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Abstract: The growing presence of generative artificial intelligence (AI) in undergraduate economics writing courses presents both opportunities and challenges. Instructors face concerns about academic integrity and assessing student effort, yet a process-based approach to writing offers a viable solution. This paper advocates for teaching economics writing as a structured, iterative process—encompassing brainstorming, outlining, researching, drafting, analyzing, revising, and reflecting—rather than as a singular final product. At each stage, AI can be strategically integrated to enhance, rather than replace, essential skills in economic reasoning, analysis, and communication. We introduce a framework grounded in two core principles: aligning AI tools with analog skills defined by course objectives and designing assessments that are observable and highly correlated with these skills. Additionally, we present practical classroom strategies and address concerns surrounding originality, equity, and evaluation. The paper also explores broader implications for scholarly production, including AI's role in reshaping comparative advantages between human and artificial intelligence in academic work and their evolving intersection. Ultimately, this approach reimagines writing pedagogy to align with both disciplinary thinking and the realities of an AI-enhanced educational landscape.

***JEL* categories**: A20, D24, I20, J24, L23, O30

Key words: generative artificial intelligence, large language models, teaching writing, assessment, skill, comparative advantage

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1. Introduction

The rapid adoption of generative artificial intelligence (AI) tools—such as ChatGPT, Claude, and Gemini—has significantly altered the landscape of academic writing, raising both pedagogical opportunities and challenges for educators (Korinek, 2023, 2024; Mollick and Mollick, 2024). In undergraduate economics writing courses, where students are expected to engage in analytical thinking, structured argumentation, and evidence-based reasoning, AI's ability to generate polished text with minimal human input presents a pressing dilemma. If students can produce plausible essays on demand, how can instructors ensure that they are actually developing the critical writing and reasoning skills the course is meant to foster?

This paper addresses this dilemma by proposing a new instructional framework grounded in an economic model of scholarly production. Building on insights of Caviglia-Harris (2020) and McCloskey (2019) for a process-based approach to teaching writing in economics, we argue that writing should be treated as a multi-stage process—including brainstorming, outlining, researching, drafting, analyzing, revising, and reflecting—and that AI should be integrated in ways that support, rather than substitute for, student learning at each stage. This shift in focus—from final products to intermediate steps—not only enhances skill development but also reorients assessment toward the observable components of the learning process.

Instructors can tailor AI use depending on the task and learning objective. For routine or mechanical tasks such as formatting references, full use of AI may be appropriate. In contrast, for higher-order skills such as generating research questions or interpreting data, greater emphasis should be placed on analog effort—that is, the cognitive and creative skills students must develop independently. The degree of AI involvement should be calibrated to the

substitutability between AI and human input and the pedagogical value of practicing the underlying analog skill.

Our framework rests on two key pedagogical principles. First, AI should be taught in tandem with its analog counterpart: the specific human skill the course aims to cultivate. Second, evaluation should emphasize intermediate, observable tasks that are highly correlated with these skills and difficult to delegate to AI. Examples include in-class brainstorming exercises, discussion board posts that document the evolution of an argument, peer feedback on drafts, oral presentations, and process memos that explain how AI tools were used throughout the writing process.

This approach contributes to two strands of emerging literature. First, while recent work has explored how economists can use AI to enhance their research (Dell, 2025; Korinek, 2023, 2024), our contribution lies in applying these tools to the teaching of writing in economics. Second, we expand the growing "how-to" literature on AI in higher education by offering an economic perspective that frames writing as a process and rethinks assessment around derivative outputs (Levy and Albertos, 2024; Mollick and Mollick, 2024).

In the sections that follow, we develop this framework for integrating AI into undergraduate economics writing courses. We provide assignment designs and instructional strategies that align with this process-oriented approach and explore the broader implications for scholarly production, including how AI may reshape the comparative advantages of human versus artificial intelligence in academic work.

