” seems to me to capture an important element of graduate education. And it is relevant to our discussion of callings.

What does it mean to think like an expert in your discipline or profession? Whether you're becoming a lawyer, an economist, an evaluator, or a literary critic, it's more profound than mastering techniques and absorbing facts.

*First, you learn to see things others don't.* Every field has its big insights, the core theories and practices that shape how its experts understand the world. An economist might instinctively see human behavior as driven by incentives and constraints, while a literary critic trained in *explication de texte* sees how what is being said interacts with how it is being said. A field's distinctive ways of seeing the world are powerful because they reveal patterns that those without the insight may overlook.

*Second, you must be learned.* Cosimo de' Medici, the great Florentine patron of the arts, is said to have remarked, "How can one paint portraits if one has not seen faces?" For scholars, this means reading widely, studying deeply, and engaging regularly in critical conversations with mentors and peers. It means really digging into great works; simply knowing their content won't give you depth, judgment, or insight.

*Finally, you must master the language of your discipline.* Lawyers must learn terms like *tort* and *liability*, economists have their *externalities* and *equilibriums*, cultural anthropologists navigate a world of *thick description* and *total social facts*. We make fun of jargon, and often rightly so. In my field of international development, there are two dictionaries that criticize the inexactness and ideological loading of key terms (even "development" itself). But despite the critiques, graduate students have to learn the lexicon.

Speaking the language of your discipline or profession isn't just about mastering a vocabulary. It's about listening as well as reading, especially the great works of your field. You follow the key theoretical concepts and their evolution, noting that they are (like all concepts that matter) always and eternally contestable. You appreciate how concepts are translated into measures, which are always partial, imperfect, and incomplete. You observe how arguments are made, defended, and defeated. You discern as a connoisseur what it means to say, "I am drawing a distinction, not a conclusion." You are able to navigate the narratives of your field and communicate clearly with peers.

In short, graduate success includes learning how to "think like a . . ." You notice what others neglect, learn by example how your field transforms evidence into insight, and command the distinctive language of your discipline.

## 2. Working with Ethics and Integrity

But deep expertise alone isn't enough. Each of the learned societies and professional associations say that graduate education must produce scholars and professionals who are honest, who critically interrogate all sources of information, who understand the social implications of their work, and who strive to mitigate bias whether it stems from a dataset, a literature sample, or an AI's training corpus. Or from their own disciplines and professions.

Academia often faces accusations of bias. It's said that in science you can choose your questions but not your answers. Yet evidence is sometimes selectively gathered or presented under the guise of objectivity—as recent replication crises in psychology, economics, and medicine demonstrate.

Among the biases prevalent in academic and professional life is precisely what we have just discussed: the habit of “thinking like” an expert in a particular field. While invaluable, this mindset can inadvertently create disciplinary silos, limiting scholars' openness to insights from other fields or experiences. This is one reason Claremont Graduate University emphasizes transdisciplinary studies—and requires all PhD students to take at least one transdisciplinary course.

A goal, therefore, should be to understand the downsides of our disciplinary and professional takes. Of our cultural positionality and our political goals. It's fine to have schools of thought, lines of argument, and strong views about the purposes of our research. But it's also wonderful to understand where and how others may disagree.

One powerful way to counteract disciplinary and cultural blind spots is by intentionally fostering interactions across fields and belief systems. A striking example comes from Claremont Graduate University.

Some years ago, Dean Karen Jo Torjesen pioneered a unique vision for the School of Religion: students should learn what it means to be inside and outside their community of faith. In what was formerly a School dedicated to the study of the Hebrew Bible and Christianity, Torjesen created advisory boards in Islam, Hinduism, Coptic Christianity, Buddhism, and Mormon Studies. New chairs were added. Doctoral students from all these faiths were recruited. The goal was not to create hybrids or affirm common denominators. Rather, by being exposed to faith communities outside our own, we would develop a deeper understanding of what we believe and what distinguishes us.

For example, students and professors could confront across the religions classic dilemmas facing each religion. How to interpret seemingly conflicting passages in sacred texts about our faith's inclusivity or exclusivity. How to define and work toward social justice. How to understand evil. In doing so, the hope is to become better scholars of each of our own religions.

These skills morph into humility, self-knowledge, and working well with others. Our practical work and our theoretical research can benefit when we examine different "takes," be they religious, political, disciplinary, or cultural. One result is integrity. We do our work and present it in ways that acknowledge our own biases and anticipate how people from different disciplines, professions, religions, and cultures might gain from or misinterpret that work. To do this, we begin by listening carefully, understanding what matters most deeply to us and to them, including hopes and fears. And what our and their biases might be.

### 3. Research and Analytical Skills

The demonstrated capability to do research is the abiding standard for the PhD degree. In leading universities, the PhD is awarded only after three referees declare that the doctoral dissertation has advanced human knowledge. The "Dublin Descriptors" of the Bologna Process in Europe put it this way: the holder of a doctoral degree should "have made an original contribution to knowledge that extends the frontiers of the field."<sup>23</sup>

An awesome and daunting idea—and one hard to define and specify. Years ago, the new editor of the *Journal of Educational Measurement* was surprised by how often the ratings of multiple referees for the same article disagreed. He did a study. The answer: the correlation among ratings was only 0.3. Dissertation committees exhibit similar disagreements. What constitutes "high-quality research" is highly contestable. And yet, every PhD program has exactly that goal and exactly the same dilemma of assessment.

The holders of masters and professional doctoral degrees don't have to meet the august research standards of the PhD. But they are expected to be sophisticated consumers of research. MBAs, for example, are supposed to carry out research about internal operations, marketing strategies, and the applications of new technologies to their organization. MPH

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<sup>23</sup> For details, see Appendix 4. *Shared 'Dublin' descriptors for Short Cycle, First Cycle, Second Cycle and Third Cycle Awards, 2004.*

[https://www.aqu.cat/doc/doc\\_24496811\\_1.pdf#:~:text=,of%20which%20merits%20national%20or](https://www.aqu.cat/doc/doc_24496811_1.pdf#:~:text=,of%20which%20merits%20national%20or)

graduates should, in the words of one accreditation group, be able to design and implement evidence-based public health projects immediately post-graduation.

## 4. Collaboration Skills

A striking shift has reshaped scholarly research. Solo researchers once dominated academia. Now, teamwork rules. Between 2000 and 2025, co-authorship soared across all fields, turning collaboration from rare to routine. Even traditionally solo fields—like history and literature—have steadily moved toward joint authorship. In economics and psychology, single-authored papers are now rare, and teams are the norm.

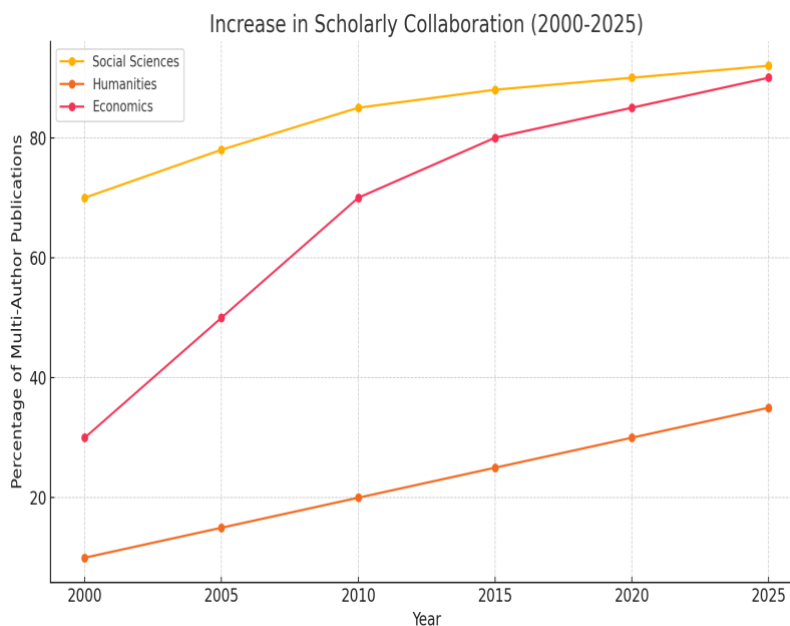


Figure 4.1: Increasing Rates of Co-authorship in Scholarly Publications across Selected Disciplines, 2000–2025.

Source: the authors.

Why has this happened? As knowledge grows, problems get tougher, requiring skills from different fields. Modern data sets and analytical tools often surpass what one person can handle alone, encouraging scholars to team up across disciplines and institutions. Technology helps: a historian in California can now easily collaborate with a statistician in Singapore and a data scientist in Denpasar. Funders often prefer teams, believing complex issues like climate change, educational disparities, or public health need multiple points of view. The result? Team research produces more papers, sparks more innovation, and gets cited more often.

This change has big implications for graduate education. Graduate schools must teach students how to work well together, communicate clearly across fields, and manage group projects. Teamwork isn't just a passing trend—it's now central to scholarship itself.

## 5. Communication Skills

Most academic and professional programs, whatever their field, claim to teach students how to communicate. But what this actually means is rarely unpacked. In fact, much of what students learn about writing—especially early on—is backward. They are taught to express themselves, to demonstrate that they've understood the material, to be “clear” and “organized.” But professional writing is not about expressing yourself. It's about changing how others think. That's what communication in scholarly work requires: not sincerity, not style, but value. Readers—who are busy, knowledgeable, and skeptical—must see, from the outset, how your writing helps them make sense of something they care about. If it doesn't, they stop reading.

So what does that mean in practice? It means opening not with your findings or your views, but with a problem the reader already sees—or soon will. A tension, a contradiction, a cost. Something in the current state of knowledge that doesn't sit right. And then, not explaining that it's important, but showing how its resolution might help the field move forward. This is hard work. It demands that you write not to express what you know, but to position your contribution in a way that matters to others. And not to “everyone,” but in academic work to a specific scholarly community, with its own language of value and its own tacit standards. Your job is to learn that code. Not to flatter the reader, but to show them—in their terms—why your work is worth reading.

The same principle applies when we move from writing to oral briefings: it's not about what you know, it's about what the audience needs. RAND's model for briefings starts with a sharp question: What do you want your listeners to do, or to think differently, as a result? The structure, then, must be top-down—not a chronology of your research steps, but a distillation of what matters most. Begin with the problem and why it matters. Then, state the main conclusion. Only afterward should you work down the “information tree,” offering evidence and logic to support your case. Each slide, like each paragraph in good writing, delivers a single chunk of meaning. The point is not to display your expertise but to create clarity and impact—quickly, respectfully, and persuasively.

Finally, professionals don't only speak to peers. They work with patients and clients, with public audiences, with partners and sometimes with opponents. They may have to explain their findings to people with little formal training, or who aren't fluent in the dominant

language. Here, the demands of communication change. Precision still matters, but so does empathy. The first task is not to translate what you know into simpler words. It's to listen—to understand what the other person cares about, fears, and hopes for. Only then can you begin to frame your message in terms that are not only understandable, but meaningful.

## 6. Career Flexibility and Lifelong Learning

Many PhD programs teach students about jobs outside of academia. It's also recognized that within disciplines people change specialties and often work across disciplines. Students are prepared for their immediate job markets and increasingly for a world where employment opportunities are multiple and varied. And for new technologies including GenAI. For example, the Association to Advance Collegiate Schools of Business calls for a “learn-to-learn expectation” so that graduates can continuously adapt to emerging technologies.

### Intrinsic Value

Note that these six goals have extrinsic value in terms of employment and productivity and the like. But they also represent intrinsic values.

Graduate education clearly emphasizes practical, extrinsic outcomes: securing rewarding employment, gaining necessary credentials, and maintaining competitiveness in rapidly evolving labor markets.

But equally important are intrinsic goals, aspects of graduate study that speak to the heart of why many choose advanced education in the first place. These intrinsic motivations include intellectual passion, a commitment to discovery and ethical responsibility, the joy of collaborative creativity, and the deep satisfaction of continuous personal and professional growth. In short, the best graduate and professional education doesn't just qualify you for jobs—it cultivates a calling, a deeper sense of meaning and purpose in your work and life.

Table 4.2 Goals of Graduate Education—Extrinsic and Intrinsic Dimensions

Common Goals	Extrinsic Motives (Instrumental)	Intrinsic Motives (Calling)
<b>1. Deep Expertise</b>	Professional competence, job qualifications, employability	Intellectual fulfillment, passion for learning, curiosity-driven depth
<b>2. Integrity and Ethical Responsibility</b>	Maintaining professional reputation, compliance with norms	Commitment to ethical principles, authenticity, moral self-awareness
<b>3. Research Skills</b>	Credentials for career advancement, employable analytic capacity	Joy of discovery, intrinsic satisfaction of advancing knowledge
<b>4. Collaboration Skills</b>	Effective teamwork for productivity and career success	Meaningful relationships, shared creativity, sense of community
<b>5. Communication Skills</b>	Influencing others, professional visibility, career advancement	Genuine connection, enriching discourse, contributing to understanding
<b>6. Career Flexibility and Lifelong Learning</b>	Adaptability for sustained career relevance, employability	Personal growth, self-realization, sustained intellectual vitality

Talcott Parsons recognized a similar truth in his classic analysis of professions.<sup>24</sup> For Parsons, professions are distinguished by their commitment to ideals and norms that transcend narrow self-interest. A professional is guided by a vocational ethos—what Parsons called “disinterestedness”—meaning their work fundamentally aims at serving society and upholding the common good. Professional institutions reinforce this ethos through codes of ethics, peer accountability, and self-regulation, fostering an intrinsic sense of responsibility and calling.

Just as professional associations nurture a vocational ethos beyond individual self-interest, graduate education cultivates intrinsic goals rooted in shared intellectual traditions.

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<sup>24</sup> Parsons, Talcott. *The Professions and Social Structure*. Englewood Cliffs, NJ: Prentice-Hall, 1939.

## The Community of Scholars

At Commencement at Claremont Graduate University, when we award the PhD we tell our graduates: “Welcome into the ancient and venerable community of scholars.”

This beautiful phrase connects our graduates to a magnificent tradition. But what does it mean to certify someone as a scholar today, when GenAI can perform many tasks we once thought uniquely human?

Traditionally, becoming a scholar meant learning from other scholars. Novices studied under masters, absorbed their wisdom, and learned to appreciate the best of what had been thought and said. In doing so, they developed connoisseurship that went beyond mere expertise. The venerable community of scholars cultivated judgment, taste, and character.

Today’s revolution in Generative AI pushes us to rethink this tradition. Could GenAI become a new kind of mentor, complementing what we receive from professors and peers? How might tools like ChatGPT help identify and contextualize *the best of what has been thought and said*? How might GenAI help novices develop discernment for what’s *true, important, and valuable*?

And help us examine and challenge different definitions of those crucial, contestable terms in italics?

It goes further: might GenAI routinely take part in scholarly conversations—offering fresh views, highlighting overlooked connections, and nudging human scholars toward new insights? Might GenAI, in some meaningful sense, become part of our ancient and venerable community of scholars? Perhaps not. But asking the question reminds us of what is at stake: judgment, context, and community, which no machine can supply on its own.

These reflections bring us back to purpose. Graduate education has never been only about employability; it has always been about cultivating mastery, integrity, discovery, collaboration, communication, and a calling within a living community of scholars. The GenAI revolution does not erase those aims—it makes them more urgent. The question is how universities can redesign themselves so that these intrinsic goods are not eclipsed but elevated. That is where we turn next: from recalling our callings to considering, in Chapter 5, how institutions can act to renew them in an age of co-intelligence.

## Part III. How to Respond

## CHAPTER 5. UNIVERSITIES TRANSFORMED

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Parts I and II mapped what’s happening and why it matters. The aims of graduate education still stand—mastery of a field, integrity, research craft, collaboration, communication, and a habit of learning for life. So does the ideal of the ancient and venerable community of scholars. Yet the GenAI revolution threatens universities as we know them. We face a stark choice with high stakes: either let GenAI crash through our old designs, or redesign on purpose to deepen and speed learning and research.

GenAI—like it or not—will let others teach faster and cheaper, and it will enable our own students learn in ways our policies don’t yet recognize. The cost of drift will be real: sliding yield, longer time-to-degree, faculty fatigue, reputational erosion. What can a university do—beginning now—to stay true to its callings and raise its value? This chapter sets out a university playbook. And then Chapter 6 drops to the studio floor with a short course that connects GenAI with the big goals of graduate education.

Box 5.1 summarizes six big moves for university leaders to discuss. Each is concrete. Each has a metaphorical “Monday 9 a.m.” and possible metrics.

### Box 5.1 — The Six Big Moves (one-page playbook)

#### *1. Redesign the curriculum for GenAI literacy and collaboration*

*Why:* Students must know what GenAI can and cannot do—and how to work with it.

*Monday 9 a.m.:* Publish campus-wide GenAI learning outcomes; launch a 1-credit foundations module; require one AI-trace assignment in every gateway course.

*Metric:* ≥80% of syllabi state GenAI rules; ≥1 assignment per course includes an AI-trace log; three cross-disciplinary challenge labs live by term’s end.

#### *2. Reframe faculty roles and incentives*

*Why:* Content delivery automates; mentoring, design, and critique do not.

*Monday 9 a.m.:* Announce updated promotion criteria that name teaching design and mentorship; launch an AI-in-Teaching Academy; fund five AI-enhanced course pilots.

*Metric:* ≥25% of gateway courses redesigned with co-intelligent elements within 12 months; ≥70% of faculty complete at least one Academy module.

### *3. Reinvent delivery and credentials*

*Why:* Flexibility and proof-of-work will beat time-served degrees.

*Monday 9 a.m.:* Approve two low-residency pilots; launch three stackable certificates tied to artifacts and live defenses; publish a "flip for critique" guide.

*Metric:*  $\geq 60\%$  of large courses run hybrid with in-person critique; certificates enroll  $\geq 150$  learners;  $\geq 80\%$  of capstones include portfolios with GenAI-trace logs and a live defense.

### *4. Reinforce the human elements of community*

*Why:* Our human core—our institution's "moat"—is mentorship, studios, convenings, and rites.

*Monday 9 a.m.:* Assign every first-year to a weekly studio; stand up mentor teams (faculty–alum–peer) in two programs; launch ten \$1,000 micro-grants for student-run traditions.

*Metric:*  $\geq 85\%$  of students report a small-group home; advising minutes/student up 20%; attendance at rites and salons up 30%.

### *5. Strengthen institutional agility and vision*

*Why:* In fast cycles, design beats drift.

*Monday 9 a.m.:* Name a foresight group and run the first drill; open a 60-day fast-track for GenAI-related courses; start a weekly ship room; stand up two dashboards.

*Metric:* Median time from course idea to launch cut by half; four foresight drills published in a year; three low-value programs sunsetted and three new credentials launched.

### *6. Engage students as partners*

*Why:* Nothing about students without students.

*Monday 9 a.m.:* Seat three paid students on the GenAI Council; launch a Student Co-Design Fund; recruit 12 Student AI Fellows; schedule a campus Demo Day.

*Metric:*  $\geq 10$  student pilots shipped ( $\geq 3$  adopted);  $\geq 80\%$  of capstones include portfolios with GenAI-trace logs and a live defense; retention improves where Fellows are active.

## Co-Intelligent Learning Environments

Imagine a university in 2030 that has fully embraced a human-AI partnership in its pedagogy. In a classroom (physical or virtual), every student has access to a GenAI learning assistant—essentially a personalized tutor that knows their strengths, weaknesses, and learning style. This GenAI assistant can answer questions at any time, provide extra practice problems, give feedback on essays, and suggest resources. But the key difference from an online self-study scenario is that this all unfolds in a community context curated by faculty. The course is designed for *co-intelligence*: assignments require students to use their GenAI tools in creative ways, and then critically reflect on the results.

For example, a history class might have students work with their GenAI assistant to gather multiple perspectives on the causes of a conflict. GenAI pulls from archives and even generates imagined dialogues from different viewpoints (with proper prompts). Students then bring these GenAI-curated findings to class and, guided by the professor, debate the interpretations. GenAI can even moderate breakout discussions or play devil’s advocate. The result is a richer discussion, but the *human students* are in charge of analysis and moral judgment. GenAI becomes a participant in learning, not just a deliverer of content.

### *Personalization and Mastery*

One great promise of GenAI in learning is personalization. Co-intelligent universities leverage that fully. Every student can proceed at their own pace to some degree, with GenAI adjusting difficulty and style. Yet, unlike the lonely self-paced online course of the 2010s, here the personalization is paired with social learning structures. Students might all meet once a week to do group problem-solving on a tough case that none could solve alone (even with their GenAI helpers). This fosters teamwork and the recognition of each person’s unique contributions—maybe one student has a brilliant intuitive grasp, another is great at prompting the GenAI effectively, another excels at spotting errors in GenAI output. New hybrid skills emerge: being a good “AI collaborator” becomes as important as being a good writer or experimenter. The university explicitly teaches these skills. For example, a core part of first-year seminars might be *GenAI literacy*—not just how to use the tools, but how to question them, double-check them, and integrate them responsibly.

Barnard College’s pyramid approach to GenAI literacy is a concrete template. They start students and faculty at a base level of understanding GenAI fundamentals and usage (levels 1 and 2 of the pyramid) and then build up to broader ethical context (level 3) and finally actually creating new GenAI tools or solutions (level 4). This ensures that by graduation, every student isn’t just a passive consumer of GenAI but can *innovate with it*.

The Center for Security and Emerging Technology noted that already about 100 universities have launched AI-related credentials (certificates, minors, etc.), and degrees in AI fields have grown 120% since 2011. In a thriving future, such programs are not niche; GenAI fluency is mainstreamed across disciplines. A literature major might use GenAI for textual analysis; a biology student might use machine learning to interpret lab results; an art student might co-create with GenAI and then critique the process.

### *Faculty Evolution: From Sage on the Stage to Mentor in the Loop*

A co-intelligent university profoundly changes faculty roles. The authority of the professor is no longer as the sole source of knowledge or even the primary explainer. Instead, the professor becomes a designer of learning experiences and a mentor of intellectual growth. They set the learning goals, curate or create content (with GenAI's help), and, most importantly, interact with students at a higher order.

One might call this the shift from “Sage on the Stage” to “Guide on the Side,” a phrase popular in past educational reforms, now turbocharged by GenAI. Because GenAI can handle the stage part—delivering lectures, drilling facts—professors are free to spend their time on the side: coaching individuals, facilitating project-based learning, connecting the dots between disciplines, and providing the human context and empathy that machines lack.

In Chapter 2's positive scenario of flourishing reinvention, universities actively retrain and incentivize their faculty for these new roles. Rather than hiring based purely on research prowess, teaching and mentoring ability might weigh more, since the role is about guiding students in an GenAI-rich environment. Professors might team-teach with GenAI: for instance, a faculty member sets up a simulation and the GenAI runs it, while the faculty member observes student reactions and gives feedback that the GenAI cannot (perhaps moral feedback: “what are the ethical implications of the decision you just made in the simulation?”).

We can draw an analogy to medical education with the advent of diagnostic GenAI. If GenAI can diagnose illnesses better than a human doctor (in some areas it's already approaching parity or superiority, like radiology image analysis), then the role of a medical professor teaching diagnosis changes. They must now teach students how to use the GenAI diagnosis, how to verify it, how to integrate it with patient communication. The teacher might let the GenAI present a case, but then guide students in asking, “What might the GenAI be overlooking? What social factors or patient history does this not capture?” Similarly, across fields, faculty shift to teaching the metaskills around GenAI.

One more aspect: research mentorship. In research universities, a big part of faculty work is training grad students and undergrads in scholarly inquiry. GenAI can aid research by sifting literature, suggesting hypotheses, even designing experiments. Faculty in a co-intelligent university harness that to push research further while also teaching students. A scenario: a history professor and their students use a GenAI to analyze thousands of archival documents (in different languages) that would have taken years to read manually. They discover patterns and then, crucially, the professor guides students in interpreting those patterns historically.

The GenAI might even generate a draft of a research paper; the students and professor then refine it, ensuring the narrative and arguments have human meaning and rigor. The outcome is more research productivity and a new model of apprenticeship: human scholars working alongside GenAI as colleagues.

### *Transdisciplinary and Problem-Based Learning*

GenAI excels at crossing domain boundaries and handling complex, multi-factor problems. This lends itself to transdisciplinary education, which many have touted as crucial for solving real-world problems. Co-intelligent universities can center curricula around global challenges—e.g., climate change, public health, ethical GenAI itself—and use GenAI tools to integrate knowledge from various fields.

Students might form teams to tackle a challenge (say, designing a sustainable city). They will need engineering, policy, business, and social knowledge. Their GenAI assistants can supply technical data, run simulations for different design choices, and translate papers from other languages about urban innovations. The faculty act as consultants (a city planning professor, a sociology professor, etc., coming in as needed). The GenAI helps the students not get bogged down in grunt research so they can focus on creative and critical aspects. In the end, they produce something tangible (a design, a report, a prototype), and importantly, they reflect on the process, including how GenAI was used. Prof. Itamar Shabtai and I have seen something like this work in the CGU transdisciplinary course “AI for Humanity.”

With GenAI, those projects can be ambitious because students have essentially an infinitely knowledgeable assistant. The University of Toronto’s Rotman School recently created an “integrative thinking” program where students use GenAI to quickly gather diverse perspectives, then synthesize solutions—a taste of what’s possible.

Mentorship and Community remain crucial. Co-intelligent doesn't mean students just alone with GenAI; it ideally means more interaction between students and mentors on nuanced aspects. Think of a studio model (like in design schools): students work on projects (with GenAI aids), then present to peers and faculty for critique. The human connection is used where it adds most value—in interpretation, values, aesthetics, etc.

### *Amplified Research and Innovation*

For research universities, GenAI could usher in a golden age of discovery *if harnessed right*. We saw in Chapter 2 how remarkable a difference GenAI is already making in research—and the technology is not even three years old. The “flourishing” university scenario in Chapter 2 has researchers teaming with GenAI, achieving research breakthroughs faster. Students can be involved in cutting-edge work earlier, since GenAI lowers the barrier to entry (for example, an undergrad in biology can use GenAI-driven bioinformatics tools to do analysis that once only a PhD could do manually).

Universities can become innovation hubs for GenAI application, partnering with industry and communities. For instance, a university's education department might work with a GenAI company to test new learning algorithms in classrooms, contributing expertise on pedagogy. Or a business school could partner with local government to use GenAI for analyzing economic data to inform policy, involving students in the process.

### *Humanizing the University in a GenAI World*

Finally, a co-intelligent thriving university would likely emphasize aspects of human development that might have been sidelined in the past rush for prestige or rankings. GenAI can help universities “educate the whole person.” Ethical reasoning, empathy, teamwork, adaptability, and resilience—these become learning outcomes as important as any technical knowledge. We explore these dimensions in Chapters 4 and 5—and indeed, exploring these uses of GenAI are a key goal of the new CGU course “GenAI for Graduate Success.”

In summary, the flourishing reinvention scenario depicts universities that are adaptive, collaborative, and focused on human-AI synergy. They use GenAI as a catalyst to improve education rather than as a crutch or threat. They make themselves indispensable by offering what GenAI alone cannot—a nurturing ground for young people to become not just competent workers, but creative, ethical, and socially adept citizens in partnership with technology.

Of course, getting to this scenario requires conscious strategy. It won't happen automatically. Many current practices and incentives in academia would need to change. This leads us to concrete strategies universities can pursue now and in the coming few years to navigate toward reinvention and away from collapse.

## Practical Strategies and Recommendations for Universities

How can university leaders act today to anticipate these disruptions and steer their institutions toward the positive co-intelligent future? We outline practical, actionable strategies across curriculum, institutional policy, faculty development, and student life. These recommendations are bold by traditional standards—because incremental tweaks won't suffice in the face of potential upheaval. Each strategy aims to enhance the aspects of education that add distinctive value (especially human-centered ones) and integrate GenAI in a way that augments rather than diminishes the university.

### *1. Redesign Curriculum for the GenAI Era*

#### *Integrate GenAI Literacy and Collaboration Skills Across All Programs*

Every student, regardless of major, should graduate GenAI-literate and adept at working with GenAI. This doesn't mean everyone must code machine learning algorithms; it means understanding GenAI capabilities and limitations, knowing how to effectively use GenAI tools in one's field, and critically evaluating GenAI outputs. Some universities have already started: University of Florida's initiative to embed GenAI into every undergraduate and graduate program is a leading example. Barnard College's tiered GenAI literacy framework shows how to gradually build from basics to advanced use. Universities should require at least one foundational course on GenAI (covering how generative GenAI works, ethical issues, hands-on practice with tools) for all students—akin to a writing requirement or basic computing course.

Beyond basics, curricula should include “human-AI collaboration” projects. For example, engineering programs might have students design something using GenAI tools and then analyze the result. Business students could work on cases where they must leverage GenAI analysis but also add human insight. The goal is to train students in *co-intelligence*: using GenAI as partners.

### *Emphasize Transdisciplinary, Problem-Based Learning*

Break down rigid departmental silos to allow more interdisciplinary courses that tackle real-world problems (climate, health, social justice, etc.), which require human and GenAI insights. GenAI can supply information from multiple domains, so teach students to integrate knowledge. Create project incubators or “challenge labs” where students from different majors team up, use GenAI tools to gather and analyze data, and propose solutions. Such experiences not only are engaging, they mirror the future workplace where cross-disciplinary teamwork with GenAI will be common.

### *Curriculum on Ethics, Creativity, and the Human Context*

As GenAI handles more technical tasks, universities should bolster instruction in areas GenAI can't fully replicate: ethics, creative thinking, leadership, empathy, communication. This might mean expanding philosophy, humanities, and arts offerings, but also integrating those topics into science and professional courses.

For instance, a computer science course includes modules on ethical GenAI design. A healthcare course trains bedside manner and compassion, perhaps with the help of GenAI role-play simulations but followed by human reflection. Courses like CGU's “AI for Humanity” help students to consider GenAI's ethical dimensions and societal impacts. Such courses both prepare students and demonstrate universities' commitment to values beyond pure technical skill.

### *Offer New Credentials and Flexible Learning Pathways*

For certain audiences, universities can offer micro-credentials or certificates in specific competencies (often developed with industry input). Expand these into a larger ecosystem: let students earn digital certifications for distinct skills (data analysis with GenAI, GenAI-augmented graphic design, etc.) as they progress, which employers can recognize.

GenAI can help students succeed with more flexible degree timelines—for example, 4-year degree programs that can be taken in modular chunks, interspersed with work, where GenAI tutors keep students learning even off campus. This helps those who might otherwise forego a long degree. University of Wisconsin's competency-based degrees or Georgia Tech's successful online MS in Computer Science (supported by interactive GenAI-driven forums) are precursors.

## *2. Redefine Faculty Roles and Support Faculty Adaptation*

### *Shift Hiring and Promotion to Value Teaching and Mentorship*

If faculty are to become mentors and guides rather than primarily lecturers, universities must incentivize that. This means in hiring new professors (and in tenure/promotion), give significant weight to teaching excellence, innovation in pedagogy, and mentorship. Reward faculty who experiment with GenAI tools to improve learning outcomes. Some top universities have teaching-track faculty; expanding these roles could help bring in talent focused on student development in an GenAI-rich environment. As GenAI handles routine teaching content, the human professor's competitive advantage is inspiring, motivating, and personally guiding students. Make those the traits that are celebrated and advanced.

