

Policy on Artificial Intelligence Use *Journal for Research in Mathematics Education*

The use of artificial intelligence (AI) and AI-based tools and technologies is an ever-evolving phenomenon within educational research and practice. As time passes, AI and the tools that evolve from it will be able to perform more and more complex tasks. In considering the use of AI in research and practice in mathematics education, we recall other technology debates, such as the so-called Calculator Wars of the 1970s and 1980s. Specifically, traditionalists feared that using calculators would result in a lack of procedural fluency, whereas reform-oriented educators considered calculators to be a tool to help students (and adults) focus on more conceptual aspects of mathematics. Additionally, the Calculator Wars focused on deficit perspectives, drawing attention to the use of the calculators themselves rather than acknowledging the equity issue of how access to calculators opened opportunities for high-quality mathematical play for all students. Similarly, AI is a potentially powerful resource for mathematics educators and educational researchers.

In the case of manuscripts submitted to the *Journal for Research in Mathematics Education (JRME)*, AI should be considered and treated as a tool that can be applied, described, and cited. By consequence, AI cannot be listed as an author. The following sections contain brief examples of how the use of AI should be applied, described, and cited in manuscripts submitted for consideration to *JRME*. In providing these examples, we do not limit the scope within which authors should consider the use of or reference to AI or related technologies in their research or writing. That is, these examples are illustrative and not exhaustive. If authors are unclear about whether to refer to the use of AI, they should err on the side of acknowledging it.

Editors may have questions for authors or reviewers regarding the use of AI. Such questions should not be treated as accusations of malfeasance but as requests to better understand the use of the tools and how that usage fits into the broader context of the manuscript. For example, because the technological landscape is rapidly changing, authors may use tools with which editors are unfamiliar. Editors may have questions about the use of a new tool and what the role of that tool might be in the creation of the manuscript. As with the whole review process, the *JRME* Editorial Panel expects these interchanges to be educative, constructive, and collegial. The Editorial Team looks forward to learning from and with authors about their use of AI in supporting our collective scholarly enterprise.

In Writing Portions of Text

AI, especially generative models such as ChatGPT, will be used more and more extensively to aid writers and researchers. Such tools can be significant assets to authors for various applications, including synthesizing ideas, analyzing and summarizing data, identifying potential gaps in arguments, and improving the readability and accessibility of manuscript text (beyond basic stylistic editing such as grammar and spelling). When using AI to generate, modify, or assist in creating content for a manuscript, authors should acknowledge and distinguish between human and AI contributions. Manuscripts that leverage AI for writing assistance should explicitly mention the role AI played and identify the specific facets of the manuscript in which AI was used. Authors are asked to list out specific steps detailing how they used AI. For instance:

- “Portions of this literature review section were generated with the assistance of OpenAI’s GPT-4 model. AI was used to identify major themes in the literature.”
- “An AI was used to clarify key intellectual points of the final manuscript to ensure the language is in accordance with *JRME* standards.”

This acknowledgment offers transparency regarding the source of the content and allows readers to appreciate the blend of human expertise and computational support that went into the manuscript. Additionally, the use of an AI tool to generate or edit portions of the intellectual content of the manuscript will be disclosed to reviewers. This acknowledgment should be considered with the same weight one would give to disclosing feedback provided by a human reader.

Finally, the disclosure of the use of AI should not be a determining factor influencing a decision about the possible publication of the manuscript. Because AI is a tool, reviewers should focus on the review criteria that relate to the substance and significance of the manuscript rather than the use of AI.

In Analyzing Data

Use of AI or AI-based tools (GPT, machine learning, etc.) in the analysis of data must be clearly acknowledged and appropriately cited in the description of the methodology. Such use could include but is not limited to assisting in portions of statistical analysis, preparing (or cleaning) data for quantitative or qualitative analyses, generating data for analysis, conducting discourse analysis using machine learning, and so forth. In such instances, the specific tool should be cited using appropriate citation, and the role of AI in the methodology should be succinctly and explicitly articulated—much in the way one would cite the use of particular analytic software for advanced quantitative or qualitative analysis.

In Creating Visualizations

AI is a useful medium for creating visualizations that include, but are not limited to, figures, pictures, diagrams, tables, and so forth. The specific AI tool used to create the visualization must be appropriately cited. Authors who include an AI-created visualization within a table or figure must acknowledge the role of AI both in the textual reference to the table/figure and in the table/figure itself (either in the title or as a note). The use of AI to create visualizations not

included as a table or figure but used in another manner (e.g., data collection or analysis) must still be described and cited. For example, a researcher may use AI to generate examples of students' arithmetic and then collect data on teachers' analysis of these generated examples. In such a case, the authors must describe the role of AI and appropriately cite the tool(s) used.

In Reviewing *JRME* Manuscripts

Reviewers are cautioned not to input or upload any part of an assigned manuscript to an AI tool; doing so violates the authors' confidentiality and rights to data privacy. This is in keeping with our policy that reviewers should limit discussion about the manuscripts they review to the stakeholders in the review process through the sanctioned review system. Using an AI system to analyze or generate text from a manuscript violates the understanding the journal has with authors to keep their manuscripts within the review system and not disseminate the ideas. In addition, because they are confidential, decision letters or other communication about the manuscript should not be inputted or uploaded to an AI.

AI may, however, be used to edit and refine manuscript reviews. Reviewers are encouraged to disclose the use of AI as a tool to aid in their review, and these reviews should not be penalized for using AI.