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**Deficit or difference? the role of students' epistemologies of mathematics in their interactions with proof.**

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The ability to handle proof is the focus of a number of well-documented complaints regarding students' difficulties in encountering degree-level mathematics. However, in addition to observing that proof is currently marginalised in the UK pre-university mathematics curriculum with a consequent skills deficit for the new undergraduate mathematics student, we need to look more closely at the nature of the gap between expert practice and the student experience in order to gain a full explanation. The paper presents a discussion of first-year undergraduate students' personal epistemologies of mathematics and mathematics learning with illustrative examples from 12 student interviews. Their perceptions of the mathematics community of practice and their own position in it with respect to its values, assumptions and norms support the view that undergraduate interactions with proof are more completely understood as a function of institutional practices which foreground particular epistemological frameworks while obscuring others. It is argued that enabling students to access the academic proof procedure in the transition from pre-university to undergraduate mathematics is a question of fostering an epistemic fluency which allows them to recognise and engage in the process of creating and validating mathematical knowledge. (orig.)

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