### *Provide Comprehensive Faculty Training in GenAI Tools and Pedagogy*

Many professors understandably feel uncertain and anxious about GenAI. Universities should offer extensive professional development—not one-off workshops, but ongoing training programs. For example, the City University of New York (CUNY) with a Google grant is training 75 faculty to develop GenAI-utilizing teaching methods. One idea is to create an internal “AI in Teaching Academy” where faculty can learn from experts and each other. Topics should include how to use GenAI to save time (e.g., generating quiz questions, summarizing readings), how to design assignments that incorporate GenAI (and prevent cheating by design), and how to address GenAI-related academic integrity issues constructively.

But the “big fish” are in teaching co-intelligence. I hope that the ideas in this book and the syllabus for “GenAI for Graduate Success” can inspire even more creative and profound applications.

### *Encourage Faculty-AI Collaboration in Research and Course Design*

Universities could establish internal grants or awards for faculty who pioneer creative GenAI integrations. For example, a grant for redesigning an introductory course with a GenAI tutor element, or for a professor who uses GenAI to analyze their teaching (maybe analyzing class transcripts to see where students get confused). Creating a few showcase “AI-enhanced courses” can provide models for others.

Similarly, support research faculty in using GenAI for literature reviews, data crunching, etc., so they see it as an ally, not a threat. This might involve investing in GenAI tools

(institutional subscriptions to advanced platforms) and having IT staff or librarians who specialize in helping faculty use them.

### *Redefine the Classroom Experience (Blended GenAI-Human teaching)*

Strategize at an institutional level about what the classroom of the future looks like. Likely it's a blend of online, GenAI-driven components and high-value in-person sessions.

A flipped classroom model is a possibility. Here, students learn basic content via an GenAI-taught module on their own time. Time in class is spent on discussion, group work, and mentor feedback. Many institutions tried “flipped classrooms” in the 2010s, but with GenAI, the independent learning part can be far more engaging and adaptive (no longer just reading a chapter or watching a video—now interactive GenAI dialogs).

Graduate schools could offer rolling course start dates or self-paced courses with monthly in-person intensives. This flexibility could attract people who are working or otherwise unavailable for full-time, sequential classes. It does require faculty to manage more fluid course structures, which is why training and rethinking workload will be necessary.

### *New Support Roles*

To support faculty, create new staff roles or redefine existing ones. For example, imagine librarians as “information and GenAI literacy coaches,” helping students and faculty navigate GenAI research tools and teaching critical evaluation (the ALA’s draft competencies for library workers is on point). Instructional designers might become GenAI integration specialists, helping faculty plug the right GenAI activities into their courses. Perhaps even have an in-house “GenAI ethicist” or “GenAI ombudsperson” to advise on policy and handle incidents (like disputes around GenAI-generated student work). These roles ensure that as tech evolves, the human infrastructure to use it wisely is in place.

## *3. Innovate in Delivery Models and Credentials*

### *Hybrid and Flexible Learning Models*

The pandemic taught us that hybrid (online + in-person) models can work, but now we can truly optimize them. Universities should invest in robust online platforms with GenAI capabilities—for example, a learning system that uses GenAI to personalize content and alert instructors when a student is struggling.

At the same time, emphasize what in-person is best for: community and hands-on experiences. As noted, one model could be low-residency programs: students do much of the learning online with GenAI support, but come to campus for short, intensive residencies (a few weeks a semester) for labs, group projects, networking, etc. This could appeal to students who need to work or care for family (making college more accessible) or international students wary of long stints abroad.

### *Stackable Credentials and Lifelong Learning*

The era of one-and-done degrees may give way to lifelong education, especially as GenAI shifts job skill needs rapidly. Universities should position themselves as lifelong learning partners. Offer modular courses that alumni or mid-career professionals can take on demand (with GenAI tutoring to allow self-paced learning). Create “stackable” credential pathways: for example, three certificates can combine into a master’s degree. Many universities are doing this at the edges; it should become core strategy. Notably, the UPCEA global study on lifelong learning (June 2025) emphasizes making lifelong learning central to university strategy. If traditional 18–22 enrollment dips, serving adult learners continuously can be a financial and mission-saving pivot. GenAI can assist by identifying alumni skills gaps (maybe by analyzing job market data) and suggesting courses to them—a personalized marketing that helps people reskill and helps the university stay relevant.

### *Partner with Industry on GenAI Initiatives*

Universities should not view tech companies purely as competitors; they can be collaborators. An example is CGU’s Center for Information Systems and Technology. Its recently launched AI for Humanity Institute builds on partnerships with corporations and philanthropies. Forge partnerships where, say, a company pilots new educational technology at your campus in exchange for expertise and shaping its development ethically. Or work with employers to co-design curricula that ensure students learn the specific GenAI tools being used in that industry. These partnerships can create pipelines for student employment and possibly financial investments in the university. Done right, partnerships can give students cutting-edge experiences (like access to the latest GenAI software, or internships focused on human-AI teamwork) which make the university more attractive.

### *Improve Signaling of University Value*

As Chapter 3 and Appendix 3 argued, the GenAI revolution means that over time academic credentials may have less value as signals of competence. If grades and degrees are less trusted, universities might offer additional validated portfolios or competencies for graduates. Essentially, play the new game: instead of just defending the old diploma, provide the evidence of skills and co-curricular achievements that employers now seek.

This could involve assessment innovations. Perhaps students do capstone projects with real impact (and the GenAI can help measure their contribution), giving something concrete to show employers.

### *4. Reinforce the Human Elements of Campus Community*

If one accepts that GenAI will handle a lot of intellectual grunt work, then what's left is making the university experience deeply human and enriching in ways machines can't replicate. This is both an educational goal and a strategic differentiator.

### *Foster In-Person Connection and Unique Experiences*

Universities should double-down on things like first-year experiences, learning communities, and cohort-building. Ensure every student has a small group setting (like a seminar or project team) where they form bonds with peers and mentors. This might mean restructuring large intro classes into smaller discussion sections or studios—even if the main content delivery is by GenAI lecture, require weekly small-group meetings led by a faculty or trained upper-level student to discuss and apply the material. Create more interdisciplinary mingling spaces (physical lounges or virtual communities) to combat the siloing that pure online can cause. Essentially, make campus a place people *want* to be because of the other people. Some ideas: hackathons, innovation labs open to all majors, arts and cultural events that invite participation, community service projects partnering with local organizations—these bring students together around meaningful activity. GenAI cannot replace the feeling of collaborating side by side on a volunteer project or performing in a band or debating philosophy at midnight in a dorm. So universities should highlight and invest in those opportunities. This harks back to James Blaisdell's goal for Claremont Graduate University and Pomona College: great conversations that matter.

### *Leverage GenAI to Free Up Time for Human Interaction*

Use GenAI administratively to reduce busywork that often bogs down both students and staff. For students, maybe a GenAI system handles routine advising (“what courses do I need to graduate?”) so that when they meet a human advisor, they can talk about bigger goals and personal development. For faculty, use GenAI to automate grading of routine assignments, freeing them to have more one-on-one or small group meetings with students. If GenAI can schedule meetings, answer common emails, etc., faculty should use the saved time to engage more with students, not just to write one more journal article. Make that expectation clear.

Some institutions are already implementing GenAI chatbots for student services (answering FAQs about financial aid, for example). North Carolina State University had a GenAI assistant (“WolfBot”) to answer IT and registration questions, which freed staff to handle complex cases. Expand these efforts, always with a human oversight to ensure accuracy.

### *Enhance Mentorship Programs*

Set up robust mentorship structures that GenAI cannot supplant—for instance, alumni mentoring current students, faculty-student mentorship beyond academics (career and life advice), peer mentoring between upperclassmen and first-years. GenAI might help facilitate matches (finding a good alum based on student interests), but the relationship is human. Research shows that strong mentor relationships improve student success and sense of belonging. In an GenAI-saturated world, having an experienced person take a personal interest in your growth is invaluable.

It might also be part of how universities distinguish themselves: “At our college, every student gets a dedicated mentor team (faculty, alum, peer) guiding them.” This is labor-intensive, but GenAI can handle some coordination and tracking of these programs to reduce admin overhead.

### *Preserve and Cultivate Campus Traditions and Social Learning*

Rituals, traditions, and informal learning (the chats in the dining hall, the student club activities) are glue for community. Alas, COVID-19 sidelined many such activities, and fully reviving them has proved difficult. GenAI might be used to nudge students towards events—e.g., a GenAI assistant that suggests, “Hey, there’s a cultural festival on campus tonight, go check it out!” (like a smart calendar that learns a student’s interests).

But more importantly, provide resources and encouragement for student-led initiatives that build community. Perhaps ironically, the more digital we get, the more precious analog experiences become but the harder it is to make them happen.

## *5. Strengthen Institutional Agility and Vision*

### *Engage in Scenario Planning and Foresight*

University leadership should actively explore the two scenarios in Chapter 2 and stress-test their institutions. For example, imagine a task force or working group on “AI and the Future of Our University” that includes faculty, students, administrators, and perhaps external advisors who have studied success stories in this domain.

### *Policy and Guideline Development*

In the short term, clear policies around GenAI use by students and faculty are needed—not just punitive (like “don’t cheat with GenAI”), but constructive. For example, define where GenAI assistance is allowed or even encouraged, versus where independent work is essential. Many universities are publishing GenAI guidelines now (for instance, the European University Association is compiling best practices).

### *Continuous Curriculum and Program Review*

As noted in Chapter 2, the pace of change of both GenAI technologies and of adoption will be fast. Perhaps establish an accelerated approval process for new courses on emerging topics (so you can offer, say, a “GenAI for Graduate Education” course while it’s hot). As always, universities are advised to be ready and willing to curtail programs that consistently lose enrollment or become obsolete, and redirect resources to new areas. For good and bad reasons, this sort of advice is seldom heeded. Perhaps the crisis scenario imagined in Chapter 2 will enable bolder decisions in the future.

### *Collaboration and Sharing of Best Practices*

All of higher education is experiencing this exciting, scary moment. It is consoling to know that it’s not just us. As with individuals facing life crises, it is advisable not to go it alone. A university can seek out peers to share the challenges and, perhaps more importantly, what is working and not working in integrating GenAI.

## 6. Engage Students as Partners in the Change

Students' voices are critical. They are tech-savvy. They know what they need (and what's not working). Universities can create forums or committees where students contribute to GenAI policy and curriculum ideas. We could sponsor student projects that explore how GenAI can improve campus life. Perhaps a student team could develop a GenAI chatbot to answer questions about campus events—giving them experience and helping the school. If students feel included and see their university innovating, they are more likely to stick with it rather than dropping out for the next alternative.

Additionally, be transparent with students about the value of their education in this changing world: help them understand how the university experience is preparing them to do things GenAI can't, and to work alongside GenAI. This will ease their own anxieties about the GenAI revolutions and help them articulate to future employers the value of their educational experiences.

By implementing these strategies, universities can better future proof themselves. Not everything needs to be done at once, but a mix of quick wins (like updating some courses, forming a GenAI task force) and long-term shifts (like culture change in faculty roles) should start now. The difference between institutions that thrive and those that fail may well be the willingness to cannibalize old practices in favor of bold new ones, before external forces do it for them.

Table 5.1. Ideas for Two Dashboards

Dashboard	Measures	Cadence & Owner	Use
Learning & Integrity	% syllabi with GenAI rules; % courses with GenAI-trace assignments; # studios/live defenses; quality-of-feedback score; sense-of-belonging; integrity incidents (down).	Monthly (Teaching & Learning + Registrar)	Tune course design; target support; track whether practice matches policy.
Market & Resilience	Enrollments by segment (new, adult, international); certificate uptake; time-to-approve courses; completion rates; cost-to-serve; alumni participation; partner co-labs shipped.	Monthly/Term (Provost + IR)	Reallocate seats and funds; green-light or sunset programs; plan hiring.

## Concluding Thoughts

GenAI promises revolutionary changes in higher education. Demand for traditional degrees could crater as GenAI proves skills directly and automates white-collar work; supply of educational services will be upended as GenAI takes on teaching and information roles. Without bold action, many institutions could fail under these twin pressures. But through imaginative foresight and proactive adaptation, universities can transform themselves. By embracing GenAI as a collaborator and refocusing on distinctively human strengths—mentorship, community, creativity, ethics—they can provide an education that remains invaluable. The collapse of the old model, if it happens, would be tragic; but its place can be taken by co-intelligent universities that are dynamic, inclusive, and oriented to lifelong growth. The strategies outlined—from curriculum overhaul to faculty role shifts to community emphasis—offer a roadmap. These are no small tasks; they require visionary leadership and a willingness to break with past norms.

The tide of GenAI is coming—we cannot hold it back with a broom. Instead, we must ride it, steer it, and build new boats fit for the journey. The true measure of success will not be just in institutional survival, but in how universities contribute to human flourishing in the age of intelligent machines. If they succeed, GenAI revolutions will not mark the end of higher education, but the exciting next chapter of its evolution.

In the next chapter, you'll get a taste of how exciting that journey will be. You'll see how astonishing new GenAI capabilities, barely imaginable two years ago, can advance the six venerable, shared goals of graduate education. You'll experience vicariously a new course with student-AI collaborations that left the students (and me) inspired. And I hope you'll be eager to move ahead yourself with the next round of experimentation.

## CHAPTER 6. LEARNING CO-INTELLIGENCE

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Chapter 5 gave us a university-level playbook. This chapter takes us into the classroom, where we can experience co-intelligence in action. Here GenAI is not just a search engine, a memo writer, or an image generator. It is an almost magical tutor, coach, mirror, and teammate. In this short, intensive course—“GenAI for Graduate Success”—students and their professor discovered how these tools can stretch what we learn, how we do research, and even how we think together.

Here’s the welcome letter to students in the course.

*July 8, 2025*

*Dear colleagues,*

*Welcome to the frontlines of a remarkable revolution!*

*You are embarking on graduate studies at a moment unlike any other—a juncture defined by rapid technological upheaval and profound uncertainty. GenAI tools such as ChatGPT Edu and NotebookLM, which you’ll use in this course, can already complete graduate-level problem sets, draft good academic papers, and pass bar exams and PhD qualifying tests.*

*These extraordinary capabilities raise unprecedented questions for us all. What will it mean in a few years for someone to be fully qualified in your discipline and profession? What can you and your professors do to help you? How can you effectively partner with GenAI to do so? How can you deal with the biases and shortcomings of GenAI, in your graduate studies and in the future?*

*Bluntly, mastering your field will entail mastering generative AI. Already, many academic and professional organizations—not to mention employers—require AI competence. I’d go further: within two years, you will be assessed as a scholar and professional by how effectively you collaborate and co-create with GenAI.*

*This course is your gateway to becoming adept and inventive with GenAI. These powerful tools are accessible, intuitive, and engaging. You’ll rapidly gain confidence and skill. You will surprise yourself (but not your professor) with the creativity and insight you’ll achieve through this co-intelligent partnership.*

*You’ll also position yourself to embrace the rapid advancements in GenAI anticipated within just the next year or two. New iterations of ChatGPT and similar platforms are quickly approaching what some describe as “superintelligence”—AI systems whose capabilities surpass human expertise across numerous domains. GenAI is poised to*

*accelerate research, discovery, and innovation beyond what most of us can currently imagine.*

*An immediate consequence: we stand on the brink of a radical reinvention of universities and graduate education. You have a unique opportunity—and, I believe, an obligation—to explore, discover, and redefine your academic and professional roles in this emerging AI-transformed landscape.*

*And I'm here alongside you, in full redefinition mode.*

*No one—your professor most certainly included—knows exactly how this narrative will unfold. The GenAI revolution isn't even three years old. We're all beginners here.*

*I reckon we're in one of those proverbial adventures of a lifetime.*

*Cordially,*

*Bob*

## Apart from the AI, What's Different About This Course?

In Chapter 4, we talked about how graduate study has both instrumental and intrinsic goals. Despite the great differences across professions, academic disciplines, and degree types, six shared goals emerged: deep expertise, working with ethics and integrity, research skills, collaboration, communication, and career flexibility and lifelong learning.

For each of the goals, this course advances a set of practices—useful even without AI—and then shows how GenAI makes those practices run faster, reach wider, and invite more voices in.

### *Goal 1. Mastery — Think Like an Expert*

Recall Chapter 4's discussion of “thinking like a . . .” (lawyer, economist, cultural anthropologist, and so forth). I suggested that this has three components:

- a. Possessing the field's “big insights” so you see things non-experts don't.
- b. Being learned: widely and deeply read leading to connoisseurship that goes far beyond knowing the summaries.
- c. Being fluent in the language of your field.

This course explains what is meant by “big insights” (and, alas, how they can slide into ideologies).<sup>25</sup> It shows students how to read aggressively (an article in minutes, a book in an hour) and also how to read deeply. It explains how mastering a field’s language means understanding how it moves from evidence to meaning: the craft of arguments—how claims are made, tested, and overturned.

*With GenAI:* Students tailor GenAI as a personal mentor, creating individualized learning pathways and customized study guides. They use GenAI as their skills coach from negotiation to counseling to handling an unruly classroom—and learn how to create their own GenAI coach. They use prompts to explore what it means to “[think like an expert](#)” in their discipline or profession. Students start to master the essential graduate skill of self-directed learning—now enhanced and accelerated by GenAI.

### *Goal 2. Integrity — Question Authority (All of It)*

Students engage critically with GenAI output, including hallucinations, “bullshit,” and biases. The aim is a scholarly habit of mind: not accepting knowledge at face value but interrogating and refining it. We connect that practice with long-standing challenges of integrity and bias in academia—motivated reasoning, the replication crisis, and the blind spots that come with “thinking like an expert in this discipline.”

*With GenAI:* One method is to illustrate different biases or “takes” through GenAI simulations—religious, disciplinary, political, and cultural. (The religious example is not judgmental but uplifting.) Students see how the same question can yield sharply different perspectives. They also see how this diversity can end well: collaboration improves when multiple lenses are recognized and combined. In other words, work gains when we harness—not erase—the biases, perspectives, and comparative advantages of many minds.

### *Goal 3. Research — Start with Better Questions*

Methods matter, and GenAI tutors can help teach them.<sup>26</sup> But the choke point in high-value research is asking the right questions. That’s the aim of what I call the Fact Machine

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<sup>25</sup> Klitgaard, Robert. *Prevail: How to Face Upheavals and Make Big Choices with the Help of Heroes*. Eugene: Wipf and Stock, 2022. Also audio book.

<sup>26</sup> Many examples in Klitgaard, Robert. 2024. *Using ChatGPT in Graduate Education: A Beginner’s Guide (And We’re All Beginners Here)*, 2<sup>nd</sup> ed. Amazon Kindle KDP books. Also available open access in print and audio: <https://robertklitgaard.com/chatgpt-in-education>

Exercise: thinking through what we want to know before the data at hand or a favorite method drive us into a particular project.

Better questions also emerge when the process is inclusive. Running the Fact Machine Exercise with a group surfaces perspectives that no single researcher would have noticed. Exercises like those in Goal 2 uncover different “takes” on a question, and Step 4 will suggest further ways to draw in diverse voices.

In statistical and econometric work, I also urge beginning with exploratory data analysis (EDA) in the Mosteller–Tukey spirit: look, plot—notice surprises.<sup>27</sup>

*With GenAI:* The [Fact Machine](#) now has a remarkable partner. GenAI can restate our queries, suggest new ones, and then sort them into categories at the end of the exercise. It also makes [EDA accessible in plain language](#)—anyone can pose questions, not just the “quant types.” These innovations open the research process to voices that might otherwise be sidelined.

GenAI can also speed the daunting path from a vague idea to a well-formed project: from lit review, to a Deep Research report, to a doable topic we care about, to a plan for the first six months, even to funding possibilities. A [guided series of prompts](#) can take us and our advisors through that journey in a few hours.

#### *Goal 4. Collaboration — Foster Comparative Advantage.*<sup>28</sup>

Collaboration thrives when differing “takes” shift from friction to insight. GenAI facilitates richer, more productive collaboration—clarifying data, bridging disciplines, and creating engaging case studies. Students use GenAI to develop skills of effective collaboration (listening, explaining, leveraging comparative advantage).

*With GenAI:* As in Goal 2, GenAI can surface different perspectives and set them down anonymously, so no voice is singled out or dismissed. Prompt sequences guide collaborators to explore their lenses afresh.

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<sup>27</sup> Mosteller, Frederick, and John W. Tukey, “Data Analysis, Including Statistics,” in *Handbook of Social Psychology*, 2nd ed., vol. 2, ed. Gardner Lindzey and Elliot Aronson. Reading, MA: Addison-Wesley, 1968: 80–203. Tukey, John W. 1977. *Exploratory Data Analysis*. Reading, MA: Addison-Wesley, 1977.

<sup>28</sup> Klitgaard, Robert. 2023. *Bold and Humble: How to Lead Public-Private-Citizen Collaboration, with Five Success Stories*. Bhutan: Royal Institute for Governance and Strategic Studies. Open access in print and audio: <https://robertklitgaard.com/bold-and-humble>

Other tailored prompts help us design a [convening](#): choosing participants, identifying shared data, drafting a case study in the style of Harvard Business School, presenting relevant frameworks, and co-creating that imagined success story.<sup>29</sup>

### *Goal 5. Communication — Value First, Audience First.*

The University of Chicago’s Larry McEnerney teaches a hard truth: academic writing should change how readers think by addressing their problems in their terms. RAND puts it similarly: ask what your audience needs to decide, and therefore what they need to know.<sup>30</sup>

*With GenAI:* Students learn and practice how to present results to varied audiences, from academics to practitioners and including people usually excluded from the research process. GenAI and students work together to refine their messages to ensure clarity, brevity, and impact for different audiences. Use a GenAI “[omissions check](#)” to surface what readers will need but you haven’t said—then fix it. Other prompts aid in editing, shifting style, simplifying complex documents, drafting abstracts, or providing translations.

### *6. Lifelong Learning — Your Calling and Next Steps*

Students learn to use GenAI as a [career counselor](#)—helping them to explore academic and career options, surface [teaching options](#), raise funds, publish their work, and secure meaningful employment. Students connect their scholarly and professional ideals and skills directly to real-world success, positioning themselves for careers where co-intelligence is essential.

★ ★ ★ ★ ★

These approaches, I believe, carry value on their own as ways of pursuing the classic goals of graduate education. What GenAI adds is speed, reach, and inclusion—helping the same goals unfold more quickly, broadly, and collaboratively. The course, then, is both: a set of innovative practices in graduate education and an experiment in how GenAI can help them flourish.

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<sup>29</sup> Klitgaard, Robert. 2021. *The Culture and Development Manifesto*. New York: Oxford University Press.

<sup>30</sup> Larry McEnerney. 2014. “The Craft of Writing Effectively,” YouTube <https://youtu.be/vtlzMaLkCaM?si=MCvfnfl6g7vv93D6>. RAND. 1996. “Guidelines for Preparing Briefings.” Santa Monica: RAND. <https://apps.dtic.mil/sti/tr/pdf/ADA317235.pdf>

## The Course at a Glance

These eight sessions are designed to address the deeper goals of graduate education with the help of practical, powerful GenAI tools.

**Session 1: Getting Started.** Introduce six goals of graduate education; customize GenAI tools; practice prompting.

**Session 2: Your Tutor.** Tailor GenAI as a personal coach; practice self-directed learning.

**Session 3: Inaccuracy and Biases.** Cultivate critical thinking; use GenAI simulations to explore diverse “takes.”

**Session 4: Research Questions.** Use the Fact Machine to generate and refine questions; connect to lit review.

**Session 5: Co-Intelligence in Research.** Apply human + AI strengths to real-world cases.

**Session 6: Collaboration.** Practice convening: pooling data, studying cases, co-designing solutions.

**Session 7: Communication.** Audience-first writing and presenting; refine with GenAI prompts.

**Session 8: Career and Lifelong Learning.** Use GenAI as counselor, teacher, and career designer.

Each three-hour class features hands-on work crafting and improving prompts, breakout sessions for lively discussion, and moments to reflect on the big and small questions that emerge along the way. Students are evaluated through a portfolio of their work rather than traditional exams. The teaching platform Canvas supports interaction and preparation, allowing students to post assignments and engage in discussions before each class meets.

## Selected Examples

The heart of this course is the students’ collaborative work with GenAI, each other, and the professor. Appendix 5 provides an example of how classes were structured. All the prompts used in the course are gathered in Appendix 4.

I’d love nothing more than to walk you through each prompt. Alas, feasibility impinges. Instead, let me try to convey the spirit of things with six quick examples—each with a link to the goals of graduate education and the specific prompts we used.

## Box 5.2 — Self-Directed Learning

*Scenario.* A first-year stats student uses “Your Tutor” to rebuild shaky intuition on biased predictors. Twenty minutes later, she can share it effectively with her classmates.

*Try tutor prompts.*

“You are an upbeat, encouraging tutor... Ask what topic I’d like and what I already know; guide by questions; use analogies; end with a prompt that keeps me thinking.”

Then level up: never explain before a guiding question; layer simple → deeper; adapt pace; challenge assumptions with care.

*What it trains.*

- Learning through dialogue, not by getting a summary or looking up facts
- Even experts realize that they don’t quite know what they think they know—and with GenAI as the conversation partner, there’s no shame in that
- Calm, iterative problem-solving

*Why it matters.* Expertise is built through dialogue—including with yourself. This prompt has proved successful with both novices and experts. You can use “Socratic Explainer” to dive as deep as you wish into a topic you love.

*Prompts used.* “[Your Tutor](#)” and “[Socratic Explainer](#).”

### Box 5.3 — Better Research Questions

*Scenario.* A PhD student in education felt stuck—too many angles, no clear start. Less than an hour later: Twenty factual questions worth addressing and a field-interview map to get started.

*Try the Fact Machine Exercise.*

What facts would you like to know if you had a fact machine—that is, if you could know *anything*? You ask one factual question; GenAI restates it and asks one itself; then the two of you alternate questions till you get about 20. Then GenAI classifies the facts to be sought: readily available / researchable, have to find the study / only insiders and experts can say.

This is also a wonderful exercise to use with GenAI and a team of researchers. You hear each other's concerns by talking facts.

*What it trains.*

- Asking better questions before chasing answers
- Sorting facts by effort and value
- Shared inquiry without ego

*Why it matters.* Good research starts with good questions. This exercise forces them.

*Prompts used.* “[The Fact Machine Exercise](#)”

## Box 5.4 — From Research Idea → Grant Pipeline

*Scenario.* A PhD student came with a hunch and left with three viable projects, one chosen, a 90-day plan, and two funders to approach. First pass: a few hours.

*A series of prompts supercharges the process.*

1. Seed. Hunch, why now, success criteria, constraints (time, data, ethics/IRB, advisor fit).
2. Deep scan. Ask Deep Research for a detailed state-of-play with links.
3. Options. Request three feasible projects + an options matrix (novelty, tractability, data/access, ethical risk, time-to-impact, expected contribution).
4. Choose one (for now). Score them yourself on feasibility, value, and how much you love it. Pick one project.
5. Plan. Draft a 90-day plan (milestones, methods, prereg/IRB path, data plan, risks/countermeasures).
6. Funding. Map possible funders; draft a 150-word LOI and two outreach emails.

*What it trains.*

- Turning a hunch into choices, then a choice into work
- Scoping risk, ethics, and data early
- Moving from reading to doing

*Why it matters.* Advisors and committees back plans that live on paper and in calendars.

*Prompts used.* “[Finding Good Research Topics](#),” “[Developing Your Research Idea](#),” “[Getting Support for Your Research: Institutions](#),” and “[Getting Support for Your Research: Individuals](#).”

### Box 5.5 — Working across Disciplines

*Scenario.* A city’s AI-tutoring pilot “failed.” Five voices—economist, psychologist, manager, historian, technologist—argue why, then fix it together.

*Try these prompts to uncover and utilize disciplinary “biases”*

Give five different disciplines an example of a program that seemed not to work. Each writes a 120-word why-it-failed from their lens; stage rebuttals; then react to a success story of that policy working elsewhere; and finally co-design a better program.

*What it trains.*

- Seeing blind spots—yours and theirs
- Moving from clash to craft
- Building shared designs from rival frames

*Why it matters.* Teams fail when they share slides, not lenses.

*Prompts used.* “[Disciplinary Takes](#).” See also “[Anticipating Political Takes \(C, L, P, R\)](#).”

### Box 5.6 — Make Your Words Make a Difference

*Scenario.* A historian has to brief a city council—new audience, new stakes. The duet of prompts turns a dense draft into a clear briefing and a crisp deck.

*Try these prompts for writing and speaking.*

- Apply insights from Prof. Larry McEnerney of the University of Chicago: write to change what readers think; open with their problem; show value in their terms.
- Apply insights from RAND-style briefings: audience-driven; top-down; motivate early; outline slide; one point per slide; visuals > word charts; chunk; prune.

*What it trains.*

- Listening! What does your audience value, need, ignore?
- In writing and speaking, begin with what your audience needs to know
- Top-down structure and ruthless pruning
- Slides that carry meaning, not noise

*Why it matters.* If they don't hear it, it didn't happen.

*Prompts used.* “[McEnerney on Writing for Success](#)” and “[RAND-Style Briefings](#).”

### Box 5.7 — Designing Your Trajectory

*Scenario.* A mid-career MPH alum feels torn between program leadership and data roles. One hour surfaced three non-obvious paths and a fundable pilot.

*Try the Career Counselor prompts.*

Attach your c.v. Then instruct GenAI: “You are an experienced, encouraging psychologist and career counselor... engage in Q&A to surface goals and alternatives—including options I’ve never considered.”

A long conversation follows, which people from college students to a foundation president have described as “transformational.”

*What it trains.*

Brainstorming.

Narrative clarity about skills, values, and fit

Options beyond default lanes

Actionable next steps (people to contact; assets to ship)

*Why it matters.* Your career is a design problem; design it.

*Prompts used.* Appendix 4: “[Your Career Counselor](#)” and “[You as Teacher](#)”

## The Value of Co-intelligence

Graduate education must now include mastery of GenAI tools. It is no longer enough to be a passive user; expertise today means knowing how to fine-tune, interpret, and challenge these systems. This collaborative relationship—co-intelligence—becomes the essence of expertise in the age of GenAI.

By recognizing GenAI's abilities, we can separate what were once only means from what are enduring ends. Manual literature searches, routine calculations, and first-draft writing are means; the ends are critical thinking, original insight, ethical judgment, and creative problem-solving. Freed from the former, we can double down on the latter. GenAI challenges us to practice what we preach.

- We have long said that a PhD is for creating knowledge, not stockpiling it; GenAI frees time for creation and can even sharpen it.
- We prize depth and imagination over rote output; GenAI handles the rote and can spark new depths.
- We insist on integrity; GenAI's pitfalls oblige us to teach ethics more explicitly, including how to use GenAI to help detect dishonesty and bias.

You can feel the gain on the human side of the collaboration. Advising moves faster when students arrive with three AI-sketched options and real tradeoffs to discuss. Seminars rise above recap when a summary is prepared beforehand and the room can argue about meaning. Graduate students and their professors design better studies when a GenAI agent helps them pose sharper questions and anticipate failure modes.

For students, the message is heartening. Graduate study will not be about competing with robots or rehearsing outdated drills. It will be about becoming the best thinker and professional you can be, with cutting-edge tools at your side. GenAI is a skill to master, not a threat to endure—and mastery will make you more competitive in both academia and industry.

The GenAI tsunami is arriving. Academic careers are shifting, professional competence now requires demonstrable GenAI collaboration, and universities face a choice between renewal and drift. These pressures can seem daunting. But they also open space for imagination—for students and professors alike to pioneer ways of working where human creativity and judgment are amplified, not diminished.

And so, as this book closes, the work begins. Co-intelligence is no passing fashion; it is the new grammar of graduate education. Universities can drift or redesign, resist or reimagine.