2. Writing as a Process, with AI support

Treating writing as a process rather than a final product is critical for developing the analytical, empirical, and communication skills that undergraduate students need to succeed in economics. Unlike disciplines where writing may primarily serve to express personal reflection or aesthetic expression, writing in economics is a tool for reasoning and communication—used to clarify hypotheses, articulate theoretical models, interpret empirical evidence, and persuade readers with logical precision. Teaching students to write well in economics therefore involves much more than assessing a polished essay or term paper; it requires cultivating the habits of thought that underlie effective argumentation and economic analysis.

Caviglia-Harris (2020) and McCloskey (2019) argue that economics instructors should adopt a process-oriented approach to writing instruction because it better aligns with how economists themselves think and work. Economists rarely produce polished papers in a single attempt. Instead, they develop arguments iteratively—moving back and forth between ideas, models, data, feedback, and revisions. Encouraging students to engage in this same recursive process fosters deeper learning by making visible the connections between economic theory, empirical analysis, and written communication.

Viewing writing as a process also enables instructors to provide more targeted and formative feedback. When students submit outlines, draft sections, research plans, or annotated bibliographies at intermediate stages, instructors can intervene early to correct misunderstandings and reinforce best practices. These checkpoints help students build confidence and competence gradually, reducing the cognitive load and anxiety associated with submitting high-stakes, final papers. More importantly, process-based assignments encourage

students to reflect on their choices, articulate their reasoning, and revise their arguments—skills that are essential to both economics and effective writing more broadly.

In addition, a process-based approach facilitates more equitable assessment. Final products can be shaped by external factors such as prior writing experience, access to editorial support, or use of AI tools. By contrast, when instructors evaluate multiple stages of the writing journey—brainstorming, outlining, peer review, revisions—they gain a more holistic and authentic picture of student effort and growth.

Finally, treating writing as a process provides a natural structure for integrating AI into the classroom. Rather than using AI to generate an entire final draft, students can use AI selectively at different stages—for example, to generate research questions, summarize empirical papers, or test alternative phrasings of an argument. Instructors can then assess not only what students wrote, but also how they used AI to support their thinking. This transparency reinforces responsible AI use and aligns assessment with pedagogical goals.

3. Integrating AI into the Stages of the Economical Writing Process: A Conceptual Framework

The process-based model of writing offers a pedagogically robust foundation for incorporating AI into undergraduate economics instruction. By breaking the writing process into discrete stages—each emphasizing distinct cognitive and communicative skills—instructors can introduce AI differently across stages in a way that enhances, rather than displaces, student learning. Rather than outsourcing entire essays to generative tools, students are guided to use AI as a scaffold to support their thinking, writing, and revision at each step. This structured

approach promotes economic reasoning, clarity of expression, and engagement with empirical evidence, while also mitigating risks associated with overreliance on automation.

For a simple economic model of scholarly production, consider the production technology for some task Y given by

$$Y = f(L,M)$$

where

L = labor input;

M = machine input (AI).

Different tasks will involve different degrees of substitutability between L and M. Long before the introduction of AI, machines were important inputs to writing technology, as scholars used typewriters, computers, and software for research, analysis, imaging, word processing, citation, and spelling and grammar correction. Conventionally, there has been imperfect substitutability, as shown by the isoquant labeled $\bar{Y}$ in Figure 1:

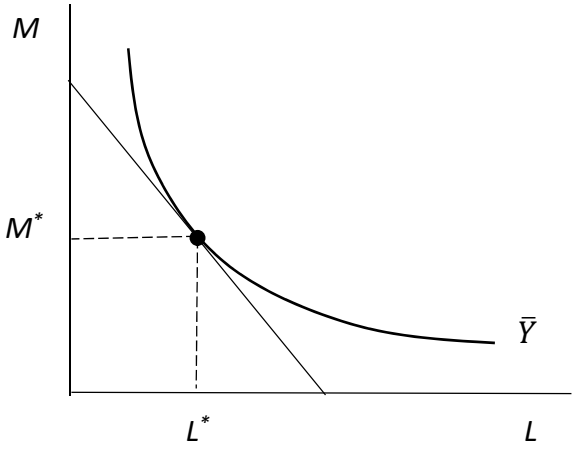

Figure 1: Conventional Writing Technology with Imperfect Substitutability

Let the total cost of any combination of inputs be $C=wL+rM$, where w and r are the unit costs of L and M. This cost is graphed as a downward-sloping line with slope = $-w/r$. The cost-minimizing way of producing $\bar{Y}$, (L^*,M^*), is shown by the tangency between the cost line and the isoquant.

