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Special Edition:
Emergent learning and threshold
concepts in tertiary education



Waikato Journal of Education Te Hautaka Mātauranga o Waikato

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Submissions for special sections of the journal are usually by invitation. Offers for topics for these special sections, along with offers to edit special sections are also welcome.

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Contributors

Title of article: Foreword

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Jan H. F. Meyer is a Professor of Education in the School of Civil Engineering at The University of Queensland, Australia. Prior to this appointment, he was a Professor of Education and the foundation Director of the Centre for Learning, Teaching, and Research in