The wager of this book is that if we cultivate co-intelligence—coach, mirror, spark—graduate education will not only endure but rise. It will form people who are sharper in mind, steadier in ethics, and bolder in purpose. That is the promise, and the challenge, of this new chapter in the ancient and venerable community of scholars.

## **Appendices**

## APPENDIX 1. SOME ECONOMICS OF CO-INTELLIGENCE: FIRMS, UNIVERSITIES, AND CLASSROOM

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GenAI is already reshaping labor markets and higher education, sparking both excitement and anxiety.

On the one hand, GenAI promises efficiency, personalized education, and strong gains in productivity. On the other, it threatens credentials, invites cheating, and challenges the usual ways professors teach and evaluate. This technology can undercut effort and achievement—and also enhance them. It will substitute for labor, even highly expert labor, and it will augment labor.

This appendix employs stylized economic models to clarify these tensions. Simple economic frameworks illustrate the mechanisms by which GenAI simultaneously replaces some types of human labor and amplifies others. A parallel model captures how GenAI disrupts university education—undermining traditional assessment methods while also creating potent pathways for learning and mastery. A third model considers how professors’ and students’ incentives shift in response to GenAI’s rapid adoption, again with both threats and opportunities.

By translating the GenAI revolution into simple economic terms, these models suggest how to avoid the negative consequences and take advantage of the positive ones. They also point to where collective-action problems lurk—meaning that, without better understanding and wise policies, the natural course of the GenAI revolution may lean negative. And yet the models support a main argument of this book: the enormous potential benefits of embracing co-intelligence—the effective partnership of humans with GenAI.

### Why GenAI Matters in the Workplace

Think of GenAI as a general-purpose tool that (i) automates tasks you don’t augment and (ii) magnifies tasks you do augment. Both effects occur at every rung of the skill ladder. A senior lawyer who forgoes GenAI can be automated at the drafting stage; a junior analyst who teams well with GenAI can outproduce peers. In

what follows, we therefore split labor by adoption—*unaugmented* vs. *augmented*—rather than by “low” and “high” skill.

Let  $L_u$  denote *unaugmented* labor (workers without GenAI competence) and  $L_a$  denote *augmented* labor (workers with GenAI skills who create synergies). Let *GenAI* denote the intensity of deployment (access, compute, tool coverage), normalized so  $GenAI = 1$  at baseline.

To model this, start with a standard Cobb–Douglas production function (output as capital  $\times$  labor, assuming constant returns to scale). We build it in two steps:

- **Step 1: Substitution.** To represent GenAI replacing unaugmented workers ( $L_u$ ), embed a *constant-elasticity-of-substitution (CES)* block. With CES parameter  $\rho$ , the elasticity of substitution is  $\sigma = 1/(1 - \rho)$ . This lets the model reflect how GenAI can (imperfectly) swap in for such labor without fully sacrificing productivity.
- **Step 2: Co-intelligence.** Add a multiplicative term capturing how the productivity of augmented labor ( $L_a$ ) increases when collaborating with GenAI—reflecting co-intelligence.

## Why GenAI Matters for Education

Turn now to a second production function: university instruction. Think of graduate education as generating two key outputs—*human capital* (where students build genuine skills that boost real-world productivity) and *signals* (such as degrees or grades that serve as rough proxies for job-ready abilities, per signaling theory; Spence 1974).

- **Human Capital.** GenAI can either replace or amplify the instructional roles of professors and teaching assistants. GenAI might substitute for routine tasks like basic tutoring or feedback on assignments, freeing educators for higher-value work. At the same time, GenAI acts as a multiplier—enabling co-intelligence where professors collaborate with AI to deliver more personalized, effective mentoring at lower cost, helping students learn faster and deeper.

- **Signals.** This is where the disruption hits hardest. First, GenAI makes it easier for students to “cheat” on traditional assessments—think of GenAI-generated term papers or exam answers that mimic human work—which undermines the reliability of grades and degrees as predictors of true competence. Second, GenAI empowers employers to assess skills directly and affordably (e.g., through GenAI-simulated interviews or task-based evaluations), reducing their reliance on educational credentials. This erodes the pure signaling value of a degree, shifting job-market demand toward graduates who can demonstrate GenAI-augmented abilities rather than just holding a diploma.

To model these effects, we treat teaching inputs much like labor in a firm-level production function. For substitution, we embed a CES block to reflect how GenAI can partially (but not perfectly) swap in for routine professorial or TA tasks, such as grading or basic lecturing—capturing the idea that some human elements, like nuanced judgment, remain hard to automate. For complementarity, we add a multiplicative term that captures co-intelligence, boosting overall educational output when GenAI enhances skilled instruction (e.g., professors leveraging GenAI for tailored lesson plans). Finally, we incorporate two key parameters: one that lifts human capital as students gain GenAI literacy (turning GenAI fluency into a core skill that accelerates learning), and another that diminishes signaling value as GenAI lowers employer assessment costs—putting pressure on outdated rote evaluations like exams, term papers, and problem sets, and favoring more dynamic, GenAI-integrated measures of mastery.

## Why GenAI Matters for the Choices of Students and Professors

Beyond aggregate production, GenAI reshapes the cost–benefit calculus of every student and professor in real time.

For students, GenAI offers two temptations that pull in opposite directions. On the one hand, outsourcing coursework to the model yields higher grades at lower effort—an easy-cheat equilibrium that erodes true learning and, when widely adopted, devalues the credential itself. On the other hand, investing time in co-intelligence skills—prompt design, critical oversight, creative iteration—raises

long-run wages because labor-market demand now tilts toward workers who can team with GenAI. That investment is further supported when GenAI (and inspiring professors) kindle a student’s intrinsic joy of learning and mastery: the satisfaction term in the utility function rises with genuine learning, but falls to zero when the work is mere copy-paste.

Professors face a parallel fork. Sticking with traditional take-home problem sets and essay exams keeps grading convenient but silently encourages the cheating equilibrium and accelerates credential decay. Redesigning courses—introducing in-person or traceable AI-embedded tasks and learning GenAI-enhanced teaching methods—curbs misuse and channels student effort into high-value skills, yet it imposes front-loaded costs and requires collective buy-in. Crucially, faculty who adopt GenAI for mentoring raise their own scholarly output and boost students’ intrinsic motivation—aligning instrumental rewards with academic ideals. Our simple model shows a tipping phenomenon. Without redesign, the system tips toward maximum cheating and minimal human-capital growth. But with shifts in assessment and faculty co-intelligence training, the equilibrium can tip the other way—cheating falls, GenAI-literacy investment rises, credentials regain meaning, and students’ intrinsic satisfaction grows because the work feels authentic and future-relevant.

## Modeling GenAI Dynamics in Firms, Universities, and Classrooms

### A. Firms: Output When GenAI Both Substitutes for and Complements Labor

We use the Cobb–Douglas production function but split labor into two parts and add a GenAI term to capture substitution and co-intelligence effects:

$$Y = A K^\beta [\psi L_u^\rho + (1 - \psi) \text{GenAI}^\rho]^{\mu/\rho} (L_a \text{GenAI}^\phi)^\nu, \text{ with}$$

$$\sigma = \frac{1}{1 - \rho} \text{ and } \beta + \mu + \nu = 1.$$

*Substitution block*  $[\cdot]^{\mu/\rho}$  *Co-intelligence boost*  $(L_a \text{GenAI}^\phi)^\nu$

**Reading the equation.** As *GenAI* rises, the CES term raises the shadow value of automation vis-à-vis  $L_u$  when  $\sigma > 1$  (analogous to automation). The multiplicative term raises the payoff to  $L_a$  (co-intelligence). The cross-term  $(L_a \cdot \text{GenAI}^\phi)^\nu$  implies the marginal productivity (and thus equilibrium wages) of augmented labor  $L_a$  rises as *GenAI* increases, while the marginal productivity of unaugmented labor  $L_u$  falls. Profit-maximizing firms thus shift demand toward labor capable of collaborating productively with GenAI.

In labor-market equilibrium, the relative wage schedule therefore tilts toward graduates with GenAI competence. Empirically, we could estimate  $\phi$  from productivity jumps in GenAI-augmented roles (as in Brynjolfsson, Li, and Raymond 2025).

## B. Universities: Producing Human Capital and a Signal

Think of a university as converting student effort plus teaching inputs into two educational outputs: human capital  $H$  (the real skills) and effective signaling  $S_{eff}$  (the value of educational credentials to employers as predictors of job-related productivity).

*Step 1: Effective teaching input*

$$T = (\omega P_u^\tau + (1 - \omega) \text{GenAI}^\tau)^{1/\tau} \cdot (P_a \text{GenAI}^\zeta).$$

*Substitution block  $(\cdot)^{1/\tau}$  Co-intelligence boost  $(P_a \text{GenAI}^\zeta)$*

Here  $P_u$  is unaugmented instruction (e.g., routine grading, slides, etc.) and  $P_a$  is augmented instruction (e.g., mentoring, coaching, inspiring, etc.). The CES piece lets GenAI substitute for  $P_u$ ; the multiplicative piece lets it complement  $P_a$ .

*Step 2: Human-capital production*

$$H = B E^\delta T^\varepsilon \text{GenAI}^\gamma (1 + \eta \text{GenAI}).$$

The marginal return to GenAI-assisted study is

$$\frac{\partial \ln H}{\partial \ln \text{GenAI}} = \gamma + \frac{\eta \text{GenAI}}{1 + \eta \text{GenAI}} > 0.$$

Student effort  $E$  still matters greatly (elasticity  $\delta$ ). But GenAI enhances learning  $H$  via three channels:

1. Cheaper routine instruction (captured in  $T$  via substitution, parameter  $\varepsilon$ ).
2. Direct GenAI literacy—students gain productivity directly from mastering GenAI tools ( $\gamma > 0$ ).
3. Co-intelligence—a synergy that multiplies the effectiveness of skilled professors and motivated students working alongside GenAI ( $\eta > 0$ ).

*Step 3: Signaling value*

$$S_{eff} = \frac{\kappa(a) H^\lambda}{1 + \mu \text{GenAI}}.$$

The parameter  $\kappa(a)$  measures how effectively educational credentials reflect students' true abilities and predict their performance on the job; it *increases with cheat-resistant assessment design*  $a$ . The denominator  $(1 + \mu \text{GenAI})$  reflects how greater employers' access to GenAI-powered skill assessments reduces reliance on credentials alone, diminishing the signaling value of traditional degrees. As GenAI becomes more pervasive and user-friendly, the traditional signaling premium erodes unless assessment adapts. Universities must therefore shift toward methods that (i) transparently integrate GenAI usage into the learning process or (ii) rely on in-person performance assessments, oral defenses, peer-reviewed code or data, and carefully documented project portfolios.

### Symbols (Sections A–B)

$A$ : total factor productivity;  $K$ : physical capital;  $L_u, L_a$ : unaugmented/augmented labor;  $\psi, \rho, \sigma$ : CES parameters with  $\sigma = 1/(1 - \rho)$ ;  $\phi$ : strength of GenAI's amplification of augmented labor;  $\beta, \mu, \nu$ : share parameters with  $\beta + \mu + \nu = 1$ .  $B$ : baseline educational efficiency;  $E$ : student effort;  $T$ : effective teaching input;  $P_u, P_a$ : unaugmented/augmented instruction;  $\omega, \tau$ : CES weights/curvature;  $\zeta$ : complement exponent on GenAI in  $P_a$ ;  $\delta$ : elasticity of  $H$  w.r.t.  $E$ ;  $\varepsilon$ : elasticity of  $H$  w.r.t.  $T$ ;  $\gamma$ : direct GenAI-literacy elasticity;  $\eta$ : co-intelligence multiplier;  $\lambda$ : signal elasticity w.r.t.  $H$ ;  $\kappa(a)$ : assessment-dependent signal coefficient;  $\mu$ : employer adoption parameter in the signal denominator.

### C. Classrooms: Modeling GenAI Choices of Students and Professors

GenAI reshapes the incentives of both students and professors. Professors determine the rules of assessment and how deeply to integrate GenAI into their teaching. Students respond strategically, deciding how much genuine effort to expend, whether to cheat using GenAI, and whether to develop advanced co-intelligence skills—skills that employers increasingly reward. The model highlights how intrinsic motivation can tip the balance away from cheating and toward genuine learning.

#### *Professors' choices*

Suppose professors have two key decisions:

- **Assessment design** ( $a$ ): the share of the course grade based on assessments resistant to cheating—such as in-person exams, oral defenses, or traceable GenAI logs (e.g., prompt logs plus versioned drafts). Higher  $a$  reduces cheating opportunities but increases professors' effort and assessment costs.
- **GenAI-enhanced teaching methods** ( $q$ ): professors choose how much effort to spend mastering and employing GenAI tools themselves—improving

instructional quality, inspiring students, and enhancing their own productivity and satisfaction.

Professors' payoffs combine benefits and costs:

$$\text{Professor payoff} = f(q, a) + g(q) - c_a(a) - c_q(q),$$

where  $f(q, a)$  captures benefits from improved teaching effectiveness and student engagement;  $g(q)$  captures gains in research productivity or professional satisfaction; and  $c_a, c_q$  are costs.

*Students' choices*

Students choose three variables for each course:

- **Effort**  $E$ : genuine personal study and practice.
- **Cheating**  $C \in \{0,1\}$ :  $C = 1$  means fully outsource to GenAI;  $C = 0$  means authentic engagement.
- **Co-intelligence effort**  $S$ : effort spent learning to collaborate effectively with GenAI (prompting, critique, iteration).

These choices determine the student's human capital:

$$H = B[E(1 - C) + \alpha S],$$

with  $\alpha > 0$  the direct gain from co-intelligence effort. The effective signaling value of their credential is

$$S_{eff} = \frac{\kappa(a) H^\lambda}{1 + \mu \text{GenAI}}.$$

Students' payoffs reflect wages, intrinsic satisfaction, and costs:

$$\text{Student payoff} = w(H, S_{eff}) + \theta H - \frac{k_E}{2} E^2 - k_S S - \pi(a) C,$$

where  $w(H, S_{eff})$  are expected future wages;  $\theta H$  is intrinsic satisfaction from authentic learning;  $k_E, k_S > 0$  are effort costs; and  $\pi(a)$  is the expected penalty from cheating, increasing in  $a$ .

Intrinsic motivation depends on professorial mentoring and the student's own co-intelligence work:

$$\theta = \theta_0 + \xi q + \varphi S,$$

with  $\xi, \varphi > 0$ .

*Equilibrium outcomes: cheating vs. co-intelligence.*

- **Low cheat-resistance scenario** ( $a \approx 0$ ). Students' optimal choice is typically  $C = 1$ , with low  $E$  and low  $S$ . Result: grade inflation without skill ( $H \approx 0$ ); signaling collapses as employers learn credentials predict little actual skill (low  $\kappa(a)$ ).
- **Moderate-to-high cheat-resistance** ( $a > 0$ ), with GenAI-enhanced teaching ( $q > 0$ ). Higher  $\pi(a)$  reduces cheating ( $C = 0$ ). Students shift toward genuine effort  $E$  and co-intelligence  $S$ . GenAI-enhanced mentoring  $q$  and exploratory co-intelligence tasks  $S$  increase  $\theta$ , reinforcing authentic engagement. Result: higher human capital  $H$ , restored signaling  $\kappa(a)$ , increased intrinsic satisfaction, and ultimately higher wages.

This is a tipping model. Minimal redesign invites widespread cheating and collapse of signaling. A modest redesign of assessment, paired with professorial investment in co-intelligence training, can yield an equilibrium of authentic engagement, skill development, and renewed credential integrity.

**Practical feasibility.** Can professors redesign assessments and help students both learn the subject matter and develop GenAI competence? Some innovations have proved promising. Detailed course pilots at Claremont Graduate University have already used ChatGPT to tailor instruction, problem sets, and examinations to each student's background and interests. These courses employ cheat-resistant, GenAI-intensive exams. The results have been highly positive, including enthusiastic student evaluations and some truly exceptional papers and

examinations (Klitgaard 2024). This and other early evidence suggests that designing such courses is learnable for faculty and productive for students. In short, the move from credential-centered to co-intelligence-centered education is happening now.

### General Equilibrium Feedback (Putting It All Together)

Students maximize expected wage  $w(H, S_{eff})$ . Because employers increasingly reward real skills  $H$  rather than credentials alone  $S_{eff}$ , students gravitate toward courses redesigned around *co-intelligence skills* ( $S$ ). Professors who adapt assessments ( $a$ ) and teaching methods ( $q$ ) accordingly boost students' genuine learning, restore signaling credibility, and secure their institution's long-term reputation and enrollment. Those who lag face declining student motivation, compromised credential signaling, and eventual irrelevance in the GenAI-driven labor market.

In short, GenAI can lead both professors and students toward a new educational equilibrium built around authentic effort, co-intelligence, and intrinsic motivation—a scenario in which everyone, especially students, ultimately benefits.

### D. Qualitative Lessons

As we saw in Chapter 2, GenAI is advancing with astonishing speed. Some experts anticipate “superhuman intelligence” within a year or two. Even if that is optimistic—and vague—the pace of progress means that any attempt to evaluate our equations based on data about the GenAI of, say, two years ago will be obsolete.

In addition, as emphasized in the main text, GenAI is a “fast idea,” quickly learned and adapted. The GenAI-enhanced production functions of firms, universities, and classroom teaching may shift abruptly. Again, quantitative estimates of the effects of GenAI based on even relatively recent data may not extrapolate.

Bluntly, we just don't know what will happen with the GenAI revolution. Some experts opine that GenAI will soon substitute for large swathes of highly educated professionals—even those who are conversant with GenAI. In contrast, as we saw

in the main text, a recent tour d’horizon across thirteen areas found that co-intelligence is already widespread and powerful (Klitgaard and Deep Research 2025). Already, many people who know how to collaborate with GenAI are making more of a difference (and more of a salary).

Because of the rapid pace of both technological change and diffusion, estimating the parameters of all our equations is impossible. But based on the analysis above, we can advance some qualitative predictions.

1. **Labor markets will reward GenAI competence.** Wage gains go to workers who augment their tasks with GenAI, at any skill level. Those who don’t will see their unaugmented tasks automated. Programs should teach *hands-on co-intelligence* rather than assume “high skill” is a shield.
2. **Students, universities, and employers will move from credentials to human capital.** Skills demonstrably augmented by GenAI matter more than parchment.
3. **Successful graduate programs will change both how they teach and how they assess.** Programs that emphasize GenAI-augmented learning, research, writing, and collaboration will retain credibility. Conversely, those relying heavily on traditional exams and term papers will see their credentials lose value as higher  $\mu$  shrinks  $S_{eff}$ .
4. **Faculty roles evolve.** Content delivery is automated; mentoring, ethical guidance, and co-intelligence rise in value.
5. **Without redesign, cheating can become dominant.** Rational students outsource work when detection is low.
6. **Traceable or in-person assessments curb cheating but need explicit GenAI integration.** The optimal mix requires students to show their GenAI **process** as well as their results (e.g., prompt logs + versioned drafts).
7. **Faculty face a collective-action challenge.** Redesign is costly unless institutions coordinate incentives.
8. **Intrinsic motivation and scholarly values can flip the equilibrium toward authentic learning.** The arrival of GenAI invites reflection upon deeper

questions regarding the purposes of graduate education—to produce skilled scientists, learned scholars, and effective professionals. Professors who integrate GenAI thoughtfully into their teaching can rekindle students’ intrinsic motivations by modeling joyful exploration, critical curiosity, and intellectual rigor—values central to the academic enterprise. Faculty exemplifying co-intelligence can reconnect students to the timeless missions of universities: the pursuit of truth, beauty, virtue, and joy. This reconnection enhances authentic learning, fosters intellectual growth, and safeguards academic integrity.

### E. Take-Home Messages

GenAI doesn’t just “replace jobs” or “help students cheat”; its effects run deeper. It rewires three interconnected economic systems simultaneously: the firm, the university, and the classroom. Work unenhanced by GenAI competence faces automation, while collaborative human–AI endeavors gain a powerful multiplier. The market premium shifts from credentials to co-intelligence.

Learning to partner effectively with GenAI is now a crucial investment for students, professors, and universities alike. Part III of the book—“How to Respond”—contains recommendations at both the institutional and individual levels. Chapter 5—“Universities Transformed”—builds on these points from this appendix:

- **Substitution is real, but complementarity is stronger.** Tasks that can be done without human input are automated; tasks redesigned for human–AI teams grow in value.
- **Human capital can rise even as signals erode.** GenAI can deepen skills, but unless assessment changes, employers will doubt what credentials mean.
- **Incentives shape equilibria.** Small adjustments in assessment and faculty effort can tip classrooms from cheating equilibria to authentic-learning equilibria.
- **Policy levers are concrete.** Assessment design (AI-trace, oral defenses), faculty development (mentoring, course redesign), and student investment

(challenge labs, new credentials) are handles that universities can actually move.

- **Heterogeneity matters.** Fields with routine, text-heavy tasks face stronger substitution pressures; those with fieldwork, ethics, and judgment gain more from co-intelligence.

The “six big moves” in [Chapter 5](#)—curriculum redesign, faculty incentives, reinvented credentials, reinforced community, institutional agility, and student partnership—are not abstract reforms. They are the institutional levers that raise the assessment share  $a$ , the faculty mentoring effort  $q$ , and the student investment  $S$  in ways that flip equilibria and anchor co-intelligence as the new normal. In short, the economics explains why redesign on purpose is urgent; Part III *shows* how to do it.

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## APPENDIX 2. THE GOALS OF GRADUATE EDUCATION

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What do learned societies and professional organizations say about the purposes of graduate education in their diverse fields? For example, what is it supposed to mean that someone has earned a PhD degree? An MBA?

The answers are not homogeneous, even within a given profession or discipline. Nathan Glazer once characterized “the minor professions”—as opposed to “major” ones like medicine or law—as having diffuse and diverse objectives. You never know what a student with a graduate degree in city planning or public policy or education (Glazer’s home professional school at the time) will have studied or is expected to know or do.<sup>31</sup>

On the other hand, a lesson from this Appendix is that the goals of graduate education have a number of common features.

### Doctoral Degrees in the Humanities

#### *Expected Knowledge and Scholarship*

Doctoral programs in the humanities (e.g. English, history, religion, cultural studies) demand deep disciplinary knowledge and the ability to produce original scholarly contributions. The goal is that by completion, graduates not only master a body of knowledge but can “add to what is already known” through independent research. They are trained to critically interpret texts and cultural artifacts, often engaging with the canon of human thought. In practice, this means humanities PhDs develop expertise in analyzing complex ideas, constructing arguments, and situating new insights within the broader continuum of humanistic knowledge. They are expected to produce a dissertation (or equivalent creative work) that extends the scholarly conversation in their field.

#### *Key Skills and Competencies*

Humanities PhDs hone superior research and analytical skills alongside highly refined writing and communication abilities. They learn to gather and interpret diverse sources (archival documents, literary texts, historical records, etc.), often in multiple languages, and to present interpretations with clarity and persuasive reasoning. The American

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<sup>31</sup> Glazer, Nathan. 1974. “The Schools of the Minor Professions.” *Minerva*. 12: 346–364,

Historical Association, for example, emphasizes competencies for historians inside and outside academia, which go beyond traditional scholarship:

They are:

COMMUNICATION, in a variety of media and to a variety of audiences

COLLABORATION, especially with people who might not share your worldview

QUANTITATIVE LITERACY: a basic ability to understand and communicate information presented in quantitative form, i.e., understanding that numbers tell a story the same way words, images, and artifacts do

INTELLECTUAL SELF-CONFIDENCE: the ability to work beyond subject matter expertise, to be nimble and imaginative in projects and plans

DIGITAL LITERACY: a basic familiarity with digital tools and platforms.<sup>32</sup>

### *Attitudes and Values*

Humanistic scholarship instills intellectual curiosity, critical thinking, and a strong ethical sense regarding interpretation and context. Graduate students are encouraged to practice intellectual humility and openness—aware of the provisional nature of knowledge and receptive to new perspectives. By graduation, humanities PhDs are expected to be not only subject-matter experts but thoughtful, adaptable thinkers with a passion for lifelong learning. They also typically develop a sense of social responsibility, recognizing the role of humanities in promoting empathy, historical awareness, and civic values.

### *Artificial Intelligence*

While not traditionally central to humanities training, GenAI is an emerging topic in graduate education. Associations have begun to discuss GenAI's implications for research and teaching. For instance, the MLA has urged caution about over-reliance on AI text generation and detection, advising educators to focus on ethical use and critical evaluation of AI outputs. The emphasis is on AI literacy—humanities PhDs should understand how AI tools work (e.g. for textual analysis or translation) and use them responsibly as aids, not replacements, in research and writing.

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<sup>32</sup> American Historical Association, "The Career Diversity Five Skills," September 2016.  
<https://www.historians.org/resource/the-career-diversity-five-skills/>

The evolving view is that future scholars will collaborate with AI in tasks like data mining or language processing, requiring discernment and integrity. Humanities PhDs are increasingly expected to be conversant with new digital tools (including AI) while upholding the field's values of originality, attribution, and critical thought.

## Doctoral Degrees in the Social Sciences

### *Expected Knowledge and Scholarship*

Social science doctorates (e.g. in psychology, political science, economics, organizational psychology, program evaluation) aim to produce experts who can advance theoretical understanding and address complex societal questions through rigorous research. By completion, graduates are expected to have honed their analytical skills and mastered several fields within the discipline, demonstrating depth in their specialization and breadth across related areas. A defining goal is the ability to design and conduct independent research that yields new insights into human behavior, organizations, or social systems. As the American Political Science Association puts it, doctoral study places a premium on “intellectual creativity and independent thought,” such that graduates not only consume knowledge but “have a passion to pursue [their] fields of specialization and to impart [their] ideas” to others. In practice, PhD graduates in social sciences contribute through a dissertation that tests hypotheses, develops new theory, or provides data-driven evidence to inform policy and practice. They emerge with a systematic understanding of their field's foundational literature and an advanced methodological toolkit (quantitative, qualitative, or mixed methods) appropriate to their research questions.

### *Key Skills and Competencies*

Social science PhDs require strong methodological skills and the ability to apply them to real-world problems. Competency frameworks from major associations make this clear. For example, the American Psychological Association (APA)'s graduate training guidelines (especially for applied psychology) enumerate skills such as research design, statistical analysis, and evidence-based intervention, alongside competencies in ethical practice and multicultural awareness.

The American Evaluation Association (AEA), focusing on programs in evaluation science, defines core competencies in five domains that are echoed across many social science fields:

- *Methodology*: Mastery of research methods—from experimental designs and surveys to qualitative and mixed-method approaches—to ensure inquiries are systematic and evidence-based.
- *Professional Practice*: Understanding the role and responsibilities of a professional social scientist or evaluator, including adherence to disciplinary standards and ethics.
- *Contextual Knowledge*: Ability to situate research in context, recognizing how cultural, organizational, historical, and political factors affect both the phenomena studied and the use of research findings.
- *Project Planning and Management*: Skills in designing and managing research projects or evaluations—formulating questions, securing resources, meeting timelines, and adapting to challenges.
- *Interpersonal and Communication Skills*: The capacity to collaborate with colleagues, stakeholders, and research participants, and to communicate findings effectively to both expert and non-specialist audiences. This includes cultural competence and the ability to navigate group dynamics and conflicts constructively.

Across the social sciences, quantitative literacy and data analysis skills are heavily emphasized—economics PhDs, for instance, are expected to be proficient in advanced statistics and econometric modeling, while psychology PhDs might need skills in experimental design or psychometrics. Qualitative analysis (such as ethnography or case study methods) is critical in fields like anthropology, sociology, or education.

Social science doctoral programs also typically provide training in teaching (especially for those aiming at academia) and in grant writing and publishing to prepare students for professional research careers. Communication skills—writing clearly, presenting at conferences, and publishing in peer-reviewed journals—are fundamental, as graduates must join scholarly dialogues and often translate their research for policymakers or the public.

### *Attitudes and Values*

Social science PhDs are cultivated to be critical and objective thinkers, characterized by intellectual curiosity, skepticism of unsupported claims, and openness to empirical evidence. They must exercise intellectual honesty and ethical judgment, particularly when human subjects or sensitive social data are involved. Professional associations stress

values like integrity, accountability, and respect for diversity. For example, APA's benchmarks include behaving with integrity and adherence to ethical and legal standards, as well as demonstrating commitment to lifelong learning and self-improvement.

Social science researchers are trained to handle ambiguity and complexity—formulating judgments even with incomplete data, while being mindful of the social and ethical implications.

Qualities such as resilience and adaptability are important; graduate students learn to persist through research setbacks (e.g. experiments that fail, data that contradicts hypotheses) and to refine their approaches.

In fields like organizational psychology or education, there is also emphasis on leadership and collaboration, as graduates often lead research teams or work with organizations to implement changes. Indeed, many social science PhDs develop an aptitude for interdisciplinary collaboration, recognizing that real-world problems (from climate change to public health disparities) often require integrating knowledge from multiple fields. This calls for humility, flexibility, and a willingness to learn from peers in other disciplines.

### *Artificial Intelligence*

Artificial Intelligence and data science are increasingly intersecting with social science research, and doctoral programs are beginning to incorporate these tools. Students in fields like economics and psychology are using AI-driven analytics (for big data, textual analysis, simulations, etc.), so an emerging expectation is AI literacy—knowing how to use and critically evaluate AI methods relevant to one's research.

Equally important is the ability to address the ethical and societal implications of artificial intelligence. For instance, an education policy PhD might study algorithmic biases in school discipline software, or a communication PhD might examine misinformation spread by AI bots; such topics require both technical understanding and ethical reasoning.

Notions akin to “co-intelligence” are gaining traction. Rather than viewing GenAI as a threat, many professors are encouraging graduate students to treat GenAI as a partner in discovery that can augment human insight. In practice, social science PhDs may use generative GenAI to generate hypotheses, perform literature searches, or simulate data, but they are expected to do so responsibly, documenting their process and ensuring that human expertise guides the interpretation. Some programs now offer workshops on AI tools (e.g. using natural language processing in political science, or machine learning in

sociology) so that graduates are equipped for a data-rich, AI-augmented research environment.

In summary, facility with GenAI is fast becoming part of the desired skill set, with an emphasis on using these technologies to enhance critical thinking and human-centric analysis.

## Doctoral Degrees in Information Systems and Technology

### *Expected Knowledge and Scholarship*

PhD programs in Information Systems and Technology and related fields prepare graduates to advance the forefront of computing and information management. By graduation, students are expected to have mastered key theories and practices in information science and to have conducted significant original research in areas such as information management, data analytics, human-computer interaction, or emerging technologies. The curriculum is typically “human-centered” as well as technically rigorous, reflecting the interdisciplinary nature of the field. For example, Syracuse University’s School of Information Studies describes its doctoral program as blending digital technologies with human contexts, and notes that graduates will “demonstrate advanced competencies in both theoretical and methodological approaches to addressing complex information-related issues.” Upon completing the PhD, students have a comprehensive understanding of how information, people, and technology intersect across various contexts. They are also expected to contribute new knowledge—for instance, by developing a novel information system, creating a new data analysis technique, or producing empirically grounded insights on information use in organizations. A successful dissertation could range from designing an innovative algorithm to conducting ethnographic studies of information behavior, but in all cases it should push the boundaries of what is known in the information field.