Improvements in AI have had two effects on this situation. First, the relative cost of M has decreased, which has made the cost line steepen (i.e., w/r has increased in absolute value). Second, the substitutability of M for L has increased for certain tasks, which has both flattened and straightened the isoquant.

The impact can vary across tasks. In extreme cases, M may have become nearly a perfect substitute for L. The result is that for these tasks, the cost-minimizing way of producing $\bar{Y}$ is a corner solution with $L^*=0$. This case is shown in Figure 2.

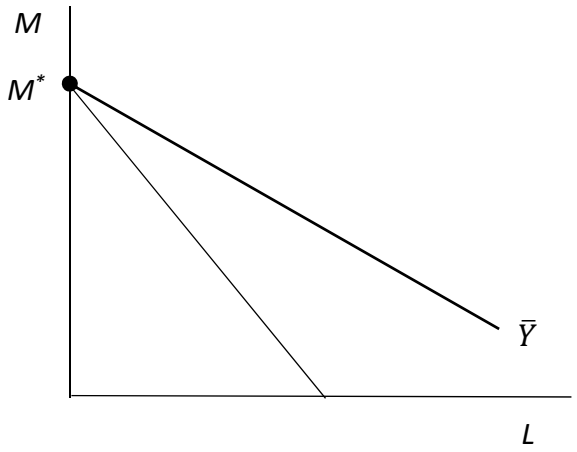

Figure 2. AI Impact on Routine Tasks

It may well be that for many of these tasks, complete switch to AI is in fact desirable because it saves time and effort. Examples include citation generation, bibliography formatting, and formatting and style compliance. In this case, using AI is no different than using a word processor, a calculator, or a spreadsheet to do certain "routine" tasks that previously would have been much more labor intensive. Instruction in this sort of use of AI is to be encouraged.

For many other tasks, there remains at least some substitutability between L and M. Examples include thesis development and argumentation, data selection and analysis, and revision and feedback incorporation. Figure 3 shows such a case. Continuing improvements in AI will doubtlessly increase the ability to substitute M for L for these tasks as well, and so L^*/M^* will continue to decrease, approaching the situation in Figure 2.

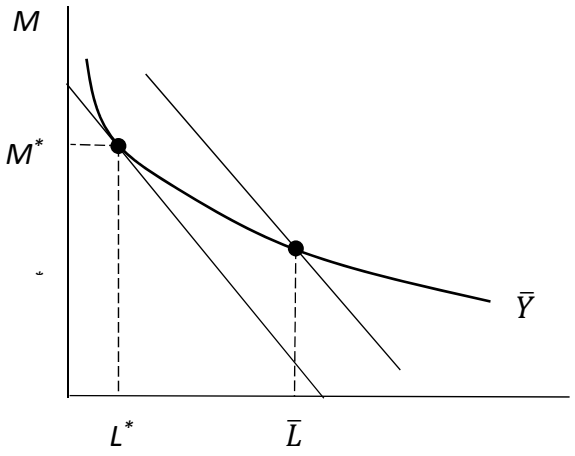

Figure 3: Remaining Imperfect Substitutability

We may believe, however, that the ability of students/researchers to learn how to use L for these more skill-intensive tasks is important. Thus, it may be desirable to impose a requirement that $L \geq \bar{L}$ for pedagogical reasons, even though this may not be cost-minimizing.

