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Why does linear algebra have to be so abstract?

Stewart, Sepideh (ed.), And the rest is just algebra. Cham: Springer (ISBN 978-3-319-45052-0/hbk; 978-3-319-45053-7/ebook). 205-217 (2017).

Summary: Research has shown that students struggle with the abstraction of linear algebra and many remedies have been tried. Here I offer another idea to add to your arsenal. Instead of presenting linear algebra as a stand-alone subject, deduced logically from a founding set of axioms, maybe we could present it as a subject that evolves naturally from students' experiences, either from prior contact with vectors in a physics course, or else from discussions and experiments designed to provoke a need to abstract, to generalize, to define and to prove.

Classification: H60

Keywords: vector; linear independence; computer-based experiments; concreteness; generalizability; necessity; need for proof

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