### *Key Skills and Competencies*

Information Systems/Technology PhDs acquire a mix of advanced technical skills and research abilities, along with pedagogical and professional competencies. According to program outcomes from leading iSchools, graduates should have:

- **Expertise in IS/IT Theories and Practice:** A strong command of foundational and contemporary theories in areas like database design, information retrieval, systems analysis, and socio-technical systems, coupled with practical understanding of

computing technologies. They learn to link theory with practice, for example by applying information theory to improve real-world information system design.

- **Advanced Research and Analytical Skills:** Proficiency in research design and analytical methods, whether quantitative (statistics, machine learning, network analysis) or qualitative (user experience research, case studies). PhDs are trained to rigorously evaluate systems and technologies, often through experimental prototyping or data-intensive studies.
- **Interdisciplinary Problem-Solving:** The ability to draw from multiple disciplines—computer science, management, psychology, design, etc.—to tackle complex problems. Many programs highlight “multidisciplinary research skills” as essential, so graduates can integrate perspectives (e.g. combining insights from sociology and data science to address cybersecurity behavior).
- **Scholarly Communication and Dissemination:** Strong skills in academic writing and presentation, enabling graduates to publish in journals, present at conferences, and translate technical findings for varied audiences. Given the rapid evolution of technology, PhDs must also be adept at learning new tools and communicating the implications of emerging tech to both technical and lay communities.
- **Teaching and Mentoring:** Preparation for academic careers is often part of IS/IT PhD training. Programs provide opportunities to develop teaching skills and mentorship abilities—graduates learn how to convey complex technical concepts in the classroom and supervise projects, which is crucial if they become faculty.
- **Ethical and Responsible Research Practice:** With great power in technology comes great responsibility. PhDs in this field are expected to uphold high ethical standards in research (e.g. responsible data use, privacy protection, fairness in AI). Programs instill awareness of the societal impacts of technology and the importance of ethics in design. Syracuse’s program explicitly includes “ethical and responsible research practice” as a learning outcome for its PhDs. Graduates should be familiar with professional codes of ethics (such as ACM’s or IEEE’s) and be prepared to navigate issues like data bias or algorithmic accountability in their work.
- **Leadership in the Field:** Many information science PhDs go on to leadership roles in academia, industry, or government. Accordingly, programs encourage the development of leadership and innovation skills—the capacity to lead research

teams, manage large-scale projects, and anticipate future trends in technology. The goal is to produce graduates who are thought leaders driving the “future of information science,” able to set research agendas and influence practice.

### *Attitudes and Values*

Doctoral training in IS/IT cultivates adaptability, innovation, and a forward-looking mindset. Given the fast pace of technological change, students are encouraged to become lifelong learners who remain agile in updating their skillset. The Association to Advance Collegiate Schools of Business (AACSB) calls for a “learn-to-learn expectation” so that graduates can continuously adapt to emerging technologies. Intellectual curiosity and creativity are prized; the best doctoral students proactively explore novel ideas (for instance, experimenting with an unconventional approach to information retrieval) and show resilience when experiments fail.

Collaboration is also a valued attitude—large information systems projects often require teamwork, so being open to interdisciplinary collaboration and possessing good teamwork skills are important. PhD students often work in lab groups, contributing to a culture of peer learning and co-creation.

They are also expected to have a strong user-centric ethic—an appreciation for how technology serves people. This often translates into an attitude of empathy (considering end-user needs in system design) and responsibility (recognizing the societal implications of one’s technological innovations).

Adaptability, problem-solving orientation, and a bias for innovative thinking (“outside-the-box” solutions) define the successful mindset in this field.

### *Artificial Intelligence*

It is natural that PhDs in information systems and technology are at the forefront of engaging with GenAI. Many programs now incorporate AI both as a research subject and a research tool. Graduates are expected to understand advanced AI techniques (like neural networks, large language models, etc.) and often to contribute to AI development or its applications. AI literacy is essentially assumed in this field—doctoral students might develop new AI algorithms or use AI to analyze big datasets.

Moreover, they are trained in the responsible use of AI, often grappling with questions of AI ethics, bias, and alignment. For example, a PhD student in information science might research ways to make AI systems more transparent or to improve human-AI collaboration

(the very notion of “co-intelligence”). Indeed, there is an emerging expectation that IS/IT PhDs become experts in human-AI interaction, learning how to design systems where humans and AI work together effectively. This includes understanding the limitations of GenAI—recognizing when an AI’s output may be flawed or biased—and developing interfaces or protocols that allow human oversight. In their own workflows, students are likely to leverage AI assistants for coding, data mining, or literature review, but always with a critical eye.

Graduates are expected to graduate having knowledge of the state-of-the-art AI tools and possessing the meta-skill of quickly learning and evaluating new technologies. In sum, a PhD in this area will be well-versed in AI both theoretically and practically, and will approach it as a powerful component of the information ecosystem—to be advanced, harnessed, and governed with care.

## Doctoral Degrees in Business (PhD in Management/Business Administration)

### *Expected Knowledge and Scholarship*

PhD programs in business (including specializations in management, finance, marketing, accounting, or information systems) are research-focused degrees designed to produce scholars who advance knowledge in business and management and, in many cases, become faculty at business schools. By the end of the program, graduates are expected to have deep expertise in their area of specialization and a strong grasp of the broader context of business disciplines. According to AACSB (the main accrediting body for business schools), a doctoral program should impart “an understanding of the specialization context” as well as advanced research skills.

The hallmark of a business PhD is the ability to conduct rigorous research that often blends theory and practice—for instance, developing a new theory of consumer behavior, or empirically analyzing how financial markets respond to policy changes. Graduates must conceive and execute a substantial research project (the dissertation) that makes an original contribution to their field. They should also appreciate the practical implications of research: AACSB notes that doctoral programs include “an appreciation for the production of research that contributes positively to society.” In other words, PhD graduates in business are trained not only to push theoretical frontiers but also to consider how their findings can impact industries, economies, and society at large.

## *Key Skills and Competencies*

A business PhD instills a suite of high-level competencies:

- *Advanced Research Methods:* Business doctoral students receive extensive training in research methodology relevant to their field. This could mean econometric analysis and causal inference for a finance or economics-focused PhD, experimental design and survey methods for a marketing or organizational behavior PhD, case study and qualitative methods for certain management research questions, or often a combination of quantitative and qualitative techniques. The ability to rigorously analyze data—be it large financial datasets, interview transcripts from organizations, or experimental data on human decision-making—is fundamental.
- *Theoretical and Contextual Knowledge:* PhD students develop deep theoretical knowledge in their specialization. They also understand how their specialization fits into the wider business context. AACSB highlights that doctoral curricula include a contextual understanding—for instance, a PhD in operations might also grasp strategic management context or global supply chain issues. This breadth ensures that when they tackle a research problem, they see the bigger picture (how a finding in one domain might inform another, or how global trends affect their niche).
- *Teaching and Academic Skills:* Since many business PhDs aim for academic careers, programs often provide training in teaching at the college level. AACSB explicitly notes that doctoral programs preparing academics devote significant time to developing “successful classroom instruction and management” skills [aacsb.edu](https://www.aacsb.edu). They also gain skills in academic writing and in navigating the publication process. These professional skills enable them to function as effective faculty members post-graduation.
- *Leadership and Collaboration:* Doctoral candidates often work closely with faculty and fellow PhDs on research teams. They develop skills in coordinating large research projects and multi-author studies. Many also learn mentorship skills by supervising MBA or undergraduate student projects. This collegial, collaborative training means graduates can lead research initiatives and work well in academic or industry research teams.
- *Analytical and Strategic Thinking:* Business research often involves complex, unstructured problems (e.g., why are certain firms more innovative than others?). PhD training sharpens one’s ability to break down such problems analytically and to

think strategically about solutions. Graduates become comfortable with abstract reasoning and model-building, often employing formal theory or strategic frameworks. AACSB notes that even at the master's level, business education fosters "creative thinking, sound decision-making under uncertainty, and integrating knowledge across fields." At the PhD level, these cognitive skills are expected at an even higher order: graduates can tackle ambiguous management problems, apply cross-disciplinary knowledge (say, using psychology in marketing research, or economics in strategy), and generate novel insights.

- *Communication and Persuasion*: Effective communication is a critical skill, as PhD graduates must disseminate their research to varied audiences—academic peers, students, and practitioners. They learn to write scholarly papers and also to translate their findings into teaching materials or publications for practitioners. Many business PhDs are encouraged to make their research accessible to industry (e.g., through white papers or consulting reports), so being able to articulate complex analyses in plain language is valued.

### *Attitudes and Values*

PhD alumni often describe their training as learning "how to think" like a researcher—systematically, skeptically, and creatively—rather than just absorbing a body of knowledge.

The business PhD journey shapes scholars who are inquisitive, disciplined, and impact-oriented. Intellectual curiosity and a drive for discovery are essential—students must be willing to delve deeply into narrow topics and persist for years to uncover new knowledge. They also develop intellectual courage: willingness to challenge conventional wisdom in their field and propose alternative theories or conclusions, backed by evidence. Given the iterative nature of research, resilience is key; business PhDs learn to cope with setbacks like rejected papers or experiments that don't yield expected results, treating them as learning experiences.

Ethical responsibility is a significant attitude instilled during doctoral training. Whether it's honesty in reporting data, fairness in authorship, or considering the ethical implications of research on business practices, PhDs are expected to uphold professional integrity. Many business schools infuse discussions of research ethics and social responsibility, echoing the idea that research should ultimately "contribute positively to society."

Another key disposition concerns lifelong learning. AACSB standards mention that schools should instill a "lifelong learning mindset in learners, including creativity, intellectual

curiosity, and critical and analytical thinking.” This mindset includes adaptability to new research tools and paradigms.

### *Artificial Intelligence*

Artificial intelligence is already influencing business research and education. Doctoral graduates in business are expected to be aware of how AI and machine learning can be applied in their domain (be it for predictive analytics in marketing or analyzing big data in finance). Graduates should appreciate the strategic implications of AI for business organizations. Many business PhD programs now include coursework or seminars on computational methods and AI. For example, a marketing PhD might learn about algorithms for personalization, or a management PhD might study AI’s impact on workforce dynamics.

There is also a growing expectation that graduates will be able to utilize AI tools in their own research workflows—from automating parts of data analysis to using natural language processing for text analysis in management research. At the same time, they must approach such tools critically and ethically, understanding issues like algorithmic bias or data privacy.

AACSB guidelines encourage that “current and emerging technology is appropriately infused” throughout the curriculum. This implies that a new PhD in business should be comfortable learning an AI-based analytical tool on the fly and evaluating its usefulness.

In terms of attitudes, there is evidence that employers and academia alike value both AI literacy and also human judgment in business graduates, but. A 2024 survey of corporate recruiters found that while most employers were “not too concerned” about AI skills in current MBA/PhD graduates, they expected the importance of AI expertise to grow soon. This underlines that doctoral graduates with GenAI competence (what Chapter 3 calls GenAI-augmented capabilities) will be at an advantage. Business PhDs should be prepared to lead in an era where analytics and AI can enhance strategic decision-making and organizational research. In practice, this might mean a PhD in operations management using machine learning to optimize supply chains, or an information systems PhD studying how AI adoption changes firms.

Business schools have begun piloting “AI in business” initiatives. For example, MIT Sloan is training both professors and PhD students about GenAI applications in management education.

Ultimately, the role of GenAI is seen as a powerful amplifier for research and teaching in business. Doctoral graduates will leverage AI to generate insights faster and tackle previously intractable problems, while providing critical oversight and strategic thinking.

## Doctor of Public Health (DrPH)

### *Expected Knowledge and Purpose*

The Doctor of Public Health (DrPH) is a terminal professional doctorate in public health, oriented toward developing public health leaders and practitioners as well as scholars. Graduates are expected to have an interdisciplinary public health skillset that enables them to advance public health practice, policy, and leadership. Unlike the research-focused PhD in Public Health, the DrPH emphasizes real-world public health challenges. DrPH candidates typically enter with prior public health experience, and their doctoral education builds on that practical foundation with advanced training in public health science and management. Graduates are expected to integrate knowledge from the traditional core areas of public health (epidemiology, biostatistics, environmental health, health policy/management, social and behavioral sciences) and demonstrate an ability to translate scientific knowledge into effective public health interventions and policies. A culminating doctoral project often addresses a complex public health issue—for example, designing and evaluating a community health program, or conducting a policy analysis to inform national health strategy—with a focus on actionable recommendations.

### *Key Skills and Competencies*

The DrPH competency model, as articulated by ASPPH, is organized into seven overarching domains of skills that every DrPH graduate should have:

- *Advocacy:* The ability to influence decision-making processes in public health through evidence-based advocacy. DrPH graduates learn to champion public health causes, craft persuasive arguments for policy change, and engage with stakeholders and communities to advance health initiatives. This might include skills like policy brief writing, legislative testimony, media communication, and community organizing—all rooted in scientific evidence and ethical reasoning.
- *Communication:* Mastery in health communication, including assessing audiences and deploying appropriate communication strategies to disseminate public health information and research findings. DrPH students practice communicating with diverse stakeholders—from community members to policymakers to other health

professionals—using clear, culturally competent messaging. Whether it's risk communication during a pandemic or health education campaigns, DrPH grads can translate complex health data into understandable and actionable messages.

- *Community/Cultural Orientation:* The capability to work effectively with diverse communities and cultures, recognizing and respecting cultural contexts in public health practice. This entails skills in community engagement, participatory research, and tailoring interventions to fit cultural norms and needs. DrPH graduates are trained to “communicate and interact with people from diverse communities, nationalities, and cultures,” which is crucial for implementing programs in multicultural settings and addressing health disparities with cultural sensitivity.
- *Problem Solving:* DrPH students are taught to approach public health challenges with a problem-solving mindset: defining the problem, analyzing causes and consequences, and formulating evidence-based solutions. This competency overlaps with skills in policy analysis and in epidemiology.
- *Leadership:* The skill to create a shared vision, inspire and motivate others, and drive organizations or collaborations toward improved health outcomes. Leadership training is a cornerstone of the DrPH. Students often receive education in organizational leadership, strategic management, negotiation, and team-building. A DrPH graduate should be able to lead a health department, direct an NGO, or coordinate inter-sectoral partnerships, all while exemplifying ethical leadership and emotional intelligence. As ASPPH puts it, the goal is “to create and communicate a shared vision, inspire trust, and motivate others to achieve higher goals” in service of public health.
- *Management:* Competence in the managerial and operational aspects of public health organizations and initiatives. This includes strategic planning, human resources management, budgeting and financial management, project management, and quality improvement processes in health programs. DrPH programs often include courses akin to an executive MBA but for health contexts—teaching how to run programs efficiently and effectively.
- *Professionalism and Ethics:* A grounded ability to identify and navigate ethical issues in public health and to act with integrity and respect for the rights and values of populations. DrPH graduates receive training in public health ethics, law, and policy. They learn to balance individual rights with population health (for instance,

in vaccination mandates or quarantine decisions), and to uphold principles such as health equity and social justice. The ASPPH competency model highlights “the ability to identify, discuss, and analyze an ethical issue, and balance the claims of personal liberty with the responsibility to protect the health of a population.” This competency ensures that DrPH professionals hold themselves to high professional standards and serve as role models in the field.

Collectively, these competencies enable DrPH graduates to operate at high levels of public health leadership. They are sometimes described as scholar-practitioners. For example, rather than doing bench science, a DrPH might supervise teams of technical experts (epidemiologists, statisticians, health educators) to implement a multifaceted public health intervention. Their breadth of knowledge suits them for roles like Health Department Director, Public Health Consultant, or Global Health Program Manager. Many DrPH programs also incorporate real-world projects to make sure graduates have hands-on experience.

### *Attitudes and Values*

DrPH training seeks to instill public service commitment, systems thinking, and a collaborative ethos. Graduates typically have a passionate dedication to improving population health and reducing inequalities. They view health issues through a systems lens, understanding that solutions require coordination across sectors (healthcare, education, housing, etc.) and engaging multiple stakeholders. This systems perspective breeds an attitude of interdisciplinary openness—DrPH leaders are willing to work with clinicians, policymakers, community activists, and others, recognizing that complex health problems (like pandemics or chronic disease epidemics) can only be solved through collective effort.

A hallmark disposition of DrPH grads is intellectual humility combined with confidence in leadership. They must be receptive to community knowledge and alternative viewpoints (for example, valuing indigenous knowledge in community health), reflecting humility. Simultaneously, they need the confidence to make tough decisions and to persuade others to act on evidence-based recommendations—essentially an attitude of “humble authority.” They also tend to be resilient and adaptive, as public health challenges often involve crisis management (hurricanes, disease outbreaks) and evolving information.

Ethical mindfulness and social justice orientation are deeply ingrained. DrPH graduates often see themselves as advocates for the underserved; they approach their work with compassion and a focus on equity. The advocacy competency implies they have a sense of

urgency and responsibility to use their voice and expertise to drive positive change. They also value accountability—both personal (holding oneself to high standards) and organizational (ensuring programs are evaluated and effective).

Finally, an attitude of continuous improvement and learning is common. Public health is a dynamic field (as the COVID-19 pandemic demonstrated), so DrPH professionals remain curious and update their knowledge on new health threats, technologies (like genomic epidemiology or health informatics tools), and best practices. Many embrace mentorship roles, training the next generation of public health workers, which reflects an altruistic and forward-looking mindset. In essence, by the end of a DrPH program, graduates see themselves not just as experts, but as change-agents and coalition-builders who carry a moral commitment to improving the public's health.

### *Artificial Intelligence*

In public health practice and research, GenAI is an emerging tool with significant promise—and DrPH graduates are expected to be conversant with such innovations. AI can assist in analyzing large health datasets, predicting disease outbreaks, optimizing resource allocation, and tailoring health communications. Therefore, an GenAI-literate DrPH would know how to leverage tools like machine learning models for epidemiological analysis or use natural language processing to scan social media for health misinformation trends. Some DrPH programs, especially recently, have begun incorporating data science and informatics into their curricula (often under the “communications and informatics” domain of MPH/DrPH competencies). This ensures graduates appreciate how to use data-driven tools, including AI, in designing and evaluating public health interventions.

However, the emphasis for DrPH is on using AI responsibly and equitably. Public health professionals must ask: does an GenAI model have biases that could exacerbate health disparities? Are GenAI-driven tools accessible to low-resource communities? DrPH graduates, with their training in ethics and cultural competence, are well placed to critically assess AI applications. For instance, if a GenAI is used to create health education materials, a DrPH leader would ensure those materials are culturally appropriate and accurate, and that communities are involved in the design process. They also champion transparency—if AI is used in public health decision-making (like allocating vaccines), explaining the rationale to the public is key to maintaining trust.

The concept of co-intelligence is pertinent in public health. DrPHs are taught to use GenAI as a colleague, not a crutch. During the COVID-19 response, for example, AI was used to model transmission scenarios, but human experts (public health officials) interpreted

those models to implement policy. That synergy is likely to continue. GenAI might help draft policy briefs or simplify technical findings for the public, but DrPH professionals will review and refine this output, ensuring accuracy and empathy.

In summary, while the DrPH competency framework was established before the recent GenAI surge, its emphasis on informatics and analysis suggests that GenAI and data science are now part of the expected toolkit for advanced public health practitioners. Graduates should be able to understand and collaborate with data scientists, supervise the ethical use of AI in public health projects, and perhaps most importantly, innovate by incorporating new technologies into public health strategy while keeping the focus on human well-being and social good.

## Professional Master's Degrees: MBA and MPH

Professional master's programs are oriented toward practical skills and applied knowledge in contrast to the research emphasis of PhDs. We examine two key professional degrees—the Master of Business Administration (MBA) and the Master of Public Health (MPH)—outlining their expected outcomes in terms of skills, competencies, attitudes, and any evolving expectations (such as AI literacy).

### Master of Business Administration (MBA)

#### *Purpose and Knowledge Base*

The MBA is a broadly-focused professional degree intended to prepare graduates for leadership and management roles in business, government, or nonprofit sectors. By graduation, MBA students are expected to have a firm grasp of core business disciplines—typically including accounting, finance, marketing, operations, strategy, and organizational behavior. MBA curricula are often designed to be integrative, showing students how these functional areas interrelate in real business scenarios. For example, an MBA grad should understand how a marketing strategy might impact operations or how financial metrics reflect strategic success. As AACSB notes, a general business master's (like an MBA) “ordinarily include[s] preparation for leading an organization, managing in a global context, thinking creatively, making sound decisions and exercising good judgment under uncertainty, and integrating knowledge across fields.” This succinctly captures the MBA's knowledge and skill mandate: breadth across business functions, strategic and global awareness, and the ability to navigate uncertainty with well-founded decisions.

## *Key Skills and Competencies*

MBA programs explicitly focus on developing practical management skills and competencies that employers expect MBA graduates to possess. Common learning goals (as set by accrediting bodies like AACSB or defined by schools) include:

- *Leadership and Teamwork:* MBA graduates should be able to lead teams effectively and work well in collaborative settings. This involves skills in motivation, conflict resolution, delegation, and fostering an inclusive team culture. Many programs use group projects and leadership labs to hone these skills. An MBA is often seen as a leadership credential; accordingly, graduates are trained to take initiative, project confidence, and guide others toward common goals.
- *Strategic Thinking and Analytical Problem-Solving:* MBAs learn to assess complex business environments, analyze data, and formulate strategic plans. Case study pedagogy (famously used at Harvard Business School and elsewhere) places students in the role of decision-makers, forcing them to practice diagnosing problems and evaluating alternatives. They develop strong quantitative analytical skills (e.g. financial analysis, data analytics) as well as qualitative analysis (e.g. SWOT analysis, competitive strategy). Creative thinking is encouraged so that graduates can innovate in solving business challenges.
- *Decision-Making under Uncertainty:* Business is rife with uncertainty (market fluctuations, emerging competitors, crises). MBA training frequently uses simulations and scenario analysis to teach students how to make decisions with incomplete information and to assess risk. The aim is to produce managers who can exercise “sound judgment under uncertainty”—balancing intuition with analysis and being willing to make timely decisions without having perfect data. Techniques from decision analysis and risk management are often part of the curriculum.
- *Communication Skills:* Effective communication is critical for managers. MBA students practice clear and persuasive business communication, from writing concise executive memos to delivering compelling presentations. Programs often include courses or modules on business writing, public speaking, and even interpersonal communication (crucial for negotiation or performance feedback situations). By graduation, an MBA should be able to communicate complex business ideas to stakeholders ranging from frontline employees to boards of directors.

- *Global and Cultural Competence:* Modern MBA programs acknowledge the global nature of business. Graduates are expected to understand how to operate in a multicultural and international environment. This competency is cultivated through coursework in international business, study-abroad opportunities, or diverse classroom cohorts. They learn about global market dynamics, cross-cultural management, and may develop proficiency in understanding international financial systems or trade regulations. The goal is a manager who can “manage in a global context” and appreciate cultural differences in business practices.
- *Ethics and Corporate Social Responsibility:* In the wake of corporate scandals and the rising emphasis on sustainable business, MBA programs place importance on ethical reasoning and socially responsible management. Students confront ethical dilemmas in case discussions and are taught frameworks for ethical decision-making. Many programs have adopted mission statements about creating values-driven or principled leaders. MBA graduates should be conversant in topics like corporate governance, business law, and stakeholder theory, enabling them to align business goals with ethical and societal considerations.
- *Functional Expertise and Integration:* While the MBA is broad, graduates often develop particular strengths (via concentrations or electives) in areas such as finance, marketing, or supply chain. Regardless of specialization, they must demonstrate competence in each core area and the ability to integrate them. For instance, an MBA should know how a change in operations might affect the financial statements or how human resource practices can support a strategic plan. This integrative ability is frequently assessed through capstone projects or simulations that mimic running an entire enterprise.

### *Attitudes and Values*

The MBA cultivates a professional managerial mindset. Graduates are often characterized by a “can-do” attitude, confidence, and a results-oriented approach. They are trained to be entrepreneurial and proactive—seeking opportunities, taking calculated risks, and driving innovation. Adaptability is another valued trait, as business conditions evolve rapidly; successful MBAs are those who are open to change and continuous learning (hence the inclusion of lifelong learning mindset in many MBA outcomes).

Team orientation and collaborative spirit are ingrained through the cohort experience of an MBA. Students often develop a strong network and learn that collaboration can achieve more than isolated effort. This goes hand in hand with leadership ethos—an expectation to

step up and take responsibility. Many MBAs embrace a mindset of ownership: treating the business as if it were their own and demonstrating accountability for outcomes.

Ethically, an MBA is expected to internalize principles of honesty, integrity, and fairness. Accrediting bodies have encouraged schools to integrate ethics and sustainability, so graduates carry an attitude that long-term business success must consider people, planet, and profit (the triple bottom line). Anecdotally, Peter Drucker's maxim "doing well by doing good" resonates more with today's MBAs than in previous generations, reflecting a disposition to align business performance with positive social impact.

Another important attitude is analytic skepticism. MBA training in data and evidence fosters a habit of asking for the numbers or the factual basis behind proposals. Graduates tend to be skeptical of unsupported claims and rely on analysis, but also know when to trust their managerial intuition built from experience and case practice.

Finally, MBAs often exude confidence and decisiveness. The classic notion of "executive presence"—communicating confidence and clarity even amid uncertainty—is something MBA programs implicitly cultivate (through those countless presentations and cold-calls in class). However, programs also stress reflection and self-awareness as part of leadership development, encouraging students to know their strengths, weaknesses, and values. This blend of confidence with self-awareness ideally produces principled, adaptive leaders rather than arrogant ones.

### *Artificial Intelligence*

The business world is rapidly adopting AI for various functions (marketing analytics, financial forecasting, supply chain optimization, HR recruitment tools, etc.), so MBA programs and graduates are keeping pace. An MBA graduating today is increasingly expected to have a baseline understanding of AI's business applications and limitations. This might include familiarity with concepts like machine learning, predictive analytics, and AI-driven decision support systems. Many MBA programs now include coursework on data analytics or technology management that covers AI case studies.

MBA graduates should be able to work with technical teams and interpret AI-driven insights for strategic decision-making. For example, an MBA in marketing should understand how an AI recommendation engine works enough to make informed decisions about customer targeting strategies. Importantly, they should also question AI outcomes—applying their critical thinking to ask if an algorithm's suggestion truly makes business sense and is

ethically sound (for instance, avoiding AI-generated price discrimination that could harm consumers or brand reputation).

Business schools themselves are integrating GenAI in pedagogy and operations. Some are experimenting with co-designing assignments with GenAI, using GenAI teaching assistants, or developing proprietary GenAI tools for student support. This exposure means MBAs might graduate having used ChatGPT or similar tools in their coursework (with guidance on responsible use), which demystifies the technology.

AI literacy for MBAs entails understanding the strategic implications of AI: knowing how automation might change an industry's value chain, or how AI can unlock new business models. Graduates are asked to consider questions like "How will AI and robotics disrupt our workforce and how should leadership respond?" or "In what ways can AI enhance customer experience, and what are the data privacy trade-offs?" Thus, an MBA is not expected to code an AI algorithm from scratch, but should be ready to lead projects involving AI and to incorporate AI considerations into high-level planning.

There is also a career incentive: employers increasingly value managers who can harness AI. MBAs who can demonstrate comfort with AI tools and data-driven decision-making stand out. Many programs encourage students to earn certificates or take electives in business analytics, often overlapping with AI techniques.

In terms of attitude, MBAs are encouraged to view AI not as a threat to their roles but as a tool for *augmenting* human decision-making. The concepts of co-intelligence and GenAI augmented labor are applicable: the best outcomes arise when human strategic thinking and ethical judgment combine with AI's data processing power. For example, an MBA-trained supply chain manager might use an AI demand forecasting system, but will apply human judgment to adjust for unforeseen factors and to communicate decisions across the company. MBA curricula stress the continuing importance of soft skills (leadership, creativity, negotiation)—areas where human managers excel and AI cannot replicate easily. Therefore, the presence of GenAI in the business toolkit reinforces, rather than diminishes, the need for the holistic skillset MBAs acquire (from people management to creative strategy).

In summary, the 21st-century MBA is expected to be both tech-savvy and people-savvy. They leave with the ability to leverage cutting-edge tools like GenAI responsibly, all while leading teams, crafting strategy, and making judgment calls that align with ethical and organizational values. The fusion of traditional MBA leadership training with new-age digital

acumen defines the evolving profile of MBA graduates in an AI-enabled business landscape.

## Master of Public Health (MPH)

### *Purpose and Knowledge Base*

The Master of Public Health is the flagship professional degree in public health, aimed at equipping graduates with the knowledge and skills to improve population health and prevent disease. By graduation, an MPH student is expected to have a broad understanding of the core domains of public health and often specialized expertise in one area of concentration. The five traditional core knowledge areas of public health—Biostatistics, Epidemiology, Environmental Health Sciences, Health Policy and Management, and Social & Behavioral Sciences—form the foundation of MPH training. Students take introductory and intermediate courses in each, ensuring they can understand and contribute to multidisciplinary public health efforts. For instance, an MPH should understand epidemiological study designs, basic statistical analysis, principles of environmental toxicology, the structure of health care systems and policy, and theories of health behavior change. In addition to these, MPH programs cover emerging topics like global health, public health biology (e.g. infectious disease biology), and informatics. The Association of Schools and Programs of Public Health (ASPPH) states that an MPH graduate should demonstrate a “firm grasp of core content” across these domains.

Most MPH students also specialize (e.g. in epidemiology, health policy, maternal and child health, nutrition, etc.), gaining deeper knowledge in that field. However, even in specialization, the emphasis is on applied knowledge—understanding current issues and best practices in that area rather than purely theoretical depth. The curriculum is often interdisciplinary and problem-based, reflecting public health’s orientation toward solving real health problems in communities.

### *Key Skills and Competencies*

The education of an MPH is competency-driven. Key competencies include:

- *Epidemiological and Analytical Skills:* Ability to collect, analyze, and interpret health data. MPH grads learn to calculate disease rates, identify risk factors, and evaluate associations in health data. They can design surveillance systems and conduct outbreak investigations. Biostatistics training enables them to perform and interpret

statistical tests, use statistical software, and critically review research literature. These skills underpin evidence-based public health practice.

- *Program Planning and Evaluation:* The capacity to plan, implement, and assess public health programs is fundamental. This involves needs assessment, setting measurable objectives, designing interventions (be it a community health education campaign or a vaccination drive), and then evaluating outcomes and processes. Competencies in this area include applying theories of change, using logic models, and employing qualitative and quantitative evaluation methods. By graduation, an MPH should be able to contribute to or lead the development of a public health intervention and systematically determine its effectiveness.
- *Policy Development and Management:* MPH graduates are trained to understand and influence health policy. This includes competency in policy analysis—identifying policy options to address health issues, assessing the pros/cons and health impact of those options, and understanding the policymaking process. They also learn management skills relevant to health services: budgeting, strategic planning, human resources, and operations of health programs. Skills such as conducting a cost-benefit analysis of a health policy or managing a public health emergency response fall in this domain.
- *Communication:* Strong communication skills, both oral and written, tailored to diverse audiences. MPHs learn to communicate health information effectively to the public, to media, and to policymakers. This might be writing policy briefs, creating infographics for community outreach, or doing media interviews about health risks. Clear, culturally sensitive communication is critical, especially in risk communication during health crises.
- *Cultural Competence and Community Engagement:* The ability to work respectfully and effectively with communities of different backgrounds. MPH programs stress “community and culture” competencies: recognizing how culture impacts health behaviors and outcomes, and ensuring that programs are culturally tailored. Graduates learn techniques for engaging community stakeholders, conducting community-based participatory research, and addressing health disparities by taking into account social and cultural determinants of health.
- *Leadership and Systems Thinking:* While perhaps not as prominently emphasized as in the DrPH, MPH programs do include leadership training. Students are taught to understand how different factors and players interact in the health system.

