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Mathematics and its value for engineering students: what are the implications for teaching?

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Summary: Mathematics has long been known to be problematic for university engineering students and their teachers. This paper presents recent data gathered from interviews with engineering students who experienced problems with mathematics and their lecturers during their transition through the first year in different programme contexts. Our interviews with the students reveal how they understand the relation between engineering and mathematics and we draw on the concept of ‘use- and exchange-value’ to explore this relationship more fully. This paper challenges both the pedagogical practice of teaching non-contextualized mathematics and the lack of transparency regarding the significance of mathematics to engineering. We conclude that the value of mathematics in engineering remains a central problem, and argue that mathematics should be a fundamental concern in the design and practice of first-year engineering.

Classification: D35 D45 M55

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