

Your Abstract Submission Has Been Received

PRINT THIS PAGE

You have submitted the following abstract to 2023 Spring Western Sectional Meeting. Receipt of this notice does not guarantee that your submission was complete or free of errors.

ChatGPT or ChatGPA? Exploring AI's Role in Problem-Solving and Posing

Michael Todd Edwards, Miami University of Ohio; **Zheng Yang**, Sichuan University/Pittsburgh Institute

Abstract Text:

In the following session, an algebraist (Zheng Yang) and a mathematics educator (Todd Edwards) explore classic recreational mathematics tasks (e.g., Lewis Carroll's Cats and Rats Problem) using ChatGPT and GeoGebra.

As others have noted, ChatGPT is a language tool, not a computational engine. As such, ChatGPT generates genuinely interesting results when asked to solve mathematical tasks. "ChatGPT sometimes delivers insightful answers that would be a credit to an excellent Ph.D. student. Other times, however, it makes idiotic and obnoxious mistakes" (Thagard, 2023). Drawing on a vast collection of writing samples, ChatGPT relies on pattern recognition to predict what utterances are most probable. These writing samples include incorrect results that are, in turn, reflected in ChatGPT responses.

Critics of ChatGPT (and AI, in general) point to faulty responses as evidence that ChatGPT has no place in learning classrooms. Such criticisms mistake ChatGPT as an answer generator (i.e., "ChatGPA") rather than as a learning partner—one that requires a human capable of asking useful questions in order to generate productive responses. Herein lies our challenge—First, to empower our students to ask more and better questions; and, Secondly, to help students learn how to communicate productively with the AI.

In our interactive session, we'll wrestle with these ideas as we engage ChatGPT as a learning partner. We'll ask ChatGPT to respond to audience-generated questions. We'll generate code and incorporate it in sample GeoGebra sketches. Moreover, we'll brainstorm ways to help our students learn how to communicate with AI productively, in order to build conceptual understanding of the mathematics they are studying. At the end of the session, participants will have: (1) a better understanding of ChatGPT, including its strengths and limitations; (2) a better sense of how to engage ChatGPT to generate productive output; and (3) ideas for incorporating ChatGPT with students in their own classrooms.

Session Selection:

The Use of Computational Tools and New Augmented Methods in Networked Collective Problem Solving I

Subject Level 1:

97 Mathematics education

Subject Level 2:

97U - Educational material and media and educational technology in mathematics education

Subject Level 3:

97U70 - Technological tools, calculators (aspects of mathematics education)

Submitter's E-mail Address:

edwardm2@miamioh.edu

Is this a preliminary report?

Yes

Is this paper suitable for undergraduates?

Yes

See Title step for Recording Permission Selection.**Agreements:**

I understand that I have not submitted my abstract until I hit "Submit" on the last step in the submission process, receive an immediate confirmation screen, and a subsequent email confirming a successful submission.

First: Presenting Author

Michael Edwards

Email: edwardm2@miamioh.edu-- Will not be published
Miami University of Ohio

Second: Author

Zheng Yang

Email: zhengyang2018@scu.edu.cn
Sichuan University/Pittsburgh Institute

If necessary, you can make changes to your abstract submission.

To access your submission in the future, use the direct link to your abstract submission from one of the automatic confirmation emails that were sent to you during the submission.

Or point your browser to </math/reminder.cgi> to have that URL mailed to you again. Your username/password are 25050/817167.

Any changes that you make will be reflected instantly in what is seen by the reviewers. You DO NOT need to go through all of the submission steps in order to change one thing. If you want to change the title, for example, just click "Title" in the abstract control panel and submit the new title.

When you have completed your submission, you may close this browser window.

[Tell us what you think of the abstract submission process](#)

[Home Page](#)