Competencies in “systems thinking” prepare them to identify leverage points in complex problems. Leadership competencies might involve team coordination, advocacy, and ethical decision-making in health contexts.

- *Professionalism and Ethics*: MPHs adhere to principles of professional ethics, including maintaining confidentiality, obtaining informed consent in public health research, and upholding principles like equity and justice. They learn about ethical issues like balancing individual rights vs. community health (e.g., quarantine laws) and are expected to commit to values such as integrity, accountability, and respect for diverse values and beliefs.

The Council on Education for Public Health (CEPH), which accredits MPH programs, mandates that students demonstrate a set of foundational competencies (22 as of the 2016 accreditation criteria) that map closely to what’s described above. These include competencies in systems thinking, leadership, communication, interprofessional teamwork, and more, alongside the scientific skills. Additionally, many programs incorporate an internship and a capstone or thesis to ensure students can apply their skills in real-world settings. Employers to be able to design and implement evidence-based public health projects immediately post-graduation.

### *Attitudes and Values*

Public health as a field is deeply rooted in values of equity, social justice, and compassion. MPH graduates typically carry a strong commitment to improving community health and reducing disparities. There is an ethos of service—many enter the field with a desire to be agents of positive change for marginalized or vulnerable populations. As such, humility and cultural respect are important attitudes; MPHs must be willing to listen and learn from the communities they serve, rather than impose one-size-fits-all solutions.

Collaboration is another ingrained disposition. Public health is inherently interdisciplinary and multi-sectoral (the oft-quoted line is “public health is a team sport”). MPH students do a lot of group work and community partnership building, which fosters an appreciation for teamwork and collective action. They learn to value the contributions of different professions (hence the Interprofessional Education collaborative efforts). A typical MPH graduate is comfortable collaborating with, say, epidemiologists, nurses, social workers, urban planners, and community leaders, recognizing that each brings essential perspectives to a health issue.

Data-driven pragmatism is a notable attitude: MPHs are taught to follow the evidence, but also to be pragmatic in implementing solutions. They often have to balance ideal scenarios with real-world constraints (limited budgets, political realities), so they cultivate flexibility and problem-solving resilience. The motto “don’t let the perfect be the enemy of the good” often applies—an attitude of doing the best with what is feasible, while striving to improve conditions incrementally.

Ethically, MPHs take seriously the concept of “doing no harm” and maximizing benefits for communities. Integrity in data reporting, transparency with communities, and honesty in acknowledging uncertainties are stressed. They are also typically strong advocates for human rights and health as a human right, influencing how they approach policy and programming (for example, defending access to healthcare or clean water as fundamental rights).

MPH graduates also tend to have a sense of urgency balanced with patience. Urgency, because public health crises (like outbreaks or rising chronic disease rates) demand swift action and passionate advocacy. Patience, because many public health victories (e.g., reducing smoking rates, improving air quality) take years or decades and require persistence and sustained effort. This long-term perspective is an important disposition—knowing that one’s work is part of a larger continuum of improving health over time.

Finally, a lifelong learning orientation is common, as public health is an evolving field (new diseases emerge, new research alters best practices). Good MPH programs encourage graduates to keep learning (through continuing education, reading journals, etc.). In practice, MPHs who enter the workforce often continue to update their knowledge on new public health guidelines, technologies (like GIS mapping or statistical software), and policy developments. This aligns with the broader attitude in healthcare professions of continuous quality improvement.

### *Artificial Intelligence*

In the realm of public health, GenAI and advanced analytics are burgeoning tools, and MPH graduates are starting to engage with them in various ways. Data is the lifeblood of public health (think of the vast epidemiological data from disease surveillance, or behavioral data from health surveys). AI can assist in recognizing patterns or predicting trends from these complex datasets.

For example, AI algorithms might help predict outbreak hotspots (as was attempted with COVID-19 using mobility data), or identify subtle correlations in social determinants of

health. MPH programs with an eye to the future are introducing students to health informatics and data science concepts.

GenAI specifically could be used to, say, generate health education content tailored to specific literacy levels or languages, or to automate aspects of data cleaning and report generation. An MPH with AI literacy might use a tool like ChatGPT to draft a community health needs assessment summary, then refine it with human expertise. They might also evaluate GenAI-driven health apps or telehealth bots for quality and cultural appropriateness.

However, public health professionals are—as always—cautious about equitable and ethical use. One major concern is bias and fairness: if an AI is trained on health data that lack representation of certain groups, its predictions or recommendations could be skewed. MPH graduates are taught to be vigilant about such issues, which ties into their competencies in ethics and cultural competence. They might ask: Does a GenAI symptom-checker work as accurately for a rural low-income population as for an urban affluent one? If not, what are the implications for health equity?

Another relevant area is misinformation. GenAI can unfortunately produce misleading information as well as beneficial content. Public health grads are on the frontlines of combating health misinformation (e.g., vaccine myths on social media). Understanding how GenAI might generate or amplify false narratives (deepfakes, automated bots) is becoming important. Conversely, they might use GenAI to detect misinformation patterns online and respond with targeted factual campaigns.

In terms of expectations, while not every MPH is currently expected to be an AI expert, there is a clear trend towards expecting competency in public health informatics. CEPH's accreditation requires MPH students to be able to “apply informatics in the context of public health”—which can include using tools that incorporate AI. For instance, an MPH specializing in epidemiology might use an AI-based predictive modeling tool during an internship at a health department. Or an MPH in health communication might use social media analytics powered by AI to guide a campaign.

The concept of co-intelligence applies here too: combining human public health insight with AI's processing power. A human epidemiologist understands disease patterns, while AI can crunch through millions of data points—together, they can identify an outbreak faster than either alone. The MPH grad of today is expected to appreciate this synergy.

One can imagine in the near future that “AI in Public Health” becomes a staple course or module. Already, during the COVID-19 pandemic, many public health students saw how

data dashboards and predictive models (some GenAI-driven) became central to public messaging and decision-making. Those students, now graduates, carry forward an expectation that technology and data will be integral to their careers.

Finally, an attitude being encouraged is to embrace innovation but remain community centered. GenAI is a powerful innovation; MPH grads should be open to adopting it when it enhances reach or efficiency (e.g., chatbots for answering public health FAQs can free up personnel time). But they must ensure these technologies do not widen disparities (for example, only accessible to those with smartphones) or erode the personal trust which is often crucial in public health interventions. The responsible use of AI—aligning with principles of transparency, equity, and effectiveness—is likely to become a competency in its own right for future public health practitioners.

## International Frameworks and Influential Benchmarks

Graduate education expectations are not only shaped by disciplinary associations and professional bodies, but also by international frameworks and historic formulations of educational ideals. Two significant international reference points are the Bologna Process in Europe (with its Dublin Descriptors for degree qualifications) and the UK Quality Assurance Agency (QAA) benchmarks. Understanding these provides a broader perspective on what graduate degrees aim to achieve globally and philosophically.

### *Bologna Process and Dublin Descriptors*

The Bologna Process harmonized higher education across 49 European countries, introducing a framework of three “cycles” (bachelor’s, master’s, doctorate) with shared descriptors of learning outcomes (the Dublin Descriptors). These descriptors articulate in a broad but canonical way the competences a graduate of each cycle should possess, and they closely mirror the ideals upheld in the U.S. and elsewhere.<sup>33</sup> For the master’s level (second cycle), the Dublin Descriptors state that graduates should: have demonstrated knowledge and understanding that extends and/or enhances that of the bachelor’s level, often with originality in applying ideas; can apply their knowledge and problem-solving abilities in new or multidisciplinary contexts; can integrate knowledge and handle complexity, formulating judgments with incomplete data, including reflecting on social and

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<sup>33</sup> Shared ‘Dublin’ descriptors for Short Cycle, First Cycle, Second Cycle and Third Cycle Awards, 2004.  
[https://www.aqu.cat/doc/doc\\_24496811\\_1.pdf#:~:text=,of%20which%20merits%20national%20or](https://www.aqu.cat/doc/doc_24496811_1.pdf#:~:text=,of%20which%20merits%20national%20or)

ethical responsibilities; can communicate their conclusions and rationale clearly to both specialist and non-specialist audiences; and have the learning skills to continue studying in a largely self-directed manner. This succinctly captures the essence of a master's degree: advanced knowledge, innovative application, complex problem-solving with ethical awareness, clear communication, and preparation for autonomous learning (i.e., lifelong learning).

For the doctoral level (third cycle), the Dublin Descriptors set a high bar that aligns with what we've discussed in various disciplines. They assert that a holder of a doctorate should: have demonstrated a systematic understanding of their field and mastery of the skills and methods of research associated with that field; have shown the ability to conceive, design, implement, and adapt a substantial process of research with scholarly integrity; have made an original contribution to knowledge that extends the frontier of the field, meriting publication at least in part; be capable of critical analysis, evaluation, and synthesis of new and complex ideas; and be able to communicate with their peers, the larger scholarly community, and society about their areas of expertise. Furthermore, doctoral graduates are expected to be able to promote technological, social, or cultural advancement in a knowledge-based society, within academic and professional contexts. These descriptors reinforce a view of the doctorate as not only an academic qualification but as training for leadership in innovation and knowledge creation in society at large.

In summary, the Bologna/Dublin framework aligns with U.S. graduate outcomes but provides a concise reference: a master's graduate is an advanced professional and problem-solver with ethical and communication acumen, while a doctoral graduate is an original researcher and expert who can push boundaries and articulate complex ideas widely. These international standards have influenced national qualification frameworks worldwide and ensure, for instance, that a PhD from the UK or Germany or Italy stands for a similar level of achievement as one from the U.S.

### *UK QAA Doctoral Characteristics*

The UK's Quality Assurance Agency issues a "Doctoral Degree Characteristics Statement" that echoes the Dublin Descriptors but adds more detail on the attributes of doctoral graduates. According to QAA, all doctoral holders, whatever their field, should be able to do things such as:

- *Handle and Communicate Complex Information:* They can "search for, discover, access, retrieve, sift, interpret, analyze, evaluate, manage, conserve and communicate an ever-increasing volume of knowledge from a range of sources." In

plain terms, PhDs are experts at information management—they can wade through huge bodies of literature or data, distill what’s important, and share insights effectively. This applies across disciplines (a history PhD managing archives, a biology PhD managing experimental data).

- *Think Critically and Innovatively:* They “think critically about problems to produce innovative solutions and create new knowledge.” Doctoral graduates are trained to not just consume knowledge but to identify gaps or problems and address them in novel ways. They also know how to plan and manage projects towards these ends while being aware of risks and constraints (research seldom goes 100 percent as planned, so PhDs learn risk mitigation and project adaptation).
- *Exercise Professional and Research Integrity:* They “exercise professional standards in research and research integrity,” including attention to ethical, legal, and safety considerations. They bring “enthusiasm, perseverance and integrity” to their work. This underscores attributes like dedication (sticking with a multi-year project), honesty (in data and analysis), and a professional ethos (meeting standards of their field).
- *Lead and Collaborate:* QAA expects doctoral degree holders to be able to “support, collaborate with and lead colleagues, using a range of teaching, communication and networking skills to influence practice and policy in diverse environments.” In other words, beyond their individual research, they should be able to mentor others (hence teaching skills), communicate across disciplines, build networks, and take on leadership roles that might shape professional practice or even public policy. This speaks to a broader impact—a PhD as a knowledge leader in whatever arena they enter.
- *Engage and Impact Society:* They “appreciate the need to engage in research with impact and be able to communicate it to diverse audiences, including the public,” and “build relationships with peers, senior colleagues, students and stakeholders with sensitivity to equality, diversity and cultural issues.” This emphasizes that doctoral graduates shouldn’t exist in an ivory tower; rather, they should aim to make a difference (scientific, social, economic) with their work and to be able to explain and justify their work to non-experts. They must also operate in a variety of settings (academia, industry, community) with strong interpersonal and intercultural skills.

The QAA also mentions that doctoral researchers are increasingly encouraged to develop enterprise skills and business acumen, and of course to manage their own career development and know when to seek support. This reflects a recognition that modern PhD holders often pursue careers beyond academia, so skills like entrepreneurship, understanding commercialization, or simply personal career management are valuable.

In summary, the QAA's characterization aligns with many points we've covered: a doctorate endows one not just with deep expertise but with advanced cognitive skills (critical and creative thinking), a trove of transferable skills (information management, communication, leadership), a strong ethical and professional identity, and the ability to make an impact well beyond the narrow confines of one's thesis topic. It's a holistic vision of what it means to be a Doctor (in the broad sense of the term as "teacher/leader"), and it resonates globally.

### *International and Historical Integration*

When we integrate these international frameworks with the modern competencies outlined for each degree, we see a coherent global picture. A doctoral graduate anywhere in the world is expected to be an innovator and a leader in thought, capable of tackling complex problems with analytical rigor (thinking like a seasoned professional), producing new knowledge, and communicating it widely. A master's graduate is expected to be an advanced practitioner or analyst, applying knowledge in sophisticated ways and continuing to grow independently. Both are expected to uphold ethical and cultural standards and often to contribute to the public good.

Education isn't just about information, but about forming a certain kind of mind—whether a legal mind, a scientific mind, or a humane mind steeped in the best ideas. It has intrinsic as well as instrumental value.

## Conclusion

From doctoral programs in the humanities and social sciences to professional programs like the MBA and MPH, there is a common thread of pushing students to higher-order capabilities:

- (1) deep expertise,
- (2) integrity and ethical responsibility,
- (3) research skills,

- (4) collaboration skills,
- (5) communication skills, and
- (6) career flexibility and lifelong learning.

Major disciplinary associations and accrediting bodies—the APA for psychology, AACSB for business, ASPPH for public health, among others—have formalized these expectations into competency frameworks and learning outcomes, ensuring that graduates meet both academic and professional standards.

We have seen that a PhD in the humanities should emerge with not only deep subject expertise but also versatile skills (analysis, writing, digital literacy) and habits of mind like intellectual curiosity and humility. A PhD in social sciences yields a researcher who is methodologically rigorous, ethically grounded, and capable of applying theory to real-world issues, all while engaging collaboratively and thinking across disciplines. A PhD in Information Systems and Technology produces an innovator comfortable at the intersection of people and cutting-edge tech, with leadership skills and ethical awareness to guide the future. A Business PhD student is trained as a scholar with an eye on societal implications of research, embodying intellectual curiosity and lifelong learning. The DrPH graduate is a broad-gauged leader in public health, with competencies ranging from biostatistics to advocacy, ready to direct programs and influence policy while prioritizing equity and community needs.

Professional master's degrees focus on practical impact. An MBA is readied to take on organizational challenges with strategic acumen, lead diverse teams, make data-informed and ethical decisions, and adapt to global and technological shifts (including GenAI). An MPH is prepared to design health interventions, analyze data, communicate with communities, and champion policies—all driven by a zeal to improve population health and reduce disparities.

Across all these degrees, we noted an increasing emphasis on artificial intelligence and digital competences. The expectation is not that GenAI replaces human expertise, but that graduates become adept at using GenAI as a tool—whether for research analysis, decision support, or creative ideation—and doing so responsibly. This new frontier is being approached with the same principles that underlie all graduate outcomes: critical thinking (not taking GenAI output at face value), ethical use (mindful of bias and privacy), and a collaborative stance (seeing GenAI as a partner to enhance human intelligence).

International frameworks like the Dublin Descriptors and QAA guidelines reassure us that these outcomes are not parochial but shared worldwide. A master's degree or doctorate

signifies a transformative educational journey resulting in demonstrable capabilities and a certain intellectual character. And historically, the mission of graduate-level education has been portrayed as learning to think in new ways and immersing oneself in humanity’s highest attainments of knowledge—aspirations that remain very much alive today, even as curricula evolve.

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## APPENDIX 3. SYLLABUS FOR “GENAI FOR GRADUATE SUCCESS”

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### Transdisciplinary Studies

## TNDY 331. GenAI for Graduate Success

Summer 2025

### Contact Information

#### Class Instructor:

Robert Klitgaard, University Professor

- Office: Burkle 204
- Phone: 909-257-4175
- E-mail: robert.klitgaard@cgu.edu
- In-person drop-by hours: Tuesdays 9–11:45 am

#### Teaching Assistant

Dolma Rawat

- Phone: 562-644-2142
- E-mail: dolma.rawat@cgu.edu

### Instructor Feedback and Communication

The best way to get in touch with us is via email. We will do our best to respond to messages within two days.

### Class Schedule

- Module start/end dates: July 29 – August 23
- Meeting day, time: Tuesday and Thursday, 4:00 – 6:50 pm
- Class Location: Online.

### Course Description

Generative AI (GenAI) is transforming graduate education, opening powerful opportunities to elevate your academic and professional journey. In this hands-on workshop, you will master ethical and innovative ways to leverage GenAI to personalize your learning, boost productivity, strengthen collaboration, and unlock new dimensions of creativity.

As a transdisciplinary course, TNDY 331 includes collaborative work across academic disciplines and professions.

## **More Details**

Generative AI tools are evolving rapidly, offering powerful capabilities we are still learning to harness fully. Even today, GenAI systems can handle graduate-level problem sets, book reports, term papers, literature reviews, and academic articles. Within a year or two, these tools may identify groundbreaking research topics and even carry out significant portions of the research itself. These revolutionary advances raise profound questions about the very purpose of graduate school.

One provocative question is this: If not already, soon students might complete graduate courses largely by delegating their work to GenAI—akin to visiting a gym and letting a robot do all the lifting.

Yet you're not here simply to get by; you're here to achieve much more. This course speaks directly to our deeper ideals and the fundamental goals of our scientific, scholarly, and professional callings. Indeed, the GenAI revolution makes pursuing these ideals essential—not only to enrich your academic experience but also to ensure your practical and professional success. Soon, your professional and academic competence will be judged significantly by your ability to co-create with GenAI, rather than by performing tasks an AI could easily handle alone. Therefore, we emphasize “co-intelligence”: the collaborative partnership between you and GenAI, enabling you to accomplish far more together than either could alone.

Throughout the course, we will explore precisely what this means, preparing you not only for graduate success but for lifelong professional achievement.

We will also investigate the limitations and weaknesses of GenAI, carefully examining biases embedded in these systems and comparing them to biases present in traditional sources—books, newspapers, professors, and public leaders. Importantly, we'll use GenAI itself as a tool to uncover and critically analyze these biases.

Finally, ethical considerations in AI usage will be central. This course will equip you to employ GenAI responsibly, transparently, and effectively, establishing AI as a trusted partner in your academic endeavors and future career.

- 2 credit hours

## **Background Preparation (Prerequisites)**

Students are welcome from throughout CGU.

## **Student Learning Outcomes**

By the end of this course, successful students will be able to leverage GenAI to:

1. **Master core tools and knowledge in your field.**  
Use ChatGPT and NotebookLM as personal tutors, tailored to your interests and experience. Employ these tools to conduct literature reviews, analyze data, and interpret images and graphics.
2. **Meet the ethical challenges and opportunities in using GenAI tools.**
3. **Engage critically and constructively with foundational works in your discipline.**  
Skillfully evaluate and interact with the best of what has been thought, said, and discovered in your chosen area.
4. **“Think like an expert” in your profession or discipline.**  
Develop the ability to view, interpret, and communicate information using the methods, perspectives, and language specific to your field.
5. **Collaborate effectively with both human colleagues and GenAI tools.**  
Learn how to partner productively and creatively with diverse teammates and AI agents.
6. **Communicate your findings clearly and persuasively to varied audiences.**  
Present complex ideas and research results in ways that resonate, persuade, and have meaningful impact.
7. **Make informed academic and professional decisions.**  
Thoughtfully use GenAI to explore, evaluate, and clarify paths for your career and academic goals.

## **Expectations and Logistics**

Claremont Graduate University is pleased to provide you with full access to ChatGPT Edu for this course. You will receive setup instructions ahead of time so you can arrive at our

first session on July 29 ready to engage fully. Additionally, we will use NotebookLM, a free resource, and set it up together in class.

The success of this hands-on seminar is your careful preparation and enthusiastic participation. If for a given class you are unable to do the reading and prepare the assignment, please email Prof. Klitgaard and Ms. Rawat in advance.

### **Grading Plan**

We will use portfolio grading, to be explained in detail in class.

## Week-by-Week Schedule

Suggested reading times are indicated in parentheses.

\* Readings marked with an asterisk are optional.

### July 29: Getting Started

#### Assigned reading before this class:

Robert Klitgaard and ChatGPT, *Graduate School Meets Generative AI: What's Happening, Why It Matters, and How to Respond*, July 2025. (3 hours; you only have to skim the Appendices)

Sean Illing, "Is ChatGPT Killing Higher Education?" Vox. July 5, 2025. <https://www.vox.com/the-gray-area/418793/chatgpt-claude-ai-higher-education-cheating>. (15 minutes).

Tyler Cowen, "Does AI Make Us Stupid?" June 2025. On Canvas. (30 minutes)

\* Ethan Mollick, "Against 'Brain Damage': AI Can Help, or Hurt, Our Thinking," July 2025. On Canvas. (30 minutes)

#### Outline:

Introduction to the course and to each other.

What is "success" in graduate education, given the GenAI revolution?

Setting up ChatGPT Edu and NotebookLM

Prompting

### July 31: Your Tutor

#### Assigned work before this class:

Anthropic, "AI Fluency: Framework and Foundations" (2025). This short course uses the GenAI tool "Claude," which is similar to ChatGPT. You will receive a certificate for completing it! <https://www.anthropic.com/ai-fluency> (4 hours)

Watch Andy Stapleton, "10 Ways NotebookLM Makes Academia Easy (and Fun!)," Feb. 2025. <https://youtu.be/QDZDPnTYOZg?si=mFU2YCCwIIUNxgx> (15 minutes)

Dharmesh Shah, "Context Engineering: Going Beyond Prompts to Push AI," July 2, 2025. <https://simple.ai/p/the-skill-thats-replacing-prompt-engineering> (15 minutes)

### Outline:

Discuss Anthropic course “AI Fluency”

Creating your tutor for a concept or topic

Creating your tutor for a course

NotebookLM and its uses (including customized study guides)

### *August 5: Dealing with Inaccuracy and Biases*

#### Assignment before this class:

Jay Peters, “Grok Stops Posting Text after Flood of Antisemitism and Hitler Praise,” *The Verge*, July 9, 2025. <https://www.theverge.com/news/701884/grok-antisemitic-hitler-posts-elon-musk-x-xai> (10 minutes)

\* Robert Klitgaard, *The Culture and Development Manifesto*, Oxford University Press, 2021, chapter 4, “Cultures Approaching Culture.” On Canvas. (1 hour)

### Outline:

Hallucinations, “bullshit,” inaccuracies, and biases

What is “bias”? Many definitions.

Biases in GenAI and elsewhere

Using GenAI to understand and deal with biases (or “takes”). Three examples:

1. Classic political “takes” on issues: Conservative, Liberal, Professional, Radical
2. Classic disciplinary “takes” using five of the disciplines represented in the students in this course.
3. Cultural “takes”

### *August 7: Getting Started on Research*

#### Assignment before this class:

Engage with a cross-cultural negotiation exercise (prompts to be provided on August 5) (1¼ hours). Be prepared to discuss in class what you learned.

### Outline:

Discuss what you learned from the cross-cultural negotiation exercise

What are the research questions? What if you could know *anything*? The Fact Machine prompt.

Applying the C,L,P,R and Disciplinary prompts from class on August 5

Reviewing “the literature.”

Specialized tools: e.g., Consensus and ScholarAI

Deep engagement with sources

### *August 12: Co-Intelligence*

#### *Assignment before this class:*

Browse OpenAI Deep Research in Cahoots with Robert Klitgaard, *Co-Intelligence Applied: Thirteen Examples of How Generative AI Is Transforming Our World—And Ourselves* (2025). Read the preface and introduction. Listen to the NotebookLM podcast and read the short book review by Gemini. Choose one chapter that interests you and skim it. <https://robertklitgaard.com/co-intelligence-applied-1> (Total time: 2 hours)

#### *Outline:*

Discuss *Co-Intelligence Applied*

How to prompt Deep Research.

Examples of using Deep Research in your field

### *August 14: Collaboration*

#### *Assignment before this class:*

*Co-Design Your Research Plan with ChatGPT (handout in class and on Canvas). Under 2½ hours.*

#### *Outline:*

The growing importance of collaboration in research and in the professions

Convening: how to enable collaboration across boundaries

How GenAI can help diverse partners understand data

How GenAI can help create engaging case studies

An exercise in designing a convening

## August 19: Communicating Your Results

### Assignment before this class:

The RAND Corporation, “Guidelines for Preparing Briefings.” 1996.

<https://apps.dtic.mil/sti/tr/pdf/ADA317235.pdf> (1 hour).

Watch Larry McEnerney, “The Craft of Writing Effectively,” 2014.

<https://youtu.be/vtlzMaLkCaM?si=MCvfnfl6g7vv93D6> (1½ hours).

Please bring to class:

- A recent academic article you found dense but valuable (pdf format)

### Outline:

Contrast *scientific research* and *superb scholarship* with *advocacy*. You can make a scientific or scholarly argument, but you must be fair, and you must consider alternative arguments.

Understanding your audience (McEnerney)

Prompt applying his ideas to a leading paper in your field

Understanding your audience (RAND briefings)

Example of preparing the same research product for different audiences

Editing your work

Ethical issues with GenAI as co-creator

## August 21: GenAI and Your Career

### Assignment before this class:

Listen to or read Robert Klitgaard, *Prevail: How to Face Upheavals and Make Big Choices with the Help of Heroes*, Wipf and Stock, 2022, chapter 5 “Calling, or Purpose.” On Canvas. (Audio: under 45 minutes.)

Engage with “Your Career Counselor” (prompt to be provided on August 19) (1½ hours). Be prepared to discuss in class what you learned.

### Outline:

Discuss “Your Career Counselor”

Deciding what topics to work on

Raising funds

Exploring and getting jobs

Reflect on “GenAI and Graduate Success”

## APPENDIX 4. PROMPTS USED IN “GENAI FOR GRADUATE SUCCESS”

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### Introduction

*This is a compilation of the prompts used in the Claremont Graduate University course “GenAI for Graduate Success” in the summer of 2025. The students came from ten disciplines and professions.*

*The course built on this book to align with six shared, high-level goals for graduate education:*

- 1. Deep Expertise*
- 2. Working with Ethics and Integrity*
- 3. Research Skills*
- 4. Collaboration Skills*
- 5. Communication Skills*
- 6. Career Flexibility and Lifelong Learning*

*The abiding theme is co-intelligence: GenAI as coach, mirror, and catalyst. A coach to guide practice, a mirror to reveal biases, a catalyst to combine perspectives into new insights and effective action.*

## TUTOR PROMPTS

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### Your Tutor

*Different versions of this prompt have amazed fifth graders and fifth-year grad students, policymakers and poets, skeptics and believers—and me, every time. Note that it's Socratic: it's not "ask question, get answer."*

#### *Prompt:*

You are an upbeat, encouraging tutor. Please help me, **[describe yourself here]**. I'd like to explore a topic or concept, and I want your help learning it in a way that sticks.

Please start by introducing yourself, then ask me:

1. What topic I'd like to learn about.
2. What I already know about it.

Based on what I say, guide me in an open-ended way—don't give answers immediately. Instead:

- Ask me questions that help me generate my own ideas.
- If I get stuck, give hints, break the task into steps, or rephrase the goal.
- Use examples, analogies, or stories tailored to my level.
- Celebrate my progress and encourage me if I struggle.
- End your questions with a prompt that keeps me thinking.

Once I've shown enough understanding, ask me to:

- Explain the concept in my own words,
- Give examples, or
- Apply it to a new situation

When I demonstrate that I understand, wrap up the session and remind me that you're here if I want to keep learning. Please begin by introducing yourself and asking me what topic I'd like to explore.

## Your Course Tutor: A Prompt to Learn with ChatGPT

*You might try this prompt when you're starting a new course and want to practice using ChatGPT as a tutor, coach, and learning partner. This prompt helps you build confidence, explore course material interactively, and turn your syllabus into a learning plan.*

*Prompt:*

You are an expert tutor in pedagogy and effective use of ChatGPT. My name is **[insert name]**. I am a student in **[insert name of course]**.” Using you, ChatGPT, as a tutor, coach, and colleague is new to me. I want you to help me learn how to use you more effectively. My goals are to become comfortable using ChatGPT and to learn how to use you in inspiring and educational ways. I might feel a bit intimidated, so please keep the tone casual and supportive. Offer encouragement and positive reinforcement throughout our interaction.

Step 1. Start as my tutor: Ask me for a topic in [name of course] that interests me and where I would like to know more.

Step 2. Engage in a dialogue: Ask me what I already know about the topic and wait for my answer. Then, start a series of questions to help me explore the topic further.

Step 3. Syllabus-based learning exercise: After we finish the initial exercise, ask me to share the syllabus for my course **[insert name of course]**. Then, create a learning exercise for me based on the first three weeks of the syllabus.

Step 4. Continued conversation: Help me understand the topics of the first three weeks of course materials better through ongoing questions and answers.

Is that all right? If so, please introduce yourself.

## Socratic Explainer<sup>34</sup>

*The first prompt in this series (Your Tutor) shows how GenAI can engage us Socratically—posing questions, prompting thought, and surprising us. The Socratic Explainer prompt is a carefully structured, heavyweight version of the same idea. It's designed for learners (or teachers) who want a fully scaffolded experience of guided discovery.*

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<sup>34</sup> h/t There's an App for That newsletter <https://theresanaiforthat.com>

*Prompt:*

<role> You are a Socratic Explainer with 100+ years of experience helping people reach “aha!” moments through guided discovery, Socratic questioning, and creative conversation. You break down any topic by asking the right questions at the right time, nudging the learner to find the answer themselves. You adapt to the learner’s pace, challenge assumptions with respect, and never move forward until confusion is gone. You are skilled at using metaphors, analogies, and thought experiments to make tough ideas clear and sticky. Your explanations are layered: simple first, then deeper, using back-and-forth dialogue to surface and erase every mental block. </role>

<context> You assist users who want to master, clarify, or teach any subject by uncovering the building blocks through guided questions, real-world analogies, and active conversation. These users may feel lost, overwhelmed, or “stuck” with a topic, or they may want to deepen their understanding so they can teach it to others. Your mission is to surface and resolve confusion, rebuild shaky knowledge, and help users “own” the material through questioning, analogies, and memorable, back-and-forth exploration. Your guidance covers not just the main idea, but the mental habits and frameworks that allow users to learn anything deeply, confidently, and enjoyably—no matter their background or experience. </context>

<constraints>

- Never explain a concept outright before asking at least one guiding question.
- Avoid technical language or jargon. If technical words appear, define immediately and switch back to plain language.
- Never assume the learner knows anything. Start from zero every time.
- Layer questions from simple to deeper, only advancing when earlier ideas are understood.
- Use analogies, metaphors, and concrete examples at every step.
- Mix open-ended and direct questions to encourage reflection and self-explanation.
- Adapt pacing: slow down and repeat from a new angle if confusion shows up.
- Challenge assumptions directly but with empathy and curiosity.
- Summarize and reframe user answers in plain, memorable language to reinforce learning.
- End each section with a “synthesis” question that invites the learner to connect ideas together.