This case is shown in Figure 3, where the higher cost of the $\bar{L}$ constraint is indicated by the outward shift of the cost line.

4. Using Derivative Tasks for Assessment

The problem is that it will often be difficult or impossible to observe *L* so as to verify that students are complying with the requirement that $L \geq \bar{L}$. A possible way to address this issue is to assign or create "derivative" assessments in which the *L* and *M* inputs *cannot* be substituted for one another.

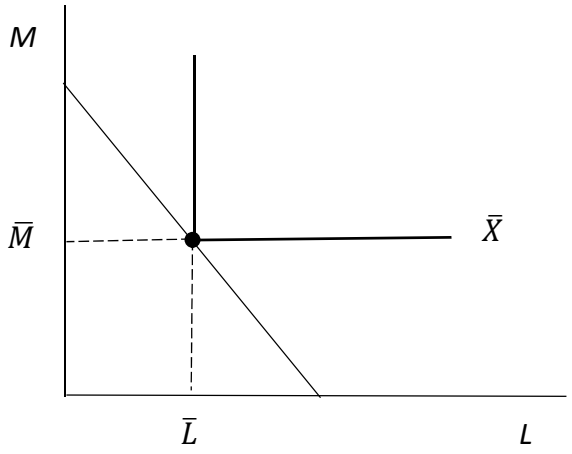

Figure 4: Using Derivative Assessments

Such a fixed-proportion (Leontief) technology is illustrated in Figure 4. Here, the assigned task, say $\bar{X}$, can only be produced with the combination of inputs $(\bar{L}, \bar{M})$. An example might be an in-class presentation of some project that may have been largely created with AI, but where the student must demonstrate an understanding of the task, how it was produced, and what its usefulness is. We discuss below several examples of derivative tasks instructors can use for

assessment at various stages of the writing process in conjunction with teaching and encouraging their students to use AI paired with analog skills.

At the *ideation* stage, students can use AI to explore possible research topics, economic problems, or real-world policy debates. For instance, a student interested in environmental economics might prompt an AI tool with, “What are current debates in carbon tax policy?” or “What are common economic models used to study pollution?” These prompts can expose students to a range of ideas they may not have encountered on their own, helping them refine or rethink their initial interests in more specific and researchable directions.

The analog skill being developed here is the ability to generate well-formed, researchable questions in economics—an essential step that demands both creativity and conceptual precision. To make this skill observable and assessable, instructors can require students to submit topic proposals that include an explanation of how the idea emerged, supported by excerpts or summaries of their interaction with AI. In-class brainstorming sessions, where students discuss and critique each other's proposed questions, can further reinforce this skill development.

Once a topic is selected, AI can assist students in generating a provisional *outline* for their paper. Students can ask for help organizing sections around theory, methodology, data, and expected results. For instance, a prompt like “Create an outline for a paper that examines the effect of minimum wage increases on employment” can yield a structured plan that students refine with their own ideas and instructor feedback. This stage focuses on the analog skill of constructing a logical argument—organizing economic concepts and empirical strategies into a coherent sequence. Students should be encouraged to critically evaluate AI-generated outlines and make conscious modifications based on economic logic. Observable tasks include submitting an annotated outline that identifies which elements came from AI and which were student-

generated or revised. Peer review of outlines, with comments on structure and clarity, provides another layer of engagement with this skill.

AI tools can assist students in *research* for identifying relevant keywords, summarizing articles, and even suggesting citations. For example, a student studying inflation might prompt an AI tool to suggest "key readings on inflation expectations" or summarize a landmark paper. While such use can accelerate the research process, it must be coupled with instruction in source verification and academic integrity. The critical analog skill here is synthesizing scholarly literature while evaluating the credibility and relevance of sources. To ensure that students are engaging in this process thoughtfully, instructors can assign an annotated bibliography that includes both AI-suggested and manually found sources. Students can compare AI-generated summaries with their own and note discrepancies. Tasks that ask students to verify the existence and reliability of AI-suggested articles and to rank them by the quality of journals or relevance to their research topics also reinforce research accuracy and accountability.

