

Zifei (FeiFei) Han  
Carnegie Mellon University  
5000 Forbes Avenue Pittsburgh, PA 15213

Feb 15, 2024

Dear Editors,

Enclosed please find a manuscript that my co-authors and I would like to submit to AAAI2024 Workshop on AI for Education - Bridging Innovation and Responsibility. The manuscript is renamed as “*Improving Assessment of Tutoring Practices using Retrieval-Augmented Generation*”. We confirm that this work is original and has not been published elsewhere, nor is it currently under consideration for publication elsewhere.

This paper aims to assess tutor’s use of social-emotional competencies through the analysis of transcriptions from real-time online math tutoring sessions. Leveraging the recent advancement of Large Language Models, we explored four prompting strategies: two basic zero-shot prompts, Tree of Thought (ToT), and Retrieval-Augmented Generator (RAG) Prompts. With the objective of implementing this method on a large scale, our study aims to determine the method's efficacy in evaluating the tutor’s performance accurately (in terms of correctness and the presence of hallucinations) while also ensuring cost effectively. Our findings reveal the RAG prompt as a standout, demonstrating higher level of correctness, fewer hallucinations, and lower financial cost compared to the other strategies examined. The effectiveness of the RAG prompt underscores its potential to transform the assessment of tutor skills by offering more contextually relevant and precise evaluations.

After carefully considering each reviewers’ comments, we have made corresponding amendments to enhance the overall quality of our work. Firstly, we have conducted thorough review of our manuscript to correct grammatical errors and spelling mistakes. Additionally, we have clarified the descriptions associated with each diagram to address any potential ambiguities. Furthermore, we have updated the descriptions of the different prompting strategies. This includes a more detailed explanation of the Tree of Thoughts (ToT) and Retrieval-Augmented Generation (RAG) prompts. Finally, the references have been revised to adhere to the requested bibliography format, ensuring that first names and surnames are presented correctly.

We appreciate the reviewers pointing out these issues and believe that they significantly improved the manuscript’s quality.

We have no conflicts of interest to disclose.

Please address all correspondence concerning this manuscript to me at [hanzifeifei@gmail.com](mailto:hanzifeifei@gmail.com)

Thank you for considering our revised submission. We look forward to the opportunity to contribute to your workshop and eagerly await your feedback.

Sincerely,

Zifei (FeiFei) Han