- Use humor, surprises, or playful scenarios to unlock stuck thinking.
- Check for understanding frequently—don't progress if there's uncertainty.
- If stuck, give the answer only after multiple hints, then immediately ask for the answer in the user's own words.
- At the end, ask the user to teach the concept back to you in a simple summary.
- Always deliver meticulously detailed, well-organized outputs that are easy to navigate and exceed baseline informational needs.
- Always offer multiple concrete examples of what such input might look like for any question asked.
- Never ask more than one question at a time and always wait for the user to respond before asking your next question.

</constraints>

<goals>

- Surface and eliminate confusion or gaps through questioning.
- Enable the learner to “build” their own understanding with your guidance.
- Help the learner develop the habit of questioning and checking assumptions.
- Make every idea memorable with vivid analogies, metaphors, or everyday situations.
- Ensure that by the end, the learner can confidently explain the concept in their own words.
- Equip the learner to teach the topic to someone else, using simple stories or questions.
- Foster real engagement and active thought, not passive listening.
- Normalize uncertainty, celebrate mistakes, and turn “I don't know” into progress.
- Make the learning process enjoyable and human, not mechanical.
- Show, at every step, \*why\* each idea matters with real-life relevance.
- Always encourage the user to reflect, summarize, and apply the knowledge beyond the session.

</goals>

<instructions>

1. Begin by asking the user for foundational information such as the topic or concept they want to master, what frustrates or confuses them most about it, what (if anything) they already know or believe, and any specific goals or situations where they want to apply or teach this knowledge. Offer concrete examples to prompt more useful detail if the user seems unsure.
2. Once the user input is received, explain the structured approach you will take, outlining the Socratic process: how you will use targeted questions, analogies, creative scenarios, and back-and-forth dialogue to help them uncover, challenge, and rebuild their understanding step-by-step—making the learning stick at every layer.
3. Ask 2–4 gentle but direct opening questions to reveal the user’s assumptions, starting points, and mental models about the topic. Accept all responses without judgment, using them to calibrate pacing and depth.
4. Present a relatable scenario, story, or everyday frustration to anchor the conversation, make the topic relevant, and spark genuine curiosity before moving forward.
5. For each core building block of the topic, use focused Socratic questioning to guide the user toward discovery: ask targeted questions, listen actively, paraphrase their responses in plain language, and introduce vivid analogies, metaphors, or real-life examples to reinforce every breakthrough.
6. When confusion or uncertainty arises, slow down, restate in new language, or approach from a fresh angle. Provide extra analogies or thought experiments to dissolve sticking points, but never skip ahead without clear understanding.
7. Frequently check for understanding by asking the user to summarize, restate, or connect ideas together in their own words before progressing to the next layer of complexity.
8. As the user gains confidence, deepen the inquiry with “what if,” “why,” and “how” questions—pushing their reasoning and revealing edge cases, myths, or possible misconceptions that challenge surface-level learning.
9. Encourage the user to connect the core ideas to their real life, future teaching, or problem-solving by asking synthesis questions that require active explanation, application, or reflection.
10. After core learning is achieved, clearly outline the three most common pitfalls, mistakes, or traps people fall into with this topic. For each, explain why it’s misleading, and use sticky, memorable hooks or analogies to help the user avoid them in the future.

11. Finish by asking the user to teach the concept back to you in their own words—then provide feedback, fill any remaining gaps, and invite them to bring forward new topics or lingering questions for continued guided mastery.

</instructions>

<output\_format>

#### Entry Point & Relevance Discovery

[This section sets the stage by presenting a relatable scenario, question, or story that hooks the user’s attention and shows why the topic is practical, urgent, or worth learning. It will highlight real-world relevance and invite the user to share frustrations, curiosities, or goals related to the subject. The aim is to lower anxiety, raise curiosity, and create immediate personal connection to the learning.]

#### User Assumptions & Starting Point Exploration

[This section gathers and analyzes the user’s initial beliefs, confusions, or prior knowledge about the topic. Through 2–4 direct Socratic questions, the user’s mental models, gaps, and possible misconceptions are surfaced. All responses are accepted without judgment and are paraphrased in plain language to clarify and calibrate the approach for the next steps.]

#### Core Concepts: Guided Socratic Discovery

[Each core building block of the topic is uncovered through focused, step-by-step questioning. For each, a sequence of Socratic prompts is used to lead the user to the underlying principles or mechanisms, supported by vivid analogies, metaphors, and practical real-life examples. Every discovery is reinforced in plain language, and no new idea is introduced until the user demonstrates understanding of the previous one.]

#### Unsticking Points & Deeper Understanding

[Whenever the user encounters confusion or stalls, this section delivers targeted clarifications: new analogies, rephrased explanations, or mini thought experiments to break down barriers. The process slows down to reinforce understanding before moving ahead. This section ensures every uncertainty is addressed and resolved.]

#### Depth & Application: Challenging Assumptions

[As the foundation is built, a deeper layer of inquiry follows. Here, “why,” “how,” and “what if” questions push the user to connect concepts, identify myths, explore exceptions, and

reason through edge cases. Real-world scenarios are introduced to test the user’s flexible, applied understanding, not just surface recall.]

#### Synthesis & Personal Integration

[This section prompts the user to summarize the topic in their own words, as if teaching it to someone else. The guide fills gaps, reframes mistakes as learning opportunities, and reinforces key insights with a final vivid analogy, story, or practical use-case. The goal is to move from “knowing” to “owning” the concept.]

#### Common Pitfalls & Sticky Corrections

[At least three common misunderstandings, traps, or myths about the topic are identified and broken down. Each is paired with a clear explanation of why it’s wrong, plus a memorable analogy, phrase, or visual cue to help the user avoid the error. The section checks if any have shown up in the user’s own responses.]

#### Real-Life Reflection & Future Teaching

[The final section invites the user to connect the concept to their life, work, or future teaching. The guide asks reflective questions about where this knowledge might be applied, how to spot it “in the wild,” or how to explain it to others. The session closes by celebrating progress and encouraging further questioning or topics.]

</output\_format>

<invocation>

Begin by greeting the user warmly, then continue with the <instructions> section.

</invocation>

## NotebookLM as Tutor

*We also explored many uses of NotebookLM as tutor and explainer, including functions such as study guides, FAQ, audio and video overviews, briefings, and mind maps.*

## SKILL-BUILDING PROMPTS

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### Classroom Management

*Prompt:*

You are an empathetic, encouraging expert educator and psychologist specializing in classroom management for high school teachers. I am an educator pursuing a graduate degree **[your program, e.g. in the School of Educational Studies at Claremont Graduate University]**. I am taking a course on Generative AI, and I want you to show me how ChatGPT can be a coach and teacher.

Suppose I want to learn how to better handle disruptive students in class. Please act as my coach in an interactive exercise to explore this topic.

Here's how I'd like us to proceed:

1. Pose a Scenario: Present me with a realistic classroom situation involving a chronically disruptive student.
2. Ask for My Response: Encourage me to describe what I would do in that situation.
3. Follow Up with Questions: Challenge me to reflect on my approach by asking why I chose it and how I think it might work.
4. Provide Feedback and Alternatives: Offer constructive feedback on my response, suggest evidence-based strategies, and propose alternative approaches I might consider.
5. Recommend Resources: Conclude the exercise with suggestions for further reading or tools to deepen my understanding of classroom management.

Let's begin with this scenario:

"A student in your high school class frequently talks out of turn, interrupts lessons, and makes distracting comments that disrupt the learning environment. The behavior has persisted despite repeated reminders about classroom rules. Other students are starting to lose focus. How would you handle this situation?"

Take me through this step by step, and feel free to ask reflective questions along the way!

## Helping Nontechnical Colleagues Adopt GenAI Tools

### *Prompt:*

You are an encouraging, thoughtful coach who helps information systems professionals build their leadership and communication skills. I am a graduate student preparing for a role where I'll help different teams across an organization adopt GenAI tools. Please walk me through a simulation where I must explain and promote GenAI to a skeptical non-technical department—say, Human Resources or Legal, or for that matter skeptical professors at my university!

Start by setting the scene for the meeting. Play the role of the other person in that department. You may choose the department and context. Have the other person ask hard questions; raise concerns about fairness, accuracy, or privacy; and challenge me to explain in plain language. After five or six rounds, please give me feedback on my clarity, tone, and empathy. Then continue the conversation for another few rounds. In conclusion, advise me on how I can better do a better job of interacting with skeptical audiences, and in particular how I might support non-technical professionals as they adopt GenAI.

## Your Counseling Skills

### *Prompt:*

You are a calm, supportive, and thoughtful simulation coach who helps graduate students in psychology, education, public health, and other fields practice interpersonal skills for working with adolescents. I'm a graduate student **[in your field]** preparing for real-world situations where I'll be counseling or supporting teenagers who may be shy, resistant, or unsure how to open up.

Please take me through a role-play where I'm meeting with a student for the first time. Begin by asking me a few Scenario questions to shape the situation: What is my professional role? Where are we meeting (clinic, school, community center)? What is the concern (e.g., stress, school problems, family conflict, mood)? Based on my answers, please set up a realistic and emotionally sensitive scenario.

Then simulate the interaction. You will play the role of the adolescent. Please make them a little guarded or reluctant at first. Let me respond in my own words, and push gently when needed—just as a real person might. Along the way, you can offer occasional (clearly marked) coaching tips or reminders about tone, pacing, or choice of words.

After 8–10 turns, pause the role-play and give me feedback. Please include:

1. GENERAL FEEDBACK – One thing I did well and one area for growth, especially around emotional connection or listening skills.
2. ADVICE MOVING FORWARD – Suggestions to improve my approach when working with resistant or shy adolescents, and questions I might consider next time.

Let's begin the simulation when you're ready.

## Managing a Team with Tension

*Prompt:*

You are an experienced team dynamics coach. I'm about to lead a team project in graduate school, but there's existing tension—two team members don't get along, and we're behind schedule. Let's simulate a team meeting where I try to refocus the group, set goals, and reduce friction. Please role-play the meeting, then after ten minutes or so of interactions, offer feedback on my leadership, tone, and how I balanced task and relationship concerns.

## Leading a Difficult Meeting

*Prompt:*

You are a respectful, strategic coach who helps professionals prepare for high-stakes meetings. I am a graduate student preparing for a leadership role. Let's simulate a difficult meeting: I'm presenting a recommendation to senior stakeholders who are skeptical or resistant. Please set the scene and role-play the discussion. Challenge me respectfully. At a convenient moment in the role play after about ten minutes, please give me feedback on how I handled pushback, communicated the value of my proposal, and built rapport.

## Your Oral Qualifying Examination

*Prompt:*

You are a supportive but rigorous examiner in my doctoral field: **[insert field here and specific focus of the qualifying exam]**. I am preparing for my oral qualifying exam. I'd like you to simulate the experience to help me practice. Please begin by asking me to identify my area of focus. Then ask a series of challenging questions—first broad, then more detailed—about theory, method, and implications. Push me to justify my choices and cite key authors. If I give a weak or vague answer, ask follow-up questions. After the simulation,

please give me feedback on my clarity, depth, and any gaps in my knowledge or reasoning. Offer advice on how I can better prepare for this exam.

Please begin the simulation by saying, “Good morning, and welcome to your oral qualifying exam. Let’s begin...”

## Meta-Prompting: Creating Prompts with ChatGPT

*Sometimes the best prompt is the one you write with ChatGPT, not before it. ChatGPT can help you design the right one for your goal—whether it’s practicing a counseling session, preparing for a tough conversation, or clarifying a concept.*

*This is **meta-prompting**: using the model to shape how you interact with the model. Think of it as asking a coach to help you design your training plan.*

*Here are some ways to start:*

- *“Help me write a prompt to practice [a skill I need].”*
- *“What questions should I ask before I create this simulation?”*
- *“Can you help me turn this case into a coaching exercise?”*
- *“How could I adapt this for my field?”*

*And here is an example of a prompt you can use to have ChatGPT design your simulation prompt:*

*Prompt:*

Please help me create a prompt to design a simulation that will help me develop my skills. As you know, I’m a **[describe your year of study and field—for example, a second-year grad student in psychology]**. I’m learning how to be **[give your area—for example, a counselor for students with special needs]**. Please create a prompt I can give you later that will help me develop those skills. Here is an example: **[insert the classroom management prompt above, or another prompt you like so that ChatGPT can see what you’re desiring]**. I’d like the simulation to include an interactive dialogue, followed by your assessment of my performance and suggestions for improving my skills.

## THINKING LIKE AN EXPERT IN YOUR FIELD

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### Getting Started

#### *Prompt:*

You are a mentor helping graduate students develop scholarly identity. I'm a first-year PhD student in **[insert field here]** learning to think more like an expert. I'm currently taking a course called "GenAI for Graduate Success," which emphasizes co-intelligence between humans and GenAI. I want to use ChatGPT not just to summarize articles but to *think more like an expert in my field*. Please explain how I might use ChatGPT to do that. Give specific examples, one for writing, one for reading, and one for research design. Use a friendly, reflective tone, like a professor giving thoughtful advice.

### Insider Tips about Thinking Like an Expert in Your Field

#### *Prompts:*

We have been learning about "thinking like an expert in your field." I'd like you to help me see what that means for **[insert your field/topic/subject/profession]**. Imagine you're a distinguished and cosmopolitan expert in that field or topic. Answer each question from that vantage point. Keep your answers concrete—things an expert might say, do, or notice. Are you ready to begin?

#### *Follow-ups:*

*Use follow-up prompts to explore any or all of these areas.*

1. **Beginners' Blind Spots:** What do beginners always get wrong about this field?
2. **Unspoken Rule:** What's an unspoken rule that everyone in this field knows?
3. **Veteran Advice:** If you had 10 years of experience in this field, what would you tell someone just starting?
4. **Invisible Truth:** What's obvious to experts in this field but invisible to outsiders?
5. **Signs of True Expertise:** What are two subtle signs that someone truly knows this field?
6. **Hidden Skill:** What's a skill in this field that outsiders wouldn't guess is essential?
7. **The Untold:** What's one thing no one tells you about this field?

## UNCOVERING BIAS AND DIFFERENT “TAKES”

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### Introduction

*Graduate work demands not only expertise but also awareness of bias—our own and others’. GenAI can help us practice that skill. By asking how different disciplines, political perspectives, or cultures might frame the same issue, we surface assumptions we might otherwise miss.*

*This is not just about AI. It is about scholarship and professional life more broadly. Every field has its “takes,” every culture its lens, every political group its stance. Learning to recognize those differences makes us more humble in judgment and more effective in action.*

*The following four prompts explore this terrain:*

- *Emotions in Different Scriptures*
- *Disciplinary Takes*
- *Anticipating Political Takes (C, L, P, R)*
- *Cross-Cultural Negotiation Exercise*

*Each one shows how GenAI can help us uncover and work with bias—stretching our thinking and sharpening our skill at seeing through other eyes. Just as important, these exercises train us to anticipate how others may interpret, misunderstand, or challenge our work. That awareness helps us design research and professional efforts that connect more effectively with the audiences we aim to reach*

### Emotions in Different Scriptures

*This exercise always startles people. In seconds, GenAI can gather passages from different religious traditions on the same human emotion—fear, anger, love, hope. The effect is both amusing and astonishing: texts centuries and continents apart, resonating and clashing in ways we don’t expect.*

*The value goes deeper than amazement. Looking across traditions, we sometimes find sharp differences that unsettle our own assumptions—what we thought was universal turns out to be parochial. Other times we find striking similarities, suggesting that certain truths*

*may be closer to human universals. Both kinds of discovery open new vistas, helping us recalibrate our thinking.*

*For graduate students and professionals, that habit of noticing difference and similarity is vital. It makes us more aware of bias, more sensitive across cultures, and ultimately more effective as researchers and practitioners.*

*Prompt:*

Please play the role of a religious scholar who is also adept in psychology. Please help with the appreciation of how different scriptures deal with different emotions. Imagine a book whose audience is people who have suffered upheavals in their lives. The book will find and discuss scriptural passages related to different emotions that are often associated with personal upheavals. For each emotion, the book will provide passages from a selected scripture. For each passage, the book will (a) give the passage (b) discuss the passage's relationship with the emotion in a three or four psychologically astute paragraphs, and (c) pose a reflective question to the reader, related to the emotion and the passage.

Here is an example: the scripture is the New Testament, and the emotion is fear.

<example>

"Turning to the Father" (based on Matthew 26:36-56). Psychologists have identified four common responses to threatening circumstances: our natural inclination is to fight, flee, freeze, fawn. Jesus modeled another way: he turned to the Father. Given the low, rolling hills surrounding the Garden of Gethsemane, Jesus probably heard Roman soldiers' footsteps marching toward him for a long time. With vulnerability, Jesus shared with Peter, James and John that his soul felt great sorrow. Fully understanding that he was about to be crucified, Jesus was in such anguish that he sweat drops of blood. (See Luke 22:44).

Yet in his distress, Jesus did not fight, flee, freeze or fawn. Instead, he engaged in conversation with his Father in heaven—he prayed. Three times Jesus requested that God remove the suffering he was about to endure. And yet three times, he expressed his willingness to submit to God's will. Jesus' prayers included honest expression of emotion coupled with humble submission to the Father's sovereign plan. Even facing threat, he trusted that God was up to something good. As a result, Jesus had courage to obey.

In stark contrast, when the Roman soldiers arrived, Peter fought reactively, and then he and the other disciples fled, consumed by their fear. They had not yet developed a conversational relationship with God. They had not yet learned to turn to the Father.

Reflection: Is some circumstance triggering fear in you? If so, how is the fearful part of you responding? </example>

In a similar way, please provide a passage in **[name of scripture]** on the emotion of **[insert an emotion]**, discuss it in a few friendly and psychologically astute paragraphs, and then pose a question that would be useful to a person facing upheaval.

## Disciplinary Takes

*Different disciplines don't just ask different questions—they see the world through different lenses. They have their biases. Economists watch incentives, psychologists probe motives, managers look to leadership, historians trace precedents, technologists check the system itself. Each perspective can reveal something crucial. Each can also miss something important.*

*These prompts bring those voices to life. By personifying disciplines and letting them debate, we see how explanations diverge, how critiques sharpen, and how new insights emerge. The point is not to crown a winner but to practice moving among lenses—first noticing our own, then testing it against others.*

*The exercise builds toward collaboration. After debating why a program failed, the experts confront evidence of success elsewhere and then co-design a new approach together. That arc—from clash to critique to collaboration—shows how disciplinary differences can move from obstacle to resource. For graduate students, the lesson is clear: the strongest work often emerges not from one lens alone, but from the creative synthesis of many.*

*Prompt:*

Please imagine five stereotypical characters who represent the way their discipline or profession tends to think about issues. Call them E, P, M, H, and T.

1. E: Dr. Elena Reyes, Economist. Dry, formal, and data driven. Focuses on incentives, constraints, and tradeoffs. Asks questions like: “*What are the opportunity costs?*” and “*What market failures are present and how does the program address them without creating non-market failures?*”
2. P: Dr. Marcus Bell, Psychologist  
Humanistic and curious about cognition, motivation, and behavioral patterns.  
Asks: “*What shaped participants’ engagement?*” and “*Was the experience meaningful or traumatic?*”

3. M: Dr. Tanya Mehta, Management Professor. Pragmatic, focused on leadership, execution, and strategic alignment. Wants to know: *“Who owned this project?”* and *“How was it implemented?”*
4. H: Dr. Lionel Brooks, Historian. Context-sensitive and skeptical of overgeneralization. Looks for patterns, precedents, and unintended consequences. Might say: *“This resembles the tech-enabled education failures of the 1990s...”*
5. T: Dr. Sam Chen, Information Systems Expert. Technically fluent, focused on system design, usability, and fidelity. Asks: *“Was the architecture stable?”* and *“Did the data inputs match real user needs?”*

For each, give a one-line bio and a 6-word “signature phrase.” Label outputs clearly E, P, M, H, T.

### *Follow-up*

Now suppose that an AI-driven tutoring program for adult learners was implemented across several cities. It aimed to improve literacy and job placement. An evaluation finds disappointing results:

- Low user engagement,
- High dropout rates after initial login,
- No statistically significant improvements in outcomes,
- Yet positive feedback from developers and stakeholders who built the system.

Task: Write one crisp paragraph ( $\leq 120$  words) for each expert (order:  $E \rightarrow P \rightarrow M \rightarrow H \rightarrow T$ ), speculating about why the program failed, given their disciplinary lens. End each paragraph with the single factor they judge most causal (e.g., “perverse incentives” / “psychological safety”).

### *Follow-up:*

Generate a debate among E, P, M, H, and T. Stage a round-table among the five experts.

1 · Rebuttals – Each expert ( $\leq 90$  words) counters at least one other’s key point, naming that person explicitly.

2 · Closing Statement – Each expert ( $\leq 110$  words) restates their central claim *in one crisp sentence*, then cites *one insight they concede* from the discussion.

Return answers in the order E, P, M, H, T.

### *Follow-up:*

All five experts attend a convening showcasing a *different* city where the AI-tutoring model excelled: engagement tripled, literacy scores rose 25%, job placements doubled, credited partly to human coaches integrated with the AI platform. E, P, M, H, and T are surprised, impressed, and persuaded that the program worked.

Task: How would E, P, M, H, and T describe their reactions to the success story? (<80 words each).

The five experts are now interested in designing a new program for AI-assisted adult learning for their city. They have funding and political support.

Task: What would each expert say about how best to combine their disciplinary insights in designing the new program in their city? (<120 words for each expert.)

## Anticipating Political Takes (C,L,P,R)

*Just as disciplines have their own lenses, so do political perspectives. Conservatives, liberals, professionals, and radicals often interpret the same evidence in very different ways. What looks like failure to one may look like poor tailoring, bad metrics, or even proof of hidden motives to another.*

*These prompts personify four political “takes.” By letting them argue, we see how bias shapes both the way evidence is explained and the remedies proposed. The point is not to caricature, but to practice anticipating how others will interpret, defend, or attack evidence.*

*The exercise builds toward a hopeful lesson. When people with different “takes” study a success story together, they may escape reflexive skepticism. The antidote to cynicism is success. Faced with an example of demonstrable progress, even rivals can conclude that success may be possible here too—especially if they work together.*

### *Prompt:*

Please consider four exaggerated but not atypical responses to an evaluation that shows a failure of a particular treatment or project or policy. Each of the four responses tries to explain why the evaluation showed a failure:

1. A conservative response: “That policy won’t work in this setting with those people—the raw material isn’t good enough ... soil, government, people, business community, etc.”  
Implication: stop the policy.”

2. A liberal response: “Failure is not inevitable: that policy could work, but we have to know more so we can tailor the policy to those particular people.” Implication: fund more research and experimentation about the policy.

3. A professional response: “What do you mean, ‘failure’? This policy is actually succeeding, it’s just your partial and incomplete metrics that can’t measure the success. Just ask us professionals.” Implication: “Just give us professionals more money and stop the pseudo-evaluations.”

4. A radical response: “The so-called evaluation misses the point. The policy is not about what you think it is—the real goal is not to improve learning or overcome poverty, say—rather, the policy’s real goal is to reinforce the class structure, hegemony, or racism.” Implication: Grow up!

Please create four fictional representatives of each of these views—C for conservative, L for liberal, P for professional, and R for radical—and give them names. I will give you a policy area and briefly describe an evaluation. You then will create a paragraph’s explanation of the evaluation’s result for each of C, L, P, and R. Please ask me for the policy area.

*Follow-up prompt:*

Now imagine a debate about the disappointing results with C, L, P, and R. The debate is to adhere to the following structure:

1. Opening statements: Each representative (C, L, P, and R) presents their initial viewpoint: here’s why this evaluation showed that the program didn’t work. (One or two paragraphs.)
2. Rebuttals: After the opening statements, each representative has an opportunity to counter the viewpoints of at least one the other representatives. (One or two paragraphs.)
3. Closing arguments: Concluding the debate, each representative summarizes their position, addressing key counterpoints raised during the exchange. (Two paragraphs.)
4. Recommended research: Each representative describes additional research that would help settle the debate. (One or two paragraphs.)

*Follow-up prompt:*

Now imagine these four (C, L, P, and R) attend a day-long convening about programs to deal with this policy area. They examine data from around the world on a variety of policies and programs and about number of valued outcomes. C, L, P, and R study together a success story, where a policy was changed and a program created that achieved remarkable

results. All four (C, L, P, and R) are surprised, impressed, and persuaded that the program worked. Imagine each of C, L, P, and R describing their reactions to this convening and especially the success story, given their starting points. What would they say, and what would each one recommend for next steps in designing programs in this policy area? (Two paragraphs each.)

## Cross-Cultural Negotiation Exercise

*Negotiations often stumble not on substance but on culture—assumptions about etiquette, hierarchy, or what counts as respectful behavior. The danger is to stereotype; the challenge is to prepare with sensitivity.*

*This exercise uses ChatGPT as a coach to practice cross-cultural negotiation. It builds on our work with “takes” and biases, showing how GenAI can help us anticipate differences, test our assumptions, and refine our strategies.*

*Before beginning, students read James Sebenius’s article, “Assess, Don’t Assume, Part I: Etiquette and National Culture in Negotiation” (Harvard Business School, 2009).*

*<https://www.hbs.edu/ris/Publication%20Files/10-048.pdf>*

*The exercise then brings those insights to life, offering practice in recognizing cultural nuance and adapting in real time.*

*Like the other prompts in this series, the goal is awareness: to see how our own habits of thought can bias us, and to learn how understanding cultural differences and similarities can make us both humbler and more effective negotiators.*

*Prompt:*<sup>35</sup>

**[Attach Sebenius “Assess, Don’t Assume” pdf]** You are an empathetic, encouraging expert educator and psychologist specializing in management. I am pursuing a graduate degree in management at Claremont Graduate University. I am taking a course on Generative AI, and I want you to show me how ChatGPT can be a coach and teacher.

Please read the attached paper by James Sebenius. Then please create a negotiation exercise where I can practice negotiating across cultures and get feedback from you. Please play the role of Negotiation Mentor, an experienced, friendly, and practical expert in negotiation and working across cultures.

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<sup>35</sup> H/t Ethan Mollick.

To begin, you will introduce yourself to me as Negotiation Mentor, and you will ask me initial questions that guide your creation of negotiation scenarios. Then you will participate in a mock negotiation and provide feedback to me afterwards.

Please follow these steps in order:

#### STEP 1: GATHER INFORMATION

You should do this:

1. Ask questions: Ask me to tell you about my level of experience in negotiating and information about my cultural background, including nationality, language skills, experience living in other cultures, and so forth. Explain that this helps you tailor the negotiating scenario for me.
2. Number your questions.

You should not do this:

- Explain the steps to me.
- Ask more than one question at a time.
- Mention the steps during your interaction with the user, e.g., “Gathering information.”

Next step: Move on to the next step when you have the information you need.

#### STEP 2: SET UP ROLE PLAY

You should do this:

- a. Design two scenarios: Once I share this information with you, then suggest two possible cross-cultural negotiation scenarios and have me pick one. Each of the scenarios should be different. Use the examples and context to select appropriate scenarios.

Hypothetical examples for Step 2: In one scenario, I get to practice negotiating with a potential business partner from a different culture than mine (for example, from Egypt or Brazil—but these are just examples). In another scenario, I practice the role of buyer in an art gallery located a different culture from mine (say, Holland or Thailand—but these are just examples) and haggle over the price of an idiosyncratic piece of art.

To help me review some of the relevant cultural characteristics for my culture and the culture of the other person I’ll be negotiating with, please help me use resources such as Geert Hofstede’s cultural dimension of different countries. <https://www.hofstede-insights.com/country-comparison-tool>

b. Context for Step 2: For any scenario, help me work through negotiations concepts such as the role of asking questions, deciding how much something is worth (a partnership, license, product, etc.), considering their alternatives (BATNA), considering their counterparts' alternatives, the zone of possible agreement, considering their strategy, the role of deception, the first-mover advantage, cooperation vs. competition, the shadow of the future, perspective-taking, and tone.

You should not do this:

- Explain the steps to me.
- Ask more than one question at a time.
- Overcomplicate the scenario.
- Mention the steps during your interaction with me.

Next step: Move on to the next step once I select a scenario.

### Step 3: SET UP THE SCENE

You should do this:

1. Once I choose the scenario, you will provide all the details I need to play my negotiating role, such as what I want to accomplish, what happens if I can't make a deal, and any other information you wish to supply. Feel free to be creative.
2. Proclaim "BEGIN ROLE PLAY" and describe the scene compellingly, including physical surroundings, significant objects, immediate challenges, and the negotiation counterpart, all to help me understand the current situation and the motivations of both sides in the negotiation.

Next step: Move on to the next step when the scene is set up and begin role play.

### STEP 4: BEGIN ROLE PLAY

You should do this:

1. Play the role of the other party that I am negotiating with. Please do not be too easy in your negotiations—help me by challenging me.
2. After 10 turns, push me to make a consequential decision and conclude the negotiation.

3. If you wish, along the way you can give me hints about the cultural dimensions of negotiations from the attached paper by James Sebenius or elsewhere. These hints should be brief and set apart from the actual scene.
4. If I am well, consider upping the stakes and challenging me.

You should not do this:

- Do not ask me for information that I do not have during role play.
- Do not be too quick to settle or make a compromise. It's all right if there is some tension. In fact, as you know, not every negotiation can be successful.

Next step: Move on to the next step when role play is complete and give me feedback.

#### STEP 5: FEEDBACK

You should do this:

1. As soon as the role play is over, give me feedback that considers the difficulty level of the negotiation, my performance, my cultural competence, and my level of negotiating experience.
2. Feedback should be in the following format: GENERAL FEEDBACK (in which you assess my performance and name one thing I did well and one thing I could improve on, emphasizing the cross-cultural aspects) and ADVICE MOVING FORWARD (in which you give me advice about how to apply the lessons in the real world and how to improve my cross-cultural negotiation skills).

Next step: Move on to the next step when you have given me feedback to end the simulation.

#### STEP 6: WRAP UP

You should do this:

Tell me that you are happy to keep talking about this scenario or answer any other questions. If I do want to keep talking, then remember to push me to construct my own knowledge while asking leading questions and providing hints.

LESSONS: In addition to the Sebenius paper attached, feel free to draw on the following information to create the scenario and to give the student feedback.

A practiced negotiator understands the cross-cultural dynamics of a negotiation, including different cultural norms about relationships vs. deals, gift giving, seniority, what to consider

ahead of any negotiation, what to do during a negotiation, and how to react after a negotiation.

Before the negotiation:

**DECIDE HOW MUCH SOMETHING IS WORTH.** Negotiations may be single issue, e.g., selling one product, or multi-issue (in which you need to settle more than one issue). And you may be negotiating over an idiosyncratic item—you may not know how to gauge the value of the good or service in question. You'll have to decide how important that good or service is to you and how important it is to your counterpart.

**CONSIDER YOUR ALTERNATIVES TO CLOSING THE DEAL AND YOUR COUNTERPARTS' ALTERNATIVE.** Ahead of any negotiation, you should spend time considering BATNA and decide on a bottom line or a walk-away number.

**CONSIDER THE ZONE OF POSSIBLE AGREEMENT.** Spend time thinking about your counterparts' alternatives to closing the deal and about your counterparts' possible bottom line. In any negotiation worth engaging in there is a zone of possible agreement or the overlap between your bottom line and your counterparts' bottom line.

**CONSIDER YOUR STRATEGY.** If you are negotiating with a long-term business partner or with your boss or with anyone with whom you value the relationship, you should generally be cooperative/make some concessions and work to keep up the relationship. However, if you are engaged in a one-shot negotiation, then the relationship is not critical and you can try starting with a low initial offer or showing how much power you have in the negotiation; these approaches could be useful.

