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Author

SCHEJA, Max

Title

Transformation and contextualisation : conceptualising students' conceptual understandings of threshold concepts in calculus / Max Scheja ; Kerstin Pettersson

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Abstract

Research on student learning in higher education suggests that threshold concepts within various disciplines have the capacity to transform students' understanding. The present study explores students' understanding in relation to particular threshold concepts in mathematics: integral and limit and tries to clarify in what sense developing an understanding of those threshold concepts involves a transformation of understanding in relation to ways of thinking in mathematics. Drawing on data collected in interviews with students taking a basic course on calculus the analysis offers an initial characterisation of students' understandings as algorithmic. It then proceeds to construct a more fine-grained theoretical account for how these understandings develop in the course of the interview, suggesting that the transformative aspects of threshold concepts may be conceptualised in terms of shifts in students' contextualisations allowing the development of conceptions at different levels of abstraction simultaneously interacting to shape students' awareness of the ways of thinking and practising in the subject. (HRK / Abstract übernommen) Scheja, Max, E-Mail:

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max.scheja@ped.su.se