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Multiple representations for systems of linear equations via the computer algebra system maple.

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Summary: A number of different representational methods exist for presenting the theory of linear equations and associated solution spaces. Discussed in this paper are the findings of a case study where first year undergraduate students were exposed to a new (to the department) method of teaching linear systems which used visual, algebraic and data-based representations constructed using the computer algebra system Maple. Positive and negative impacts on the students are discussed as they apply to representational translation and perceived learning.

Classification: H65 D45 R25

Keywords: computer algebra system; multiple representations; linear algebra; maple; case studies; first year students; university teaching; teaching methods