

# Review of: "Beyond Traditional Teaching: The Potential of Large Language Models and Chatbots in Graduate Engineering Education"

Bijay Kumar Paikaray<sup>1</sup>

<sup>1</sup> Sri Sri University

Potential competing interests: No potential competing interests to declare.

Overall, this paper provides a thorough and comprehensive exploration of the integration of large language models (LLMs) and chatbots into graduate engineering education. It effectively traces the historical and technological disruptions in education, introduces key terms and underlying mechanisms, and presents a case study of using an LLM-based chatbot in a graduate fluid mechanics course.

Here are some specific review comments and suggestions:

**Clarity and Structure:** The paper is well-structured, and the flow of ideas is clear. However, consider providing a brief roadmap or outline at the beginning to give readers an overview of what to expect in each section.

**Background and Literature Review:** While the paper provides a solid background on the history and evolution of chatbots and LLMs, consider integrating a literature review section that discusses existing research on the topic. This can help place your work in the context of previous studies and highlight any gaps your research addresses.

**Case Study Details:** The case study on using an LLM-based chatbot in a graduate fluid mechanics course is a highlight of the paper. However, it would be beneficial to include more specific details about the implementation, such as the platform used, the size of the student cohort, and any challenges faced during the deployment.

**Ethical Considerations:** The paper briefly touches on the ethical implications of using LLMs in education. Expanding on this section and discussing potential ethical challenges and how they were addressed in the case study would add depth to the paper.

**Figures and Visuals:** The paper mentions several important figures in the development of chatbots and LLMs. Consider including these figures or diagrams to aid in visualizing the evolution and milestones in the field.

**Conclusion and Future Directions:** The conclusion could be strengthened by summarizing the key findings and implications of the study more explicitly. Additionally, elaborate on future directions for research in this emerging field.

**Citations and References:** Ensure that all claims and statements are properly cited and referenced throughout the paper. A comprehensive list of references at the end is essential for readers to explore further.

**Language and Style:** The paper is well-written, but there are a few sentences that are quite long and complex. Consider breaking them into smaller sentences for improved readability.

**Formatting and Consistency:** Ensure that formatting, font sizes, and styles are consistent throughout the paper. Additionally, make sure that all glossary terms are consistently defined and used.

**Engage the Reader:** While the paper is informative, consider adding elements that engage the reader, such as real-world examples, anecdotes, or quotes related to the topic.