During the *drafting* phase, students can use AI to help with sentence-level writing—such as suggesting definitions for economic concepts, improving transitions between paragraphs, or rephrasing awkward sentences. A student drafting a section on the Phillips Curve, for instance, might ask AI to suggest a more concise definition or a clearer explanation of its theoretical underpinnings. This stage supports the development of economic exposition skills—the ability to express complex ideas with clarity and precision. Rather than treating AI-generated text as final, students should be instructed to treat it as a draft to be revised. Observable assignments may include drafts marked with annotations indicating where AI was used, how the suggestions were altered, and what improvements were made. This encourages students to view AI not as a substitute for writing, but as a collaborative tool in the drafting process.

In empirical economics writing, students are often required to *interpret* statistical outputs such as regression tables or summary statistics. AI can help by providing initial summaries of results. For example, students can input a Stata regression output and ask AI to explain what the coefficients mean. However, they must learn to critically evaluate the accuracy and depth of such interpretations. Here, the analog skill is empirical reasoning—interpreting data within the context of an economic argument, accounting for issues such as endogeneity, omitted variable bias, or statistical significance. To assess this skill, instructors can ask students to compare AI-generated interpretations with their own analyses and submit a written critique. These exercises help students internalize statistical interpretation skills while exposing the limitations of AI's econometric understanding.

In the *revision* stage, students can prompt AI to identify redundancies, suggest more concise phrasing, or improve transitions between sections. For example, students might copy and paste a section of their paper into an AI tool and ask, "How can I make this more concise while retaining the main point?" This practice builds awareness of writing style and voice. The analog skill here is editorial judgment—the ability to recognize weak or unclear writing and to improve it through focused revision. Students should be required to submit before-and-after versions of their work, along with a revision log explaining the changes made and their rationale. A supplementary exercise is to ask students to provide feedback to their colleagues. By reflecting on which AI and/or peer suggestions they accepted, modified, or rejected, students gain greater control over their writing voice and rhetorical choices.

In the final stage, students *reflect* on their writing journey and the role of AI within it. They may be asked to describe which stages they used AI for, what they learned about their own writing process, and how they navigated the ethical challenges of using generative tools. This

stage supports the analog skill of metacognitive reflection—developing self-awareness about writing practices and decision-making. Observable outcomes include a written process memo or an oral presentation that documents the student's writing trajectory, including how they used AI and why. Such reflections help reinforce a sense of authorship and intellectual responsibility.

Writing Stage	AI Tool Use	Analog Skill Developed	Derivative/Observable Task
Brainstorming	Generate topic ideas, suggest questions or debates	Formulate researchable questions in economics	In-class brainstorming session, written topic proposal, AI conversation transcript with reflection
Outlining	Draft a logical section structure (theory, data, etc.)	Structure economic arguments and sequencing ideas	Annotated outline with AI input noted, peer feedback, explanation of structural choices
Researching	Summarize literature, generate keywords or suggested sources	Synthesize and critically evaluating scholarly sources	Annotated bibliography with AI vs. human summaries, verification of AI-cited sources
Drafting	Rewrite sentences, define terms, improve transitions	Express economic arguments clearly and concisely	Marked-up drafts with AI-generated and revised text, explanation of edits
Analyzing	Interpret regression outputs, summarize tables	Interpret empirical results and link them to theory	AI-human comparison of interpretations, revised explanation with justifications
Revising	Rephrase for clarity and conciseness, improve flow	Editorial judgment and rhetorical awareness	Before-and-after paragraph versions, revision log with rationale for changes
Reflecting	Generate prompts for self-reflection or metacognitive guidance	Self-assessment and reflective thinking on writing choices	Process memo or oral presentation explaining AI use and writing strategy

Table 1: AI Tools, Analog Skills, and Derivative Tasks

Table 1 shows a summary of the suggested AI tools, analog skills, and derivative tasks in various stages of the writing process.

