THE Teaching PROFESSOR

Why Do Students Need to Learn Anything When AI Can Learn Everything?

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After all, nearly every large language model (LLM) is good at summarizing readings, synthesizing large amounts of data and information across sources and culling it down to key points, and "remembering" foundational knowledge. So why memorize facts? Why practice applying concepts? Why learn to write? Both students and hiring managers are asking these questions.

Some students have used homework sites and paid essay writers for years. An 11-year study found that in 2008, homework improved test scores for 86 percent of college students. By 2017, that number had dropped to 45 percent—the same year that more than half of students reported using homework-help sites (Mollick, 2024). By then, 15 percent had paid someone to complete an assignment, often through online essay mills. Even before generative AI became available, about 20,000 people in Kenya made a living writing essays full-time. Given their experience with and trust in these services, many students will likewise trust AI to do more and better than they can.

Some organizations believe that they can replace their interns and entry-level workers with AI. At a conference of company leaders at Harvard Business School nearly a year ago, numerous participants said that they intend hiring freezes this year as they figure out how AI will change their needs, especially at the entry level. Recent news articles bear this out.

Students and organizations are both right—in the short term. In the long term, they are both wrong. Yes, AI already produces results that surpass those of a novice and is steadily improving to produce work that is indistinguishable from that of skilled professionals in many fields.

Yet, there are two reasons why we all must continue to learn while also being deliberate in our use of AI:

1. Organizations and society as a whole need experts—and developing expertise requires doing the work that many are handing off to AIs.
2. Students can differentiate themselves from other graduates by being intentional in selecting when to use and when not to use AI and by being skilled in managing and leading others.

Expertise

Without a base of knowledge and deliberate practice in a field, one cannot develop into the experts our organizations and society will need. We develop expertise in our fields by building subject matter knowledge, which enables us to think critically, grasp abstract concepts, and connect ideas across different topics. Achieving mastery requires a solid foundation of factual knowledge as learning any skill involves some level of rote memorization. Moreover, all learning demands dedicated practice, guided instruction, and constructive feedback (see, e.g., Mollick, 2024; Brown et al, 2014).

Students who uncritically rely on AI to complete their homework, like students who rely on homework help websites or essay writing services, risk failing to learn the underlying concepts, achieving only mediocre skills and stagnating growth. Meanwhile, students who use AI as a tool to enhance their learning will accelerate their development, both during college and throughout their careers.

I endeavor to teach students to use AI as a coach to help them learn and to practice their learning, not as a replacement for it. I hope that they work with AI to create learning plans and customized tutor GPTs to practice that learning; that they create tools that test their abilities and knowledge and then provide feedback; and that when they use an AI to brainstorm, they evaluate the AI's output using the base of knowledge they developed in their courses.

Differentiation

Students can differentiate themselves from job recruits who use AI tools indiscriminately by selecting the right AI tools for the task, selecting the right tasks for AI use, and interacting with AI productively.

Because the best AI tools for different tasks, such as coding, writing, or research, are constantly evolving, I won't attempt to list them here. Universities can create "walled garden" LLMs—that is, LLMs that are protected from external access and keep students' work, names, and other private data secure—that include access to various specialty tools as well as guidance on which to use for what need.

Our graduates can further differentiate themselves by learning how best to prompt and interact with an LLM. Feeding it an assignment and pasting its response into the homework link kills learning; asking it

to role-play as a student with the student as the teacher, asking for metaphors to help the student understand complex concepts, or requesting multiple-choice questions to practice recalling the concepts supports learning.

AI is unsuited to the jobs of managers and leaders. Studies indicate that students find feedback less meaningful when it comes from an AI rather than their professor (Rowsell, 2024), suggesting that people value human responses over automated responses. While LLMs can write clear and persuasive emails, grade homework, and devise constructive coaching comments—even speaking with appropriate emotion—exclusive use or overuse may demotivate both the recipient and the user.

Research demonstrates that the quality of a manager has a significant impact on the quality of their employees' work (Izenberg, 2022). For instance, one study found that the effectiveness of video game team managers accounted for over 20 percent of the revenue generated by their games. Remarkably, the influence of the team manager on revenue was greater than that of the game's designers, who developed the creative concept, and even greater than the influence of the company's top executives (Mollick, 2012).

Leaders are most effective when they tap into and nurture the internal motivation of their team members, building their commitment to the organization, to the work, and even to the manager themselves (Izenberg, 2022). While AI is advanced enough to coach teams or address performance issues, it lacks the intrinsic connection to the organization that a human manager possesses. An employee who perceives themselves as working for "Company X's AI" will not feel the same level of loyalty or commitment as they would to a human. Since AI, both literally and figuratively, cannot embody an organization or a manager, managers and leaders who delegate important communication and oversight responsibilities to AI inherit this fundamental limitation.

Conclusion

Mediocre workers in any field may use AI to improve their work-related tasks, potentially catching up to our graduates in the short term. But without foundational knowledge and practice to develop expertise, they are less likely to succeed in the long term. At the same time, AI cannot fully replace the value of a high-quality manager. Given that, I believe my role as an educator is to focus on teaching students

- the value of foundational knowledge in their domain;
- how to use AI as a partner in practicing and developing this knowledge and expertise; and
- to neither give up by handing everything over to an AI nor avoid AI altogether.

With appropriate AI use and leadership education, our students will outperform other future employees in two ways:

1. In the short and long term, by being exceptional managers and leaders
2. In the long term, by gaining expertise themselves rather than by relying on an expert system

That's what I hope to do for my students.

References

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