

How Intuition and Language Use Relate to Students'  
Understanding of Span and Linear Independence

Contributed Research Report

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This report describes a case study in an undergraduate elementary linear algebra class about the relationship between students' understanding of span and linear independence and their intuition and language use. The study participants were seven students with a range of understanding levels. The purpose of the research was to explore the relationship between students' "natural" thinking and their conceptual development of formal mathematics and the role of language in this conceptual development. Findings indicate that students with low indicators of intuition and stronger language skills developed better understanding of span and linear independence. The report includes possible instructional implications.

Keywords: Intuition, Language use, Linear algebra, Linear independence, Span