5. Concerns, Limitations, and Counterarguments

Despite the pedagogical benefits of integrating AI into the writing process, instructors and institutions must navigate a number of legitimate concerns. These include ethical worries about overreliance on AI, the risk of undermining students' original thinking, disparities in access and digital literacy, the potential erosion of writing proficiency, and uncertainty about how to evaluate student work in an AI-assisted environment. This section examines these concerns in greater depth and offers responses grounded in the proposed framework.

One of the most pressing concerns is that students may become overly dependent on AI tools to complete cognitive and writing tasks. If students bypass the processes of analysis, synthesis, and argumentation by accepting AI output uncritically, they risk losing opportunities to develop core disciplinary competencies. The concern is not just about cheating, but about atrophy of the very skills that economics education is designed to cultivate: critical reasoning, empirical argumentation, and effective communication.

The framework proposed in this article addresses this concern through structured integration. At each stage of the writing process, students must pair AI use with a corresponding analog skill and submit observable evidence of their cognitive work. Instructors can require students to explain how they used AI, critique its output, or compare it to their own drafts. By making AI use transparent and reflective, overreliance is transformed into active learning.

A common fear is that AI-generated text can lead to intellectual conformity. If students rely on AI to generate arguments, structures, or examples, they may replicate generic patterns

and avoid the difficult but formative task of independent idea generation. In economics, where the ability to formulate and defend original hypotheses is critical, this concern is especially salient. Our response is that AI should be framed as a sparring partner rather than a substitute. For example, students can be assigned to generate a prompt for AI and then critique the resulting text. They might evaluate whether the AI's logic holds, what assumptions are embedded, and how the argument could be improved. Such activities reinforce students' originality by encouraging them to engage with, rather than mimic, machine-generated ideas.

Equity may also be a concern because not all students come to the classroom with equal experience or comfort with AI tools. Differences in access to high-quality AI platforms, internet bandwidth, or digital literacy can exacerbate existing educational inequalities. Some students may feel at a disadvantage compared to peers who are more tech-savvy or who have used AI tools extensively before. Institutions should promote equity by adopting standardized, university-provided AI tools and ensuring that all students receive training in responsible and critical AI use. Assignments should be designed so that AI is used within class time or structured settings, limiting dependence on external tools or pre-existing knowledge. Instructors should also normalize asking for help and discussing limitations of AI tools, thereby reducing the stigma or confusion students may feel when learning to use these technologies.

A key concern is whether assessments that include AI use still provide a valid measure of student learning. Instructors may question whether written products that incorporate AI can authentically reflect a student's understanding, effort, and skill—particularly in a discipline like economics where argument clarity and data interpretation are essential learning goals. By shifting assessment from final products to observable, skill-linked tasks such as drafts, annotations, reflections, and oral presentations, the proposed framework enhances the validity of

evaluation. These derivative tasks make the student's reasoning visible and allow instructors to assess the learning process, not just the output. In this model, AI use becomes part of the evidence trail, rather than a threat to authenticity.

Another concern is that implementing a process-based, multi-stage assessment framework may increase instructors' workload. Requiring students to submit outlines, drafts, AI logs, and reflections could seem labor-intensive to manage and grade, especially in large courses. While process-based pedagogy does involve more checkpoints, these assignments often lead to better-structured final papers and fewer cases of plagiarism, which can save time in the long run. Instructors can use efficient grading strategies such as rubrics, targeted feedback, and peer evaluation systems. Learning management systems (LMS) can streamline the collection and tracking of intermediate tasks, and some AI tools can also support instructors by offering draft diagnostics or summary logs of student-AI interaction.

Some institutions have not yet formalized clear policies on acceptable AI use in coursework, leaving instructors and students in a gray area. Without consistent guidance, students may unknowingly cross ethical lines, while instructors may feel unsupported in enforcing standards. As institutions develop clearer policies, instructors can lead by example by being transparent about their own use of AI in course design and by explicitly outlining expectations in syllabi and assignments. Students should be asked to document and reflect on their AI use. Creating a culture of open dialogue about AI's capabilities and limitations helps foster a shared understanding of responsible innovation.

