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Understanding the Nature of Student Conceptions of Mathematics: A Study of Mathematics Students in Higher Education

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Abstract : This study examines the nature of student conceptions of mathematics in higher education using quantitative research methods. This study validates the Short Form of Conception of Mathematics survey as well as reveals the epistemological nature of student conceptions of mathematics. Using a random sample of mathematics students in Australia and New Zealand (N=274), this paper highlighted three key findings, of relevance to lecturers in higher education. Firstly, descriptive data shows that mathematics students in Australia and New Zealand reported that mathematics is about numbers and components, models and life. Secondly, models conceptions of mathematics predicted strong examination performances using regression analyses; and thirdly, there is a positive correlation between high mathematics examination scores and cohesive conceptions of mathematics.

Keywords : higher education, learning mathematics, mathematics performances, student conceptions of mathematics
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