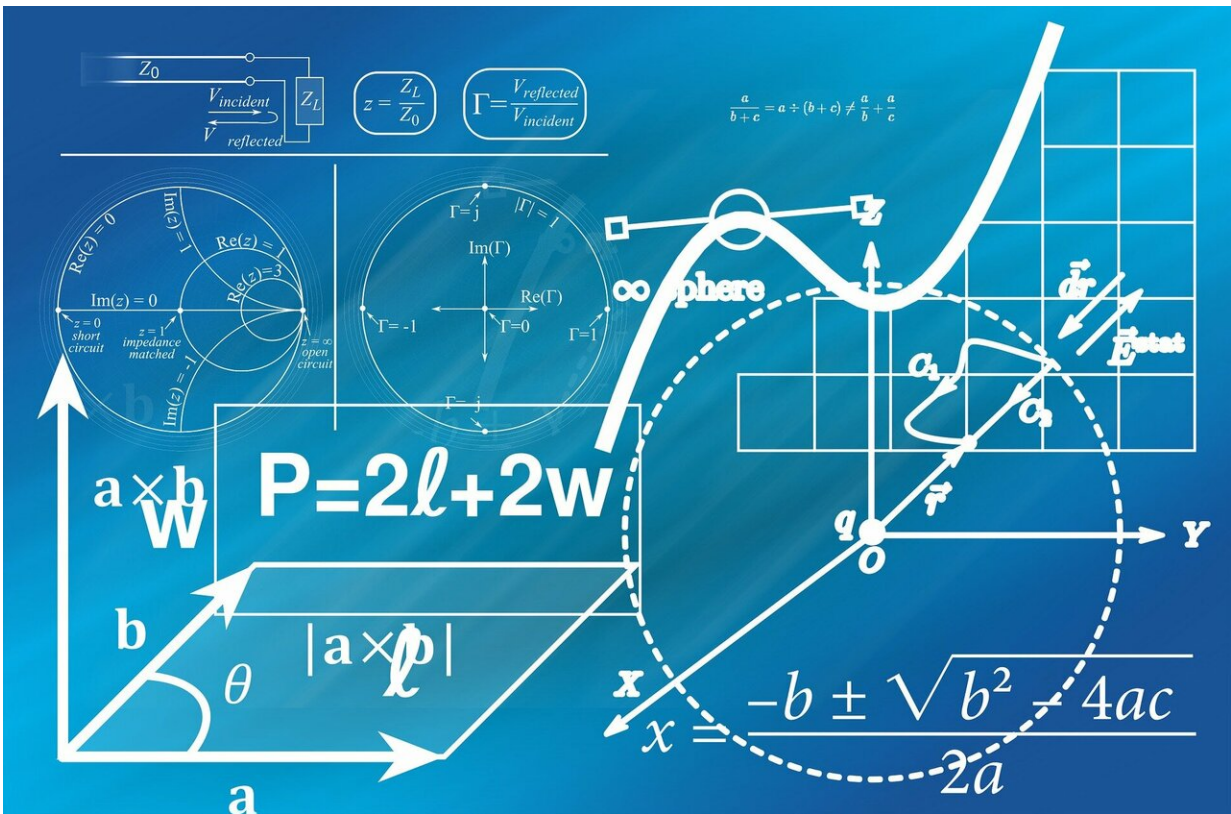


Applying artificial intelligence to science education

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A new review published in the *Journal of Research in Science Teaching* highlights the potential of machine learning—a subset of artificial intelligence—in science education. Although the authors initiated their

review before the COVID-19 outbreak, the pandemic highlights the need to examine cutting-edge digital technologies as we re-think the future of teaching and learning.

Based on a review of 47 studies, investigators developed a framework to conceptualize [machine learning](#) applications in [science assessment](#). The article aims to examine how machine learning has revolutionized the capacity of science assessment in terms of tapping into complex constructs, improving assessment functionality, and facilitating scoring automaticity.

Based on their investigation, the researchers identified various ways in which machine learning has transformed traditional science assessment, as well as anticipated impacts that it will likely have in the future (such as providing personalized science learning and changing the process of educational decision-making).

"Machine learning is increasingly impacting every aspect of our lives, including education," said lead author Xiaoming Zhai, an assistant professor in the University of Georgia's Mary Frances Early's Department of Mathematics and Science Education. "It is anticipated that the cutting-edge technology may be able to redefine science assessment practices and significantly change education in the future."

The article is part of a special journal issue on "Science teaching, learning, and assessment with 21st century, cutting edge digital technologies."

More information: Xiaoming Zhai et al, From substitution to redefinition: A framework of machine learning-based science assessment, *Journal of Research in Science Teaching* (2020). [DOI: 10.1002/tea.21658](https://doi.org/10.1002/tea.21658)

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