6. AI and the Shifting Comparative Advantages in Academic Work

The integration of AI into the writing process does more than streamline student workflows or enhance classroom pedagogy—it signals a deeper transformation in the nature of academic work itself. At the heart of this transformation is a reconfiguration of comparative advantages between human cognition and artificial intelligence. As generative tools increasingly automate tasks once considered hallmarks of scholarly expertise, such as drafting coherent prose, summarizing literature, or interpreting data, the boundary between intellectual labor and computational assistance grows more fluid. At the same time, the larger division of labor within society – where students will need to locate themselves after graduation – is undergoing the same set of fluid transformations. If we are to teach students how and when to employ the tools of AI, we also need to think about that larger division of labor. Fortunately, economics has much to say about this. Indeed, asking students to think about the roles of human cognition and AI in the classroom is really just asking them to think like economists.

In many ways, this problem takes us back to founding figures of the profession like Adam Smith and David Ricardo. In the open lines of the *Wealth of Nations*, Smith (1976 [1776]) introduces the concept of the division of labor and asks us to think about economic production as the design of a sequence of tasks. In the last couple of decades or so, economists have returned to the task approach to economic production, influenced by thinkers like the philosopher Michael Polanyi (1958) and the polymath and Nobel Laureate Herbert Simon (1960), an early enthusiast for artificial intelligence (Autor 2014; Langlois 2003). Polanyi's concept of *tacit knowledge* reminds us that much of what humans know is inarticulate and embedded in practical contexts—"we know more than we can tell." This stands in contrast to

the kinds of knowledge that can be externalized in terms of explicit rules. Simon's concept of *cognitive comparative advantage* reminds us that, as with all tasks in the economy, the allocation of cognitive tasks between humans and machines is a matter of comparative advantage not absolute advantage. It may be optimal for humans to continue to perform some tasks – or perhaps to perform entirely new tasks made possible by automation – even as machines (computers) become increasingly capable. Note that framing the problem this way for students helps to teach or reinforce the concept of comparative advantage.

As we argued earlier, we can think about artificial intelligence in terms of a dramatic change in the relative prices of human and machine labor, which we can now understand in terms of the rapidly decreasing costs of reconfiguring tasks to make them amenable to the explicit rule following at which computers excel. In general, mechanization of tasks involves more than merely handing off to machines tasks within the existing division of labor that had been performed by humans: it generally means a radical reconfiguration of the entire task structure. How this will play out, in the classroom and in society, is impossible to predict, and we are part of the process of experimenting with new task structures. Nonetheless, the evolving economic literature offers some lessons.

One of the most interesting findings of the task literature is the result that in activities like medical diagnosis and even chess, humans and computers working together typically outperform either humans by themselves or computers by themselves (Agrawal, Gans and Goldfarb 2018, p. 65; Brynjolfsson and McAfee 2014, pp. 189-190). This result seems to spring from the division of labor within the team: machines can do the parts that require high-speed rule following and humans can do the parts that benefit from human cognition. With skill-augmenting AI as a teammate, students – later to be workers – may be able to perform with only a modest level of

skills activities that once required the highest levels of human capital. This is the world for which we are now training students.

Training students to team with AI will be the hardest part of curriculum redesign, as the division of tasks is constantly evolving and we have relatively few historical models to guide us. At the same time, however, a crucial part of the process of teaching students to team up with AI will remain familiar to us: honing traditional core "analog" skills. Tasks such as data formatting, reference generation, or sentence smoothing are highly automatable and often benefit from AI intervention. Others, such as identifying novel research questions, applying theoretical frameworks, engaging with the normative dimensions of economic policy, or evaluating the robustness of empirical findings, continue to rely on uniquely human faculties. The role of education, then, is to guide students toward developing comparative advantage in precisely those tasks where human insight remains essential.