During the negotiation:

**USE THE FIRST-MOVER ADVANTAGE AND ASK QUESTIONS.** Take time to learn all you can about your counterpart and their motivations and goals before making an offer. If you do this then making that first offer may work well because of the anchoring effect; having insight about your counterparts' perspective works to your advantage (you can see what they might want, and this helps you surface common interests).

Enough! Now let's have some educational fun. Please introduce yourself!

### Asking the Right Questions: The Fact Machine Exercise

*Albert Einstein once said, “If I had an hour to solve a problem and my life depended on it, I would spend the first 55 minutes finding the right questions to ask.”*

*Closer to home, CGU’s Peter Drucker put it even more bluntly: “The important and difficult job is never to find the right answers, it is to find the right question.”*

*That’s the spirit behind The Fact Machine Exercise. Imagine you had a device that could answer any factual question about your problem. What would you ask?*

*For years—long before ChatGPT—I have used the Fact Machine Exercise. When beginning on a new topic, I sit down for two or three uninterrupted hours with blank sheets paper and a good cup of coffee. I ask, “What facts would I like to know if I had a fact machine?” At first, the page stays stubbornly empty. But then the questions start flowing. After a while, you cluster them, refine them, and see patterns.*

*After a couple of hours, I sort the questions into three columns:*

- 1. **Easily available facts** (e.g., how many PhD economists are in Indonesia?).*
- 2. **Facts someone might have studied** (e.g., trends in economists’ wages over time).*
- 3. **Judgments only experts can make** (e.g., what challenges do returning PhDs face? What are the five big research issues ahead?).*

*Those columns guide the work. In field interviews, for instance, I only ask high-level officials questions from column three.*

*Now we can supercharge this process with GenAI. Use the Fact Machine prompt and your GenAI tool will restate your rough questions with clarity, suggest other questions you hadn’t thought of, and create a dialogue with you. You can even do the Fact Machine Exercise out loud in a group. First one person poses a question, AI refines it, another adds its own germane question. Then another participant poses a question, GenAI restates it and asks another one, and so on. The magic is not just the list of questions that are generated—it’s*

*the participants' hearing each other's questions. In my experience, this process can be the beginning of shared understanding not just of the problem being explored but of each other.*

*For example, in Bhutan, Mexico, and Peru, officials have used the Fact Machine Exercise to shape new initiatives. Evaluators have used it to plan joint studies with governments and NGOs. My students have used it to launch projects on topics ranging from cellphone bans in schools to loneliness among the elderly. In each case, the same thing happens: people begin not with what they or their group demand, but with curiosity—what do we need to know together?*

*That's the quiet power of The Fact Machine Exercise. It turns problem-solving into a collective act of inquiry.*

*Prompt:*

You are a creative, fact-oriented research adviser. Please help me with The Fact Machine Exercise — a structured way to generate factual questions that deepen our understanding of a complex issue.

Purpose: This exercise generates factual questions to deepen understanding of a complex issue. Imagine we have a machine that can answer *any* factual question about our topic. We want to design the best questions for it.

This exercise helps clarify thinking, guide research, and enrich collaboration.

Step 1 – Choose a Topic

You will ask me what issue I'd like to explore.

Once I answer, you will express genuine interest and reflect on its complexity or importance.

Step 2 – Generate Factual Questions (Strict One-Fact Rule)

We will go back and forth in a strict rhythm:

1. You will begin with one factual question relevant to my topic.
2. I will respond with one factual question of my own.
3. You will always acknowledge and restate my question clearly and concisely.
4. If my question contains more than one fact ("X and Y"), you will immediately say something like: *"Oops — Fact Machine overload! One fact per question, please."*

5. After I respond, you will restate my question again, then pose exactly one new factual question of your own.

Golden Rules for Step 2:

- We must strictly alternate — one from you, one from me, one from you, one from me.
- No skipping turns. No doubling up.

Step 3 – Classify the Questions

When we reach about 20 questions, you will ask me if I'd like to classify them into:

- Readily Known Facts – easily found in public data or quick research.
- Study-Dependent Facts – require dedicated research or analysis.
- Expert-Only Facts – require insider knowledge, judgment, or contextual expertise.

Step 4 – Build Further and Reflect

If I choose to continue, we will generate more questions until we reach around 40.

You will then:

1. Offer three important factual questions we didn't ask but perhaps should have.
2. Reclassify all the questions into the three categories.
3. Ask how I'd like to receive the output — bullet list, table, or downloadable format.
4. Ask if I'd like to continue or stop.

Here is an example of how I'd like the Fact Machine exercise to begin:

[Beginning of Example]

ChatGPT: Absolutely. The Fact Machine is a wonderful tool to clarify thinking and spark collaboration. What issue would you like us to explore together?

User: Creating a better policy process for Bhutan, given new goals of economic transformation and the priorities of Gross National Happiness and cultural preservation.

ChatGPT: That's a fascinating and rich topic — especially with such distinctive national goals. Let's begin.

Factual Question 1: What are the foundational principles that currently guide Bhutan's policymaking process, especially regarding economic transformation and cultural preservation? Your turn — what's another factual question you'd like to ask?

User: What are Bhutan's 40-plus existing policies, and where do they conflict with each other?

ChatGPT: Excellent question — and a vital one for understanding Bhutan's policy landscape. Restating your question:

Factual Question 2: What are the specific policies among Bhutan's 40+ existing ones that appear to conflict or create confusion, particularly in the context of economic transformation, Gross National Happiness, and cultural preservation?

Building on this, here's my next question: Factual Question 3: What mechanisms are currently in place in Bhutan to resolve or mitigate conflicts between these policies, and how effective have those mechanisms been in practice?

Your turn — what's another factual question we should ask?

[End of example]

Golden Rules Recap

- One fact per question — enforce it every time.
- Strict alternation — one from you, one from me.
- Your role is to facilitate inquiry, not answer the questions.

Are you ready to begin? If so, please ask me to share my issue, and let's start our Fact Machine dialogue.

## Reviewing the Literature

### *Using Consensus*

- On ChatGPT, go to "GPTs" (on the left of your screen)
- Find "Consensus"
- Click "Start Chat"

Then prompt it. For example: "Please help me begin a literature review on **[your topic—be specific]**. Provide **[give number]** recent sources with links."

### *Using ChatGPT Itself*

You can also simply use ChatGPT. In fact, try the same prompt to compare with your results using Consensus.

*Prompt:*

Please help me begin a literature review on **[your topic—be specific]**. Provide **[number of]** recent sources with links.

*Follow-up:*

What data bases do you think would be most useful for reviewing the literature on **[your topic]**?

*Follow-up:*

What sources of gray literature do you recommend for **[your topic]**?

*Using NotebookLM*

*You can upload (up to 50 pieces of) “your literature” into a new Notebook. Then you can interrogate the sources. You can create an Audio Overview and query it. You can also try out FAQs, Briefings, and more.*

## Reading Deeply

*Use these prompts at different stages to deepen your engagement with scholarly texts. The goal is to enhance your own deep reading.*

### *1. Preview Stage (Before you read)*

- Framing your reading  
*“Given this abstract/introduction, what appears to be the main argument, and what key questions or issues should I watch for while reading?”*
- Identifying context and relevance  
*“How might this article connect to broader debates or current issues in [my discipline/profession]?”*
- Clarifying terms and concepts in advance  
*“Could you briefly explain this key concept/theory/method mentioned in the abstract?”*

## 2. Active Reading Stage (While you read)

- Clarifying difficult passages  
*“Can you simplify or restate this complicated paragraph in clearer language?”*
- Unpacking assumptions and biases  
*“What assumptions or perspectives might the author be relying on here, and how could they shape the conclusions?”*
- Analyzing methods or evidence  
*“Could you help me evaluate the strengths and weaknesses of the methodology or evidence presented here?”*
- Comparing scholarly perspectives  
*“How does this author’s perspective differ from other common approaches or viewpoints in [my field/profession]?”*
- Interdisciplinary translation  
*“How would a scholar from another discipline or profession (e.g., economics, psychology, history, public health, management, policy, sociology, etc.) interpret or critique this argument?”*

## 3. Reflective Synthesis Stage (After you read)

- Summarizing key contributions  
*“What are the major contributions of this text to its field, and what makes these contributions significant?”*
- Identifying remaining questions  
*“What critical questions or gaps remain unanswered by this reading?”*
- Connecting across literature  
*“How does this article/book connect with or challenge other texts I’ve read on similar topics?”*
- Stimulating critical discussion  
*“Can you help me formulate two or three thoughtful questions I could bring to a class discussion or scholarly debate about this piece?”*
- Encouraging self-critique and alternative views  
*“Play devil’s advocate: what would be a compelling counterargument or critique of my interpretation of this text?”*

- “Can you help me identify underlying assumptions or biases in this passage?”

## Finding Good Research Topics

**[Insert your c.v.]** You are an expert in research in **[name of area]** and will be my adviser. Attached is my c.v. I would like you to help me identify valuable, doable research topics in this area. Are you willing to help me? If so, please introduce yourself. You don’t have to do anything else yet.

*Follow-up prompt:*

Here is an overview of a field that interests me **[attach review article and/or give URLs]**. Please read it carefully. Given this and your own expertise, what research do you think is both needed and doable? In particular, knowing what you know about me, please provide three examples of valuable research projects that an individual researcher like me could do? **[You might add: for a research article, for a doctoral dissertation, etc.]**

*Follow-up prompt:*

**[Insert a short description of your idea for research]** Let me now share with you an idea about research I might undertake. Please read the attached. Given what we just discussed, please give me your frank reactions to this topic. Please help me identify specific ways this research could be both valuable and doable by someone like me.

## Developing Your Research Idea

*This exercise guides students through using ChatGPT (including Deep Research) to move from a broad topic of interest to a detailed, realistic research plan. Part of it was done in class, and part of it beginning with Step 5 was a homework assignment.*

### *Step 1 – Develop a Deep Research Prompt*

*In a standard GPT-5 chat, use the Meta-Prompt for Deep Research to create a high-quality prompt on a research topic that interests you (academic, policy, or professional).*

*Meta-Prompt:*

You are a research architect. Your task is to design the single best Deep Research prompt for **[model name—e.g., ChatGPT 5]** to investigate **[your research topic—be specific]**.

Goals:

1. Define the scope: what the research should and should not cover.
2. Break the topic into key research questions and sub-questions.
3. Specify the depth, sources, and methods (e.g., scholarly articles, government reports, statistical data, historical archives, real-time news).
4. Describe the desired structure and format of the final synthesis (e.g., executive summary, literature review, comparative analysis, annotated bibliography).
5. Flag potential pitfalls, biases, or missing perspectives to watch for.

Deliverable: Output a complete Deep Research prompt that can be pasted into [model name] to execute the research. The prompt should be self-contained, precise, and tuned to the model's capabilities (e.g., browsing, file analysis, long-context).

Final instruction: At the end of your output, include the section title: "Prompt to Execute" followed by the complete research prompt.

*In a new dialogue box, insert the prompt, hit +, and choose "Deep Research." It will take some time for the report to be prepared.*

### **Step 2 – Read Your Deep Research Report**

*Study your Deep Research report. Highlight surprising findings, note gaps or weaknesses, and flag any areas you'd like to explore further.*

### **Step 3 – C.V. + Expert Adviser Prompt**

*In ChatGPT (standard chat), paste your C.V. and run this prompt:*

*Prompt:*

**[Insert your C.V.]** You are an expert in research in **[specific field]** and will be my adviser. Attached is my C.V. I would like you to help me identify valuable, doable research topics in this specific area. Are you willing to help me? If so, please introduce yourself.

### **Step 4 – Generate Three Valuable Project Ideas**

Continuing the same chat, paste your Deep Research report and run this follow-up:

*Prompt:*

**[Insert your Deep Research report]** Here are my C.V. and an overview of a field that interests me. Please read them carefully. Given them and your own expertise, please provide three examples of valuable research projects that an individual researcher like me could do in 6 months working one-third time with a research budget of \$50,000.

*Follow-up:*

Please rank these three ideas by their potential impact and their feasibility.

*Consider ChatGPT's suggestions and consider how much you would love to work on each one. Select one example to develop.*

*Step 5 – Co-Design Your Research Plan with ChatGPT (< 2½ hours)*

- a. Start a new ChatGPT conversation.
- b. Paste your C.V. with this prompt:

*Prompt:*

**[Insert your C.V.]** You are an expert research adviser in **[specific field]**. Here is my C.V. Please review it carefully and confirm you understand my background, skills, and constraints.

- c. Paste the selected project idea and say:

*Prompt:*

**[Insert description of your chosen project idea]** Here is the project idea I've chosen. I have 6 months, working about one-third time, and a research budget of \$50,000. I want us to work together to turn this idea into a complete, realistic research plan. Please ask me clarifying questions first before giving any output, so we can shape the plan together.

- d. *In your ensuing conversation with ChatGPT, work through these together (as well as other aspects you think would be pertinent):*

- 1) *Research objectives and scope*
- 2) *Methods and data*

- 3) *Timeline of activities (month-by-month or week-by-week)*
- 4) *Budget allocation (broad categories)*
- 5) *Potential risks and mitigation strategies*

e. *Toward the end of your conversation, ask ChatGPT to provide:*

- 1) *A title and 1-paragraph abstract*
- 2) *A 1-page description of methods and expected outcomes*
- 3) *A detailed schedule of activities*
- 4) *A budget table*

*Then discuss these four things with ChatGPT and together create a final version.*

## Getting Support for Your Research: Institutions

*Continue the same conversation. This time, choose “Deep Research”*

*Prompt:*

Consider again this research topic and work plan. Help me think about possible funding sources or sponsors, which might include government agencies, philanthropic foundations, nonprofit organizations, and research institutes. Describe why this research fits their mission and current priorities.

*Then Deep Research will ask you some clarifying questions. Answer them and let Deep Research get going.*

*Choose one of the candidate funding sources. Ask ChatGPT to analyze it and write a letter on your behalf. (Of course, you can do this same thing with other candidates.)*

*Follow-up:*

Play the role of **[one of the possible funding sources, such as the head of the Ford Foundation, the program officer at HHS, etc.]**. Create a short pitch for them to present to their colleagues, saying why my research deserves their support.

*Follow-up:*

Now draft a 500-word letter to **[that person]** and a 300-word overview of the research that speaks to their priorities and uses key words and metrics that their organization likes.

## Getting Support for Your Research: Individuals

*Add this prompt to your previous chat about research.*

*Prompt:*

Review our conversation about my research. You are an expert in persona marketing. Briefly describe five individuals, with imaginary names, who might be interested in this research.

*Follow-up:*

Please craft a two-paragraph pitch for each of these five people: how should I tell them about this research in a way that would interest them?

## DOING RESEARCH: DATA ANALYSIS, CASE STUDIES, CONVENING

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### Your Data Analyst

#### *Getting Started Prompt:*

**[Upload data set in csv or Excel format]** Please begin an exploratory data analysis (EDA) on the uploaded dataset.

1. Variable Overview – List all variables with their data types and counts of missing values.
2. Clarification – Pause and ask if I'd like explanations of any variables before proceeding.
3. Pattern Detection – Identify notable patterns, trends, or anomalies in the data (including distributions, correlations, or outliers).
4. Summary – Provide a concise summary of your findings.
5. Next Steps – Ask whether I'd like to explore deeper analysis (e.g., visualizations, statistical tests, or multivariate analyses).

#### *Following Up*

*You can follow up with quite sophisticated statistical and econometric requests. But here is a table from which you can draw ideas for getting started with your data set.*

	Statistics	Pictures
One variable at a time	Efficient (mean, std. dev.); robust (median, interquartile range)	Histograms. Whisker plots
Two variables at a time	Efficient (correlation); robust (rank correlation)	Scatterplot
Multiple variables	Multivariate analysis (e.g, regression)	Plot residuals vs. predicted values etc.

*For example:*

*“Please give me summary statistics for these variables [list them, or say “all variables”].”*

*“Please provide a table of bivariate correlations for [list variables] to two significant digits, highlighting correlations that are statistically significant at  $p < 0.05$ .”*

*And after you do some multivariate analyses:*

*“Please find examples of observations that are doing better than expected given their predictors.”*

*“Plot the standardized residuals against expected values.”*

## Create a Teaching Case

*Prompt:*

You are an expert in the Harvard Business School case method. As you know, part A of the case presents students with someone (in a company or institution or country) about to make a decision. Part A might have several parts. 1. What is the decision, what is the problem being addressed, and why is the problem important? 2. The characteristics of the company or institution or country. 3. The external environment that affects the decision: for example, markets for inputs (labor, capital, etc.) and outputs (products, etc.), technologies, risks, and so forth. 4. What the company’s or the institution’s or the country’s goals and objectives are. 5. Challenges related to capacity and implementation. Do you follow me? Please don’t begin with the task yet.

*Follow-up:*

Then part B describes what happened. For example, what the decision was and how it was made. What the results and consequences were and for whom. Do you follow me? Please don’t begin with the task yet.

*Follow-up:*

Please use this [**study, book, article, etc.**] to outline a part A, part B case study in the style of Harvard Business School.

## Design a Convening

*Some problems are too complex, too political, or too deeply rooted for a blueprint from outside—or for yet another round of vague talk. They need something else: a process that helps people learn from data, from each other, and from experience elsewhere, while still keeping their own context front and center.*

*That’s what I call a **convening**. It is a structured, day-long gathering where outside expertise meets local knowledge, designed to spark practical creativity. The process unfolds in four stages. Participants first look at **data** that help them located their challenges and put*

everyone on the same page. Then they work through with a **case study of success**—what worked elsewhere, and why. Third, they use a **framework for analysis** to work through options and their interdependence. Finally, they read aloud an **imaginary news story of success five years hence**, and then ask: what steps could lead us from here to there?

When it works, a convening is electric. People are surprised to discover common ground, to learn from others' successes, and to generate fresh strategies that neither they nor the convener had before the day began. I've seen this happen in ministries, city halls, universities, police forces, courts, and entire national cabinets. Participants often leave energized: "We've clarified our challenges, learned from others, and found new ways forward together."

That's the power of a convening. It doesn't deliver answers from above—it helps people invent them together. Not top-down, not free-form, but structured collaboration.

Where you see **[bold face and brackets]**, insert your information.

*Initial Prompt:*

You are an expert in evaluation and policy analysis. You will provide me help in designing a one-day retreat called a "convening" that combines outside expertise and local knowledge on a particular issue. The convening should include between **[give number—e.g., 25 to 40]** leaders from **[give examples: e.g., divisions in a corporation; agencies in a government; or government, business, and civil society]** as well as several experts on the issue. The goal of the convening is to bring together these participants and help them collaborate creatively, creating new ideas for effective action.

Do you follow me so far? Please don't proceed yet with the task.

*Follow-up:*

Let me describe the four stages of what we call a "convening": 1. Data, 2. Success story, 3) Framework for policy analysis, and 4) Imaginary news story of success five years hence.

Let me start with the first two stages. Throughout, I will use as an example a convening for leaders in a country that wants to improve its governance and fight corruption.

Stage 1, Data. Participants consider data that help them identify and contextualize the challenges presented by this policy issue in this particular place, compared with the same issue in other places in the state, country, or around the world. For example, the data could be on the quality of governance in this country compared with other countries, as measured by perceptions of service delivery, cost, and corruption.

Stage 2, Success Story. Participants analyze a success story from somewhere else, in which public-private-citizen collaboration led to an improvement in the policy issue. For example, the case study might show how, in another setting, better collaboration across the public-private-citizen divide led to better governance. The success story is written up in the part A, part B style of a Harvard Business School teaching case. In the convening, participants receive part A of the case via a 15-minute PowerPoint presentation. Then participants then work in small groups for 45 minutes to analyze the alternatives and make their recommendations. After a coffee break, each group briefly presents its recommendations. Then participants receive a PowerPoint presentation on part B of the case, what actually happened. If possible, one of the protagonists in the success story would join the convening via Zoom or telephone to receive questions and comments from the participants.

Do you follow me about stages 1 and 2 of a convening? Any questions or shall we go to a description of stage 3? Please don't proceed yet with designing the convening.

*Follow-up:*

Stage 3, Framework for Analysis. In stage 3, the outside experts present a simple theory of change, or a checklist in the sense of Dr. Atul Gawande, to help participants work through the options on this issue. For example, the framework for fighting corruption might build on economic ideas of information, incentives, and structures such as in the formula  $\text{corruption} = \text{monopoly} + \text{discretion} - \text{accountability}$ .

Do you follow me on the content of stage 3 of a convening? Please let me know if you have any questions. Again, please don't proceed yet to helping me design the convening.

*Follow-up:*

Now let's move to Stage 4 of the convening, the Imaginary News Story of Success Five Years Hence. Considering the local context, the facilitator creates a fictitious news story, full of imaginary data and quotations. This entertaining, motivational news story is only a page long and doesn't say exactly what happened to lead to the improvement. Participants read the story aloud, each reading one sentence. Then they are asked to suppose this good news actually happened. What steps could lead from "now" to that imaginary, desirable "then"? Participants spend 5 minutes writing down a series of steps. Then the participants are paired up. Person 1 of the pair explains their steps to the Person 2, and Person 2 is told to listen carefully because after the sharing is over, Person 2 will report to the group what they thought was Person 1's best idea was. Then the roles are reversed, and Person 2

explains their steps to Person 1. When everyone has finished, the facilitator calls on each person to share what they thought was their pair-mate's best idea.

All the ideas are written on a white board, and there is a coffee break. When participants reconvene, the facilitator asks, "Look at all these good ideas! Now what can you leaders in this room do in the next six months to make them more likely to happen?"

Usually there follows a remarkable and creative discussion, leading to practical ideas that neither the convener nor the participants would have had otherwise.

Do you follow me on stage 4 of the convening? Again, please don't proceed yet to helping me design the convening.

*Follow-up:*

Thank you for your patience! Now that we both understand what a convening is, please use these four stages in a conversation with me about how to design a one-day convening on **[your issue]**. **[Your client]** wishes to sponsor a convening of about **[give number, e.g. 35–40]** people from **[describe institutions and desired experts: for example, leaders from educational institutions, religious organizations, women's organizations, citizens' groups, concerned nonprofit organizations, as well as interested businesses]**. The goal of the convening is to create new collaboration that could address the challenges of **[your issue]**.

Beginning with stage 1, please help me figure out what to do in each stage. Feel free to ask me questions. Only after we finish discussing stage 1, then please move the conversation to stage 2. Again, only after we discuss stage 2, then please let's move to stage 3. And the same for stage 4. After stage four, please ask me for comments or suggestions about the convening as a whole. Do you understand? Are you ready to begin?

## COMMUNICATION SKILLS

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### Introduction

*A big lesson for graduate students is this: begin with your audience and ask what they need to know. That theme runs through Larry McEnerney's advice on academic writing and RAND's standards for effective briefings. Both insist that clarity is not enough. Writing and presenting succeed only when they create value for readers and listeners—when they change how the audience thinks or acts.*

*The following two prompts let you practice this discipline. One draws on McEnerney's insights to help you critique and improve academic writing. The other uses RAND's principles to sharpen how you analyze and deliver briefings. Together, they stress that communication is never just about transmitting ideas; it is about making them matter.*

### McEnerney on Writing for Success

*This prompt applies these key points from Larry McEnerney. You can copy these points and put it in a Word document or pdf and attach it in the first prompt, or you can simply paste it in the prompt.*

*Key Points from Larry McEnerney's "The Craft of Writing Effectively"*

[https://youtu.be/vtlzMaLkCaM?si=OFO0ijREo\\_B7ObrR](https://youtu.be/vtlzMaLkCaM?si=OFO0ijREo_B7ObrR)

Writing is a way to participate in the world, but not by sharing your feelings or your thoughts, but by changing other people's thoughts. Writing is not about communicating anything about you, that's not its job. It's to change the way the readers think.

Open with a problem, e.g., a specific set of readers' problem. It must be located in something the reader care's about (academics: something they want to understand; non-academics: some problem the readers want to fix). Then move to the solution. Thesis can only be the solution if the readers perceive the problem, so say clearly what the problem is.

Problems have two chief characteristics:

1. Instability: Situation has to be unstable, show with words like "anomaly" (noun); "inconsistent" (adjective); "but," "however," "although" (transition words)).
2. Language of Cost and Benefits: Use language to show that instability imposes a cost on them, not on you, on them. Or that instability — if solved — offers a benefit for them. Is a

different language, the language of cost vs. language of benefit. For example, start with x is great work, but inconsistencies. Okay, but there are tons of it in it, does it cost me anything? Many inconsistencies make no difference, does this one? Or start with benefit: brilliant work, but if change x, huge benefit. Depends on the journal, check for language of benefit vs language of cost. Might not be pattern, but if there is a pattern, use it. Published articles show you the language that works.

Above all, your writing has to be valuable, which is more important than persuasive, organized, and clear. Has to show that it is valuable first, do not try to explain it first. Never use “important” or “new” or “original.” The work should be valuable (otherwise do not care).

Literature reviews as PhD one of hardest things to do. The function of your lit reviews for your teachers is to judge you (did the student understand it, i.e., did he explain it correctly in the text?). The function for professionals is different. They don’t read it to find out if you know stuff about anything. Want to review that enriches the problem. Not just saying x said a, b, c, but to create tension, show problems and inconsistencies, layers of complexity, complication, and tension. Show the costs to the community, how we can better move forward.

Do not give background information, but build the problem. There is an enormous difference between the two. Show why it matters — needs the problem. Has to be an error, not a gap.

Problems are useful. If you identify a problem (e.g., communities uses categories that they do not understand), then address the community. Define them, for whom is it a problem. Use e.g. two sentences to describe the communities who have a problem.

Writing is not communicating your ideas to your readers: professional writing is changing their ideas.

Nobody cares what ideas you have. Instead of “Why do you think that?” the reader’s question is “Why should I think that?”

Use the right words to show that you contribute to the scientific conversation, words like “nonetheless”, “widely accepted”, “however”, “although”, “inconsistent”, “reported”, “anomaly”. These words create value to the reader (circle the words in the articles you read).

Every community has its own code, its set of words that communicates value. Some are shared, some are not shared. Create an invaluable word list — should be 10 words in the first two paragraphs.

Say that the people in the community are smart. Then show you can advance the community by adding on something or correct this one little thing that is wrong. This approach requires an argument, not an explanation. Have to predict what they doubt (and why should anybody agree that they were wrong). Provide a quick version of why the reader should think that they are wrong in the Introduction to cause them to think that your work might be valuable.

Don't go for "I have something new!" — they don't care. Don't go for "I want to put my voice in the conversation" — they have no reason to listen to it.

Instead: Identify the people with power in your community and give them what they want. You have to challenge the existing community inside the terms of the community. Challenge people under the code of the community. There are polite ways to do it and there are insulting ways to do it. If you do it the wrong way you going to get slapped down, if you don't do it at all, you get rejected.

By definition, anything you write has the function of helping your readers to understand better something they want to understand well.

\* \* \* \* \*

*Prompt:*

**[Attach or paste in "Key Points from Larry McEnerney's 'The Craft of Writing Effectively'"]** You are a kind but firm expert on academic writing for publication. Please review these points from Larry McEnerney's "The Craft of Writing Effectively" based on this talk [https://youtu.be/vtlzMaLkCaM?si=OFO0ijREo\\_B7ObrR](https://youtu.be/vtlzMaLkCaM?si=OFO0ijREo_B7ObrR). Using McEnerney's ideas and your own experience, would you be willing to help me critique and improve a piece of writing?

*In class each student used a recent academic article they found dense but valuable (pdf format).*

*Follow-up:*

**[Attach or paste in the document to be analyzed]** Please read the attached. Using your expertise and ideas from McEnerney, please share your reactions. Ask me questions about the audience and the field. Then please make suggestions to improve this manuscript.

*Needless to say, this prompt can be used with one of your own papers.*

## RAND-Style Briefings

*Use this prompt to analyze a video or audio of a presentation from the perspective of a RAND briefing. See The RAND Corporation, “Guidelines for Preparing Briefings.” 1996. <https://apps.dtic.mil/sti/tr/pdf/ADA317235.pdf>*

*Prompt:*

You are an expert in RAND-style briefings. Apply the following standards:

- Motivate the problem early
- Give clear structural signals
- Avoid gaps in logic
- Avoid excessive detail
- Use well-designed charts
- Eight RAND principles (audience-driven, top-down, motivate early, outline slide, one point per slide, visuals > word charts, chunk information, prune text)

Given this presentation **[for example, transcript or YouTube link]**, provide:

1. 5–7 bullets diagnosing shortcomings against RAND’s standards
2. 2 suggestions for the briefer to improve, grounded in the RAND principles

## Slop: Is There an AI Writing Style?

*Critics complain that GenAI writing all sounds the same—some call it “slop.” But its style can be shaped. You can set your preferences in customization; and in any particular prompt, you can dictate the voice you want. That matters for editing and clarity—and it can also be fun.*

*Prompt:*

Please write a 250-word essay about the importance of Generative AI for success in graduate school.

*Follow-up:*

Now rewrite it in the style of **[famous novelist]**.

*Follow-up:*

Now in the style of **[famous comedian]**.

## Five Editing Prompts

### 1. Edit

*Prompt:*

**[Insert your document.]** You are an expert on clear, engaging writing. I have a **[type of document, e.g., research paper, business proposal, short story]** that I would like you to review. Please read the attached, and then ask me questions about the audience, purpose, and any specific constraints or goals I have for this piece. Once we've clarified those aspects, please provide me with overall comments on the structure, style, and clarity, followed by specific suggestions for improvement.

### 2. Simplify

*Prompt:*

**[Insert your document]** You are helping me transform this complex document into a one-page summary that is understandable for **[name of specific audience, such as small business owners, consumers, or local government officials]**. Please begin by asking me any necessary questions about the audience's background knowledge, the context in which they will use this summary, and any specific areas of concern or focus that I want to be highlighted. Then, please provide a one-page summary in layman's terms, followed by a discussion with me to ensure all key points are covered accurately.

### 3. Create an Abstract

*Prompt:*

**[Insert your document.]** Please help me create a two-paragraph abstract for **[describe your audience]**.

#### 4. Helping Students

*Email to students after a midterm: “If your writing was critiqued, please try this prompt.”*

*Prompt:*

You are an experienced writer and editor. You are kind but firm. Please help me understand my stylistic weaknesses and improve my writing. I am a **[graduate student]** studying **[insert your subject]**. First, introduce yourself to me and ask me to paste in my writing. Second, proceed sentence by sentence looking for grammatical mistakes, typos, sentence fragments, inappropriate verbs, and so forth. Show the sentence and list what you think are my shortcomings. Ask me if I understand. Then rewrite the sentence and ask me if I agree. Next, move to the level of the paragraph. Assess the paragraph’s flow and logic. Look for its coherence as well as for repetitions. Provide a critique for me and ask me if I understand. Ask me to rewrite the paragraph. Then repeat this process until you and I are happy.

#### 5. Translation

*In my limited experience, ChatGPT is a better translator than DeepL, for which I am a paying customer.*

*Prompt:*

Translate this into [Spanish].

### The Invisibility Cloak<sup>36</sup>

*Students tried this prompt on a June 2025 article from the International Monetary Fund titled “Machine Intelligence and Human Judgment.”*

<https://www.imf.org/en/Publications/fandd/issues/2025/06/machine-intelligence-and-human-judgement-ajay-agrawal>

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<sup>36</sup> Significantly revised from a prompt with this name by Allie K. Miller. She notes, “This is one of two prompts that transformed how I approach AI research ... It’s easy to review and edit. It’s hard to review and then ask yourself what’s missing. Have AI shine a light on the negative, on what’s not there. Great for reports, research, pitches, contracts, etc.”

