

Discussion of “Addressing the Challenges of AI-Generated Assignment Submissions in Education: Insights and Strategies”[☆]

EMANUELA FURFARO¹

¹*Department of Statistics, University of Washington, Seattle, WA, United States of America*

Keywords *homework assignments; human-AI collaboration; pedagogical adaptation*

I congratulate the authors for the insightful and timely paper (Wang et al., 2025b). As an educator in Statistics, I find the topic highly relevant to Statistics and Data Science classes, where students are frequently required to complete coding-based assignments, a task that many large language models (LLMs) can perform effectively. This work contributes meaningfully to the growing body of literature on the use and misuse of LLMs in STEM education.

I find particularly interesting the distinction between strategies to circumvent students’ use of AI and those to incorporate them into assignments and teaching. In this discussion, I aim to highlight several points that contribute to the ongoing conversation on both approaches.

With regard to strategies for circumventing the use of LLMs, the authors suggest greater reliance on oral exams and presentations, along with open-ended creative questions that pose challenges for LLMs. Oral assessments have regained attention, initially due to online teaching during the pandemic (Bayley et al., 2024), and now because of the broad use of LLMs in take-home work (Fenton, 2025). Research on oral assessments in statistics education and beyond highlights benefits such as revealing students’ conceptual understanding and fostering reasoning articulation (Theobald, 2021). However, concerns about stress, perceived subjectivity, and resource demands, especially in large classes, limit their feasibility. The second option, “open-ended creative questions,” also faces hurdles. LLM capabilities evolve rapidly (Chen et al., 2024), making reliable assessment design difficult. Moreover, LLMs perform well in introductory statistics, where even creative questions often involve basic concepts, limiting their effectiveness as an assessment strategy.

Since students will likely work in environments where they are expected to use AI-based tools, many researchers in Statistics, as well as in education more broadly, have advocated for approaches that encourage students to engage with generative AI in ways that directly promote learning (Ellis and Slade, 2023). To this end, Wang et al. (2025b) discuss three strategies for incorporating AI into teaching: requiring process documentation from students who use AI tools, promoting AI literacy and ethical use, and encouraging human–AI collaboration. I agree with this approach and I believe that the integration of generative AI tools into teaching has become essential for several reasons: as a means to preserve the learning objectives that many assignments are designed to achieve, as an enhancement to pedagogical approaches, and as an opportunity to update curricula to teach students the skills now required in the job market. However, this integration should be thoughtful and intentional. In fact, in the absence of careful guidance, students rely on prior knowledge or educational background to interpret AI output, which can lead to disparities in learning outcomes and reinforce inequities among students with different levels of preparation (Wang et al., 2025a), failing to teach students how to effectively interact

[☆]Main article: <https://doi.org/10.6339/25-JDS1208>.

* Email: efurfaro@uw.edu.

with LLMs. In addition, many have highlighted the importance of ensuring that AI-generated responses align with course content and expectations (Hariyanti et al., 2025).

One way to integrate LLMs into teaching and learning is by developing LLM-based tools that students can use in a controlled environment. In such a setting, instructors would have access to the full conversation between the student and the LLM and maintain control over the information the system provides, ensuring that the tool supports learning rather than replacing it. This approach would go in the direction of helping students develop two critical skills: the ability to read and validate code and results, and the ability to communicate precise, structured instructions to AI systems. Because instructors can review the entire interaction, they can offer targeted feedback not only on the final output but also on the reasoning and communication process. This strategy aligns with the authors' recommendations (Wang et al., 2025b) of encouraging human-AI collaboration and requiring documentation of the problem-solving process when AI is used. It also reflects the growing interest in integrating AI as a partner in learning rather than as a shortcut. Instructors have already experimented with AI tutors and shared insights and results (Bastani et al., 2024), and I hope to see more of this in Statistics and Data Science education.

References

- Bastani H, Bastani O, Sungu A, Ge H, Kabakçı Ö, Mariman R (2024). Generative ai can harm learning. *The Wharton School Research Paper*.
- Bayley T, Maclean KD, Weidner T (2024). Back to the future: Implementing large-scale oral exams. *Management Teaching Review*, 23792981241267744. <https://doi.org/10.1177/23792981241267744>
- Chen L, Zaharia M, Zou J (2024). How is chatgpt's behavior changing over time? *Harvard Data Science Review*, 6(2). <https://doi.org/10.1162/99608f92.5317da47>
- Ellis AR, Slade E (2023). A new era of learning: Considerations for chatgpt as a tool to enhance statistics and data science education. *Journal of Statistics and Data Science Education*, 31(2): 128–133. <https://doi.org/10.1080/26939169.2023.2223609>
- Fenton A (2025). Reconsidering the use of oral exams and assessments: An old way to move into a new future. *Educational Researcher*, 54(7): 430–436. <https://doi.org/10.3102/0013189X251333638>
- Hariyanti F, Budayasa IK, Setianingsih R (2025). The role of ai in enhancing statistical literacy: A systematic review in education. *Multidisciplinary Reviews*, 8(12): 1–11. <https://doi.org/10.31893/multirev.2025376>
- Theobald AS (2021). Oral exams: A more meaningful assessment of students' understanding. *Journal of Statistics and Data Science Education*, 29(2): 156–159. <https://doi.org/10.1080/26939169.2021.1914527>
- Wang KD, Wu Z, Tufts L, Wieman C, Salehi S, Haber N (2025a). Scaffold or crutch? Examining college students' use and views of generative ai tools for stem education. In: *2025 IEEE Global Engineering Education Conference (EDUCON)*, 1–10. IEEE.
- Wang S, Xu L, Liu J, Zhai Y (2025b). Addressing the challenges of AI-generated assignment submissions in education: Insights and strategies. *Journal of Data Science*, 24(1): 1–7. <https://doi.org/10.6339/25-JDS1208>