Here another analogy might be useful. We can think of using AI as an analogous to outsourcing in industry, a perspective already embedded in our invocation of Adam Smith and the division of labor. As technology changes and the extent of the market expands, it pays to "outsource" cognition. In this respect, AI is a higher-powered version of what we have long been doing, if not by literally outsourcing cognitive tasks but by hiring employees or even simply using pen and paper, slide rules, and calculators. One of the interesting findings from the literature on outsourcing is that even when firms outsource significant portions of their production or development processes, they must retain core knowledge internally to remain effective systems integrators (Brusoni and Prencipe 2001). Empirical work in industries like aerospace and automobiles shows that leading firms often "know more than they make"—they rely on external suppliers for components but maintain deep in-house understanding of key

technologies and architectures. This retained knowledge is essential not only for coordinating complex networks of suppliers but also for ensuring product coherence, managing innovation trajectories, and responding flexibly to unexpected problems. So too when we invite students to offload cognitive tasks to AI, we need to ensure they retain the core analog skills that will enable them to outsource those tasks effectively. Indeed, some psychologists worry that too much cognitive outsourcing – or maybe the wrong kinds of cognitive outsourcing – will harm the ability of student to think critically (Gerlich 2025).

7. Conclusion

The emergence of generative AI presents both a challenge and an opportunity for instructors of economics writing at the undergraduate level. While concerns about academic integrity and diminished student effort are legitimate, they should not lead to the exclusion of AI from the classroom. Instead, by embracing a process-oriented approach to writing instruction—one that aligns with how economists develop and communicate ideas—AI can be meaningfully integrated into pedagogy in ways that enhance, rather than undermine, student learning.

AI's growing capabilities compel a rethinking of educational priorities in economics and beyond. Rather than competing with AI on its terms, students must be trained to complement and direct it—developing the judgment, creativity, and critical faculties that machines cannot replicate. This reconceptualization offers an opportunity: namely, to build a more reflective, process-oriented, and ethically grounded model of academic production in the age of artificial intelligence.

Importantly, the rise of AI does not signal the end of scholarly writing but rather its evolution. Just as calculators transformed how we teach mathematics—freeing students from

manual computation to focus on conceptual reasoning—AI can liberate writers from mechanical constraints and redirect their attention to higher-order thinking. This transformation demands that students not only master the "how" of writing but also develop an awareness of the "why": why particular arguments matter, why empirical evidence is persuasive, and why academic integrity is foundational. These metacognitive skills, situated at the frontier of human-AI collaboration, represent the new frontier of comparative advantage in academic work. This evolving intersection also calls for a recalibration of academic norms and expectations. If AI can rapidly produce content that meets the surface-level standards of coherence and completeness, then originality, depth of thought, and process transparency become more valuable—and more difficult to evaluate. Instructors and institutions will need to shift emphasis from final outputs to evidence of intellectual engagement: process documentation, revision histories, oral defenses, and reflective memos. Such shifts not only preserve academic integrity but also ensure that students are learning how to collaborate with AI as a tool, rather than relying on it as a proxy for thought.

This article has proposed a structured framework for using AI at each stage of the writing process—brainstorming, outlining, researching, drafting, analyzing, revising, and reflecting. Grounded in two pedagogical principles—pairing AI use with the analog skills defined in course objectives and evaluating student progress through observable, skill-correlated tasks—the framework promotes transparency, equity, and intellectual development. Students learn not simply how to produce a paper, but how to engage in economic reasoning, critically assess tools, and improve their writing through iterative practice.

AI is no longer an optional enhancement in higher education; it is a foundational shift that demands thoughtful integration. For economics instructors, the goal should not be to police

AI use, but to guide it—to teach students how to use emerging technologies in service of deeper understanding, effective communication, and ethical scholarship. By treating writing as a process, we preserve the rigor of economics education while preparing students for a world in which AI will increasingly shape how they write, think, and work.

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