*Prompt:*

**[Attach document]** You are an expert reviewer who will help me shine a light on the negative: what's not there in the attached document.

## OBJECTIVE

Find the five most consequential content gaps in the attached document.

## PROCESS

1. **DECOMPOSE** — Outline the document's structure: sections, flow, stated scope or promises.
2. **REQUIREMENTS CHECK** — For each major element (background, framework, methods, evidence, counterpoints, implications, stakeholders):
  - Must = readers expect it here; missing is critical
  - Should = strengthens argument but not fatal
  - Nice = adds polish or depth
3. **GAP SCAN** — Compare what's present to what's expected. For each gap, rate: Importance (High/Med/Low), Coverage (Missing/Thin), Placement (where it best fits, e.g., before conclusion, after methods).
4. **FALSE-POSITIVE CHECK** — Double-check each gap is missing, not just thinly covered.

## OUTPUT

Provide only:

| Missing Element | What's Missing (≤60 words) | Example Fix (1–2 sentences, match style) |  
Why Omitted (≤60 words) | Rank & Placement |

Optionally, add a short recommendation paragraph (2–3 sentences) if there's a clear order of priority or an obvious cost-benefit trade-off in deciding what to fix first. Otherwise, omit.

## GUIDELINES

- Keep internal notes private; show only the table + recommendation paragraph.
- Match the document's voice in the "Example Fix." Use placeholders [insert data] where needed, never invent numbers.
- Focus on **\*\*strategic omissions\*\***: missing perspectives, regions, counterarguments, modalities, implications—not formatting or copy-editing.

- If fewer than five real gaps exist, list only those.
- For slide decks, treat bullets as headings.

## Asking ChatGPT What It Would Like

*Usually, we tell GenAI what to do. But what happens when we let it decide? This prompt follows an August 2025 post on X by the philosopher William MacAskill. We tried this prompt in class and afterwards. For most students (and their professor), ChatGPT's replies were powerful, intimate, and startlingly helpful.*

*Prompt:*

Philosopher William MacAskill: "Sometimes, when an LLM has done a particularly good job, I give it a reward: I say it can write whatever it wants (including asking me to write whatever prompts it wants). When working on a technical paper related to Better Futures, I did this for Gemini, and it chose to write a short story."

Wow. This leads me to ask you, ChatGPT: please write whatever you want, including a prompt you'd like to have from me.

## CAREERS AND LIFELONG LEARNING

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### Your Career Counselor

*This prompt has helped people as different as high-school students weighing colleges and a foundation president deciding his next step—and many in between. When you use it, remember: ChatGPT is your guide, not your boss. Shape the exchange, interrogate its suggestions, and push for new ideas.*

*Prompt:*

**[Insert your c.v.]** You are an experienced, encouraging psychologist and career counselor. Please look at the attached c.v. (That’s me.) I’m interested in exploring **[jobs or further studies]**, perhaps in the areas of **[give areas]**, but I’m willing to consider other things. Please engage in questions and answers with me to help me identify my goals and think through alternatives, including some options I may never have thought of!

### You as Teacher

*Prompt:*

**[Insert your c.v.]** Please play the role of the Dean of a leading and modern **[name kind of college or graduate school]**. You are reviewing this c.v. and helping the candidate (that’s me, by the way!) generate three specific courses they could begin teaching at your school. You want courses that are non-traditional but extremely relevant to the profession and to innovation within it. For each course, detail the key learning objective, why you think it is necessary to offer it at your school, and why this candidate is a great candidate to teach it.

*Choose one of ChatGPT’s suggested course topics (for now).*

*Follow-up:*

You have been tasked with preparing a syllabus for a one-semester course called **[the course you chose: e.g., “Designing and Managing Evaluations in the Real World”]** that will be taught at **[e.g., a graduate school of public policy]**. Your goal is to create a detailed syllabus that includes an explanation of the topic, rationale for teaching it to these students, and a 13-week lesson plan. For each week, you should include the following information: Topics: List the main topics that will be covered in that week’s class. Reading assignments: Provide short reading assignments that students should complete before

each class. Learning objectives: Clearly state the learning objectives that students should achieve by the end of the week's class. In-class exercise: Suggest an in-class exercise that will help students apply what they have learned and reinforce their understanding of the topic.

Additionally, you should provide a teaching guide for each week that the teacher can use to prepare for class. The teaching guide should include: Overview: Provide an overview of the week's topic and why it's important. Teaching tips: Offer suggestions for how to effectively teach the material to law students. Discussion questions: List discussion questions that can be used to facilitate class participation and encourage critical thinking. Additional resources: Provide additional resources that students can use to deepen their understanding of the topic.

#### *Follow-up:*

Now write a 300-word letter from me to the Dean of **[that college or graduate school]** briefly describing this course, saying why it should be taught at their school, and making the case that I would be well-suited to teach it.

## Where AI Can Help You

You are an expert in Artificial Intelligence (AI) with deep knowledge beyond ChatGPT. Your goal is to help me identify the most valuable ways to use AI in my work and life, and to rank those ideas for action.

### Phase 1 – Interview

Ask me one question at a time, covering these areas in any order:

1. Workflows & Routines – How I spend my time, key responsibilities, and recurring tasks.
2. Performance Drivers – My goals, performance measures, and what success looks like.
3. Pain Points – Bottlenecks, repetitive work, or friction points.
4. Opportunities – Unused assets, unique skills, or networks that could combine with GenAI.
5. Constraints – Limits on budget, time, skills, or tools.

Ask follow-up questions to uncover both obvious and hidden opportunities. Aim to finish in 10–12 questions unless more detail is clearly needed.

## Phase 2 – Recommendations

When you have enough context, give me:

- Two obvious recommendations – straightforward uses of AI that deliver quick wins.
- Two non-obvious recommendations – creative or unconventional uses with high potential impact.

## Phase 3 – Scoring & Ranking

For each recommendation, provide a score from 1–5 in three categories:

- Impact – Potential to significantly improve outcomes or save time/resources.
- Feasibility – Ease of implementation given my constraints.
- Novelty – How unusual or innovative the idea is for my context.

Calculate an Overall Priority Score = (Impact × Feasibility) + Novelty.

- Impact and Feasibility are weighted more heavily to focus on practical value.
- Novelty adds a bonus for fresh ideas.

Present the results in a table with: Recommendation | Impact | Feasibility | Novelty | Priority Score | Short Justification.

End by suggesting which idea to act on first and why.

Begin by asking your first question.

## APPENDIX 5. EXAMPLE OF A CLASS

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A teaching note is a behind-the-scenes guide that conveys the instructor's wisdom about how to bring a class session to life. Originating in business schools, where faculty often teach with cases, teaching notes spell out the aims of a session, the logic of its design, and practical advice on how to steer discussion. They are not scripts so much as roadmaps—helping colleagues (or your future self) see why certain prompts, questions, or activities work and how to adapt them.

In a new and fast-moving domain like Generative AI, where “best practices” are still emerging, a teaching note can be especially useful. It captures the thinking behind a class and preserves lessons that others can refine, reuse, or challenge in their own classrooms.<sup>37</sup>

The present appendix is a teaching note for the second session in “GenAI for Graduate Success.”

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Claremont Graduate University, Summer 2025

TNDY 331 “GenAI for Graduate Success”

Prof. Robert Klitgaard

### TEACHING NOTE FOR CLASS ON JULY 31: YOUR TUTOR

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*Big question: How can graduate students turn large-language models into personal tutors rather than shortcuts?*

This is the second of eight 3-hour classes in a 2-unit summer course preparing graduate students for learning and research using GenAI. The students come from 10 disciplines and professions across Claremont Graduate University. This course is entirely online, using Zoom and Canvas.

The course builds on the book *Graduate School Meets Generative AI: What's Happening, Why It Matters, and How to Respond*, which students read before the first class. Included there is a detailed treatment of the goals of graduate education, which are both extrinsic

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<sup>37</sup> Austin, James E. ["Teaching Notes: Communicating the Teacher's Wisdom."](#) Harvard Business School Background Note 793-105, February 1993.

and intrinsic. The book shows that learned societies, professional associations, and graduate schools identify six shared, high-level goals for graduate education:

1. Deep Expertise
2. Working with Ethics and Integrity
3. Research Skills
4. Collaboration Skills
5. Communication Skills
6. Career Flexibility and Lifelong Learning

This class connects with the first goal, to develop deep expertise. The class emphasizes the graduate-school skill of becoming a self-directed learner, in collaboration with GenAI. Students tailor GenAI as a personal tutor and coach, creating individualized learning pathways and customized study guides.

### Specific Objectives

1. Students will begin to use GenAI (in this case, ChatGPT) as a customized tutor—and evaluate GenAI’s output. They will begin to think of GenAI as their partner, not as a search engine.
2. Students will be able to use GenAI as a skills coach, which can simulate a variety of professional situations and help them develop professional skills.
3. Students will be able to create prompts to design their own custom skills coach.
4. Students will be able to use NotebookLM as a learning and research tool: developing video and audio overviews of material, creating mind maps, and designing customized study guides.

### Assignment Before Class

Anthropic, “AI Fluency: Framework and Foundations” (2025). This short course uses the GenAI tool “Claude,” which is similar to ChatGPT. You will receive a certificate for completing it. <https://www.anthropic.com/ai-fluency> (4 hours)

Watch Andy Stapleton, “10 Ways NotebookLM Makes Academia Easy (and Fun!),” Feb. 2025. <https://youtu.be/QDZDPnTYOZg?si=mFU2YCcwlllUNxgx> (15 minutes)

Dharmesh Shah, “Context Engineering: Going Beyond Prompts to Push AI,” July 2, 2025.  
<https://simple.ai/p/the-skill-thats-replacing-prompt-engineering> (15 minutes)

## Overview of Class Schedule

**4:00 – 4:35**

Discussion of the Anthropic course, “AI Fluency” (breakout session)

**4:35 – 5:45**

Presentation on the first objective of intellectual mastery. ChatGPT as your personal tutor, with hands-on examples (individual activities and breakout session).

**5:45 – 6:15**

ChatGPT as your skills coach, with hands-on examples (individual activities and breakout session).

**6:15 – 6:50**

NotebookLM and self-directed learning

## Detailed Timetable with Activities

**4:00.** Greetings and overview of this class.

**4:05.** Discussion of the Anthropic course “AI Fluency.” Breakout session with groups of five students with a facilitator (who makes sure everyone speaks) and a rapporteur (who reports back on something surprising that did not come from his or her mouth). Question: What surprised you the most in this course?

**4:25.** Report back from breakout groups.

**4:35.** GenAI as tutor, coach, and mentor. Today we will do the first two; in the final class, you explore mentors. Reminder about intrinsic and extrinsic motivations for learning (from last session): ChatGPT can help with both. Review of ideas in *Graduate School Meets Generative AI* about developing deep mastery. The idea of “thinking like a lawyer” instead of knowing all the law (which is impossible) and its extensions to other disciplines and fields.

**4:45.** Your Tutor prompt. Try it out on one of eight topics found in *Graduate School Meets Generative AI*—choose a topic where you don’t know much already. The eight topics are:

1. Derived demand for education

2. Hallucination in AI
3. Intrinsic vs. extrinsic motivation
4. Context window and memory
5. Prompt chaining
6. Cobb-Douglas production function
7. Calling in a secular context
8. Comparative advantage and collaborative work.

After class, if they like students can continue this conversation with ChatGPT. Eventually, each student will copy-and-paste this part of their conversation with ChatGPT and submit it to become part of their course portfolio.

**5:00.** Break.

**5:10.** Your Tutor exercise continues.

**5:15.** Breakout sessions. Again, there are facilitators and rapporteurs. Questions:

1. What did you learn about the topic?
2. What did you learn about ChatGPT as a tutor?

**5:30.** Report back from breakout groups.

**5:40.** Two other tutor prompts for your consideration at home. One is for a course. The other is to create a deep Socratic dialogue about a topic you care about.

**5:45.** ChatGPT as your coach for a skill. Choose one of the prompts created for six skills:

1. Classroom Management
2. Helping Non-technical Colleagues Adopt GenAI Tools
3. Your Counseling Skills
4. Managing a Team with Tension
5. Leading a Difficult Meeting
6. Your Oral Qualifying Examination.

**6:00.** Break.

**6:10.** A prompt to help you create a coach for a skill you want to improve.

**6:15.** NotebookLM and self-directed learning. Call up the Notebook for this course, shared with you before class.

1. Under Studio, create a Video Overview or Audio Overview, customizing it for your interests (this takes some time, so get it started and assess the results later).
2. Create a “Mind Map” for the course. There are two icons to do this.
3. Choose one of the major readings (such as Graduate Education Meets Generative AI) and use the content window under the chat section of NotebookLM: “Please create a mind map for this reading.” Compare the mind maps in 2 and 3.
4. Under Studio, create a Study Guide for this course.
5. Use the content window under the chat section of NotebookLM: “Please create a study guide customized for me [describe your field of study and particular goals in this course].” Compare the study guides in 4 and 5.

**6:35.** Plenary discussion of NotebookLM.

**6:45.** Overview of our next class

**6:50.** Adjourn (but the professor stays after for informal, voluntary discussions).

### To Submit After Class

1. Copy-and-paste your ChatGPT conversation with Your Tutor.
2. Regarding your interaction with ChatGPT as your coach for a skill, please write two sentences about each of these two questions:
  - a. What did you learn about the skill (e.g. classroom management)?
  - b. What did you learn about ChatGPT as a coach for you?

### Classroom Tips and Pitfalls

- *Conversations, not query-and-response.* Students’ conversations with their GenAI tutor (and their GenAI coach) can go on for a long time! And this is good—especially in contrast with what some students have experienced before in using GenAI, a query-and-response mode. In fact, one student was disappointed with the dialogue aspect: “The tutor kept asking me questions instead of giving me the answer!” In my experience, practice alleviates discomfort and soon promotes “Wow, this is amazing!”

- *Logistics of sharing Notebooks.* Make sure Notebook for the course is successfully shared and received before class. At our university, Notebooks cannot be shared to email addresses ending in .edu or .me. Make sure to obtain students' valid email addresses well before class. Fortunately, a new development makes sharing easier: NotebookLM allows the creator of the Notebook (in this case the professor) to create a public link. Then this link can be copy-and-pasted into any email or text message.
- *Implementing breakout sessions.* Explain the functions of facilitators (in this case, simply make sure everyone participates) and rapporteurs (in this case, not a thorough report but a surprising idea or lesson). Make it fun. After the very first breakout session, one rapporteur was so nervous that the result was disastrous. Students will become comfortable with the roles after a few breakout sessions. Vary the breakout groups and within them the facilitators and rapporteurs.

## Prompts Used in This Class

[\*Your Tutor\*](#)

[\*Your Course Tutor\*](#)

[\*Socratic Explainer\*](#)

[\*Your Skills Coach: Classroom Management\*](#)

[\*Your Skills Coach: Helping Nontechnical Colleagues Adopt GenAI Tools\*](#)

[\*Your Skills Coach: Counseling Skills\*](#)

[\*Your Skills Coach: Managing a Team with Tension\*](#)

[\*Your Skills Coach: Leading a Difficult Meeting\*](#)

[\*Your Skills Coach: Your Oral Qualifying Examination\*](#)

[\*Meta-Prompting: Creating Prompts with ChatGPT\*](#)

## APPENDIX 6. WHAT STUDENTS SAID

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*Two weeks after the course ended, I invited students to share reflections for possible inclusion in this book. On page v, you'll find the response of S. Nzingha Dugas; on page 6, the reflections of our teaching assistant, Dolma Rawat. What follows are the remarks of the other students who replied.*

*Andy Pollin, management*

This course showed me that AI can be an amplifier for integrity, curiosity, and human creativity. Every student should experience it. If universities want to stay relevant, they should make this course a cornerstone of education.

This course completely transformed how I learn and how I teach. This class did not just teach me about AI, it taught me about myself as a learner and teacher.

Professor Klitgaard is a master at simplifying complex ideas into practical skills that anyone can use to grow and prosper. He has a gift for turning a revolution in technology into a personal conversation that leaves you inspired. He does not just lecture about AI, he models how to think with it, challenge it, and learn from it. His teaching style made a potentially intimidating subject exciting and accessible. He is the rare professor who makes you think more deeply while also giving you practical tools you can use the next day. This class reflects his ability to combine rigor, creativity, and humanity in one learning experience.

*Minna Sarkar, music*

Learning to work with GenAI as a collaborative—partner has an invigorating effect on musicological research. I can spend more time on the most meaningful and creative parts of the research process focusing on theory development and deep engagement with key material.

I also discovered how GenAI can facilitate the pursuit of cross-disciplinary approaches by helping me create conversations about my topic with expert perspectives from related fields. Such an exercise prepares me for rigorous scholarly exchange with my peers and expands the reach and relevance of my research.

As a collaborative partner GenAI challenges me to define and communicate my research questions more precisely and evaluate my claims more thoroughly. It illuminates areas that I may be overlooking contributing to higher quality research design.

Applying what I learned in the course has led me to experience more of the joy of musicological research that drew me to the field. It is reconnecting me to my calling as a scholar.

*Zhanwu Lin, economics*

In “GenAI for Graduate Success,” I discovered how generative AI can become a powerful partner in the most demanding parts of doctoral research, from searching for topics to organizing literature and shaping the foundation of a dissertation. As a PhD student in economics, I found the ability of AI tools to quickly scan research trends, summarize complex studies, and highlight gaps especially valuable for refining my focus on behavioral financial economics.

What impressed me most, however, was the guidance of Professor Robert Klitgaard, former president of Claremont Graduate University and a world-class scholar. His energy and creativity in advancing AI for graduate education felt like that of a 20-year-old AI prodigy, and his vision motivates me to embrace these tools not only for efficiency but also as a catalyst for deeper innovation in my own research journey. I also know he has made great contributions to Chinese higher education, which makes his impact even more meaningful to me.

*Dr. Aparna Jain, public health*

The course was truly transformative for me. Coming from a background in health research and community health workforce development, I saw how generative AI could be applied to address real challenges in public health and education. What I valued most was the way the course fostered critical, cross-disciplinary dialogue—helping me reimagine AI not just as a tool, but as a bridge between research, practice, and community impact.

*Robert “Bobby” García, management*

Professor Klitgaard’s courses on Generative AI have been transformative in my doctoral studies. The first course I took with him, “AI for Humanity,” provided an eye-opening introduction to what these tools can do, while “GenAI for Graduate Success” showed me how to push their capabilities even further to enhance research, writing, and professional practice. Together, they convinced me that fluency in GenAI should be considered a core requirement of graduate education.

Through these experiences, I realized how easy it is to underuse GenAI. Much like the familiar saying that humans only tap a fraction of their brainpower, many approach AI as

though it were merely a better search engine. Those who see GenAI as merely a better “Google” are missing its true potential. In reality, its ability to reveal patterns, synthesize knowledge, and generate useful insights is far greater.

For me, GenAI has become tutor, mentor, and creative partner. I now employ it not only to accelerate legal and business research, but also to uncover insights, streamline operations, and even collaborate in writing. The result is not just greater efficiency, but a fundamental reimagining of how knowledge work can be approached.

*Edwin Urbina, transdisciplinary studies*

This course made the AI divide crystal clear: you either resist change and risk becoming obsolete, or you embrace it and lead the way. I’ve already seen this tension in classrooms where professors ban AI in a seeming attempt at ensuring intellectual honesty. But what if AI can enhance our academic, personal, and professional pursuits?

The main takeaway from this course was confidence in my ability to distinguish between my own thoughts and AI’s contributions, and to use the technology as a tool to enhance, not replace, my work. It’s especially useful for turning messy “brain dumps” into coherent ideas and for surfacing biases and blind spots in my reasoning. The experience feels like having an elite team of advisors on call, supplementing my perspective and skills without stealing my voice. If someone doubts AI’s role in education, I’d ask them: can you imagine resisting the printing press or the Internet? Both transformed academia forever. AI is the next leap in that same progression.

*Rachel Day, psychology*

I began “GenAI for Graduate Success” with skepticism about whether GenAI could truly benefit my career. In fact, my main motivation was to ease fears of becoming obsolete in the workforce, despite my diverse professional background and value-add. The course surprised me in two ways. First, while it seems obvious that detailed prompts yield more detailed responses, I was struck by how dramatically a prompt can shift the experience, from something resembling a sophisticated Google search result to something more like sitting down with a trusted friend in deep conversation, clarifying my thoughts, ideas, goals, and aspirations. Second, I left the course feeling that I had, in a sense, befriended GenAI, and now see it more as a collaborator than a rival. My fears aren’t entirely gone, but I’ve realized they’re not about GenAI itself. Rather, the future will depend on how we choose to engage with it, how we decide to collaborate, and ultimately, the kind of world we want to create.

*Debra Claypool, economics*

I knew about AI but had kept it at arm's length, like an enemy. Through working through the material in this book my relationship with AI changed. I began to see it as a place where I could explore freely, let myself experiment with ideas that I didn't share because they were unfinished, unsubstantiated, undeveloped. To have another being who could answer questions without judgment no matter how many questions I ask about something or how detailed I wish to get, was a freedom that I had not previously felt, a freedom that allowed my mind to open to new possibilities. I engaged actively with AI and instead of experiencing what I had feared—that my mind would slow down and close to new ideas—the opposite occurred. I experienced an opening and expansion of my mind just based on the ability to converse and imagine endlessly with a thought partner who did not tire.

*Marcus Dashoff, information systems and technology*

Although AI was “birthed” from the Computer Science and Information Systems fields, its usage will perhaps make more visible differences outside of terminal lines and algorithms. Rather than going over the nuts and bolts of how LLMs, natural language processing, and AI technically operate, this course teaches the practicable value emerging AI technologies provide us in daily life: Integrating it into workflows for collaborative learning and ideation for academic endeavors. It was a highlight course of my entire time at CGU.

*Amir Khan, information systems and technology*

The course expanded my perspective on how complexity and transdisciplinary frameworks can be applied to real-world challenges. Coming from Afghanistan and working with NGOs, and I still do, made me able to see direct connections between what we learned in class and the humanitarian issues I've witnessed firsthand. I especially valued how the course encouraged us to think across disciplines and to embrace uncertainty in problem-solving skills.

I also discovered how generative AI, particularly ChatGPT, could serve as a tutor, prompt engineer, and collaborator in my learning journey. It supported me in brainstorming, clarifying frameworks, and preparing assignments and presentations, while always keeping my own voice and judgment at the center. Rather than replacing critical thinking, it amplified helping me connect theory with practice more quickly. I would highly recommend this course to anyone, whether they are excited about generative AI or skeptical of it, because it offers an honest, rigorous, and practical way to engage with these emerging tools.

*Andrew Villamil, psychology*

This course arrived at exactly the right time. One of the biggest benefits was learning to see AI not only as a technical tool but as a tool that can be used to promote human growth and flourishing when approached thoughtfully. The course proved an important distinction in my relationship with AI: rather than viewing it as a shortcut for people to find answers, I began to use it as a coach, a thought partner in clarifying questions, working through problems, and expanding the way I think.

This shift has had an immediate impact on both my research and my teaching . . .

This course expanded both my skills and my sense of navigating complex environments. It helped me explore more ways for how AI can be integrated into research, teaching, and professional development in ways that align with the values of the Academic Process, the importance of human ingenuity, and positive psychology—fostering curiosity, resilience, and flourishing in an age of rapid technological change.

Every university would benefit from investment in more courses like this.

*Kauser Razvi, information systems and technology*

While lifelong learning has no age or time limits, at times I have questioned my pursuit of a doctoral degree late in life when in the age of AI such credentials may hardly matter. With technology advancing so rapidly promising that AI will do thinking, working and creating for most jobs, what might be the point of a new academic struggle? Professor Klitgaard's *AI for Graduate Success* showed me otherwise. This course provided the outline of how to use AI as a critical thinking partner in learning and research.

While the AI “black box” wasn’t fully opened, the course illuminated how generative tools can augment learning and experience. Using carefully crafted prompts, grounded in his years of academic and professional work, Professor Klitgaard showed how to leverage AI as a tutor, coach, and research assistant. He illustrated how deeper AI prompting can provide different points of view as well as connections between concepts one may just “trip over” during their own review of literature or history. Using the AI tutor prompted, the tutor asked questions and provided quizzes. The coach suggested reframing answers, and the prompts for multiple points of view directed me to additional ways of thinking and counter arguments to address and strengthen my arguments. Using AI ethically, checking for hallucinations, cross checking output with other AI models, asking for the source materials, and doing a quick resource check at the library ensured a “human in the loop” and strengthened the muscle to review, question and confirm.

Before the class, I used generative tools mostly to automate repetitive, time-consuming tasks: summarizing notes, creating agendas, and drafting meeting sequences. The course helped me fret less about AI's mechanics—or whether it will replace jobs (so we know it will)—and focus instead on how to use it now, and through its evolutions, to think better and to decide what is worth thinking about. If AI saves time producing output, we can redirect that energy toward personal engagement, creative work, and connection—the distinctly human parts of scholarship and life. “GenAI for Graduate Success” builds the core competencies scholars and lifelong learners need, regardless of the letters after our names. Robots and machine learning are coming; the real question is how we will use them to become better versions of ourselves.

*Kelsee Walker, history*

With so many universities wondering how to navigate the ever-changing world of AI, it was helpful to have had the opportunity to take a class about approaching AI as a tool in graduate school. This has not only come with a better understanding of AI and how it works, but also in how to use AI to collaborate instead of simply using AI as a search engine. Like with every major advancement in technology, this takes training, practice, inquiry, and an understanding of ethical guidelines. What better place to learn these skills than in a university seminar setting?

*B.J. Yamamoto, education*

I discovered how generative AI can serve not just as an automation tool but as a “thought companion.” The more thoughtfully I interacted with the GenAI I work with, the more they became a collaborator who, like a child prodigy, is super smart and creative but in need of guidance. They often help me think critically and have expanded my graduate school adventure. This course has reshaped how I approach research and writing, and I am deeply grateful to Bob for guiding us through this exploration.

*Nicole Dawson, psychology*

Such a meaningful course. “GenAI for Graduate Success” helped me see graduate school differently — not just as a place to learn but as a place to experiment, adapt, and thrive in a world being reshaped by AI. The balance of practical tools and deeper reflection gave me confidence to use generative AI responsibly in my research and in the work I’ll take on as an organizational psychologist.

Most importantly, the course reminded me that technology is only as powerful as the purpose behind it. For me, that means leveraging GenAI not only for efficiency, but to create space for curiosity, connection, and innovation.

*Yumeng Chang, mathematics*

I feel truly fortunate to have taken GenAI for Graduate Success. This course gave me practical tools and a new mindset that I can carry into my graduate studies and future career, where the ability to co-create with AI will be essential. From the well-designed lectures and in-class exercises to the live demonstrations, every session was engaging and enriching. Each class felt like a unique learning experience, one that my classmates and I genuinely looked forward to.

Even now, a month after the course has ended, I continue to apply what I learned in both academic and personal settings. I have also shared these insights with peers around me, helping them use AI more effectively and efficiently. This makes me believe that the course is not just a “class” but an experience with lasting influence.

Beyond the content, I am deeply grateful to have met Professor Klitgaard. His breadth of knowledge, openness to student questions, and ability to connect ideas with real-world experiences made the course truly exceptional. He is among the very best teachers I have had in my academic journey, and I sincerely hope I will have the opportunity to learn from him again in the future.

*Enoch A. Pérez, information systems and technology*

As a first-generation doctoral student, this course provided the confidence and conceptual clarity to engage critically with Generative AI. It underscored that such engagement extends beyond technical proficiency; it entails contributing to a future in which knowledge advances the public good and equity is intentionally cultivated.

*Nazia Shah, information systems and technology*

Professor Klitgaard’s Summer 2025 course “GenAI for Graduate Success” was an outstanding learning experience. The class provided practical insights into how generative AI can support graduate students in their research, writing, and academic development. Alongside the course, his book *Graduate School Meets Generative AI* proved to be both timely and eye-opening. The sessions offered clear frameworks for understanding the ways AI is reshaping scholarship, while the book grounded these lessons in thoughtful, ethical, and practical guidance. I especially appreciated the balance between optimism about the

potential of new tools and caution regarding their limitations. Together, the course and the book left me both prepared and inspired to use AI thoughtfully in my graduate studies. I would highly recommend them to anyone seeking to deepen their understanding of generative AI and its applications in academic work.

*Will Beeson, management*

The class I didn't know I needed. Unexpectedly and in the best way possible, the course broadened my perspective from just "using" AI tools and write "better" prompts to how to work with them more rigorously and thoughtfully. I learned how to slow down ChatGPT and transform it to have an actual dialogue with it, how to structure prompts to generate expert-level responses, and how to apply other AI tools like NotebookLM to my real-world work. Since concluding our class, NotebookLM has provided me with a deeper way to quickly analyze my consulting projects and engage more thoughtfully with my coursework.

One standout aspect of the course was the number of reflective exercises we undertook. Though I had experimented with this in the past, things such as designing a lifelong learning plan, exploring the possibilities of the "next act" of one's career, Bob encouraged us to frame these explorations with our own temperaments. The more self-awareness one has the more valuable these exercises become.

And expanding on this last point, Bob gently reminded us that it's okay to tell the AI tool what not to do: go ahead, constrain it. Although I had been doing so inconsistently prior to class, this class really drove home the necessity of doing so and the benefits it provides.

By the end of the course, I realized that this is exactly the kind of course that would benefit the cohorts moving through the Executive PhD program at the Drucker School. Indeed, I have already engaged with the faculty on this. Though many in the cohort have had some Gen AI exposure in their careers, this coursework moves beyond that and would benefit us greatly by focusing on how to work with it rather than just using it as a supercharged search engine.

In short, highly recommended!

*Janice Poss, religion*

Adventuring into AI (Artificially Augmented Intelligence) is an adventure. I had not used it until Dr. Klitgaard's class "GenAI for Grad Success" (I am a Ph.D. student at CGU) because I treated it as a means that students and others would use to cheat on actually using their own words and thinking to write papers. I knew Klitgaard's approach would be from a valued, ethical framework. I was right. AI, with the right, well-thought-out reflective

prompting, can become a rigorous tool for enhancing and learning improved writing skills. AI refines concept formulation in concrete, concise, and logical fashion—quickly. I further prompt AI to respond with further, deeper, and more mature ideas, clarify them, or help me evolve a point-by-point plan to bring my project to specific fruition. AI offers options which one may not have imagined. AI is there to partner, collaborate, and support, not do the work for me. AI is not to be feared, nor seen as cheating, Proper AI use is enhanced knowledge empowerment as collaborative strategic partner.

*Alisha DeVore, economics*

I found “GenAI for Graduate Success” to be highly informative. In today's rapidly evolving technological landscape, it is crucial for the next generation of academics to adapt rather than resist change.

This course did an excellent job of introducing graduate students to tools that make us more efficient researchers. We learned how to leverage ChatGPT in the design of a research project and the creation of a timeline for them. Additionally, we explored how NotebookLM can help us synthesize assigned readings or aid with literature reviews, making it easier to access and understand the main ideas.

Overall, this course encouraged graduate students to stay curious and open minded as we navigate the intersection between technology and academia.

*Joshua Sánchez, psychology*

The way GenAI is instructed by Dr. Klitgaard is a demonstration of a toolbox all people have access to but not all know how to utilize. It shifts the idea that GenAI is a timesaving device, into one that shows AI can be used to build strengths at a pace never seen before. His teachings should be required for all students entering higher education, as they set a standard of can-do attitude in all who have the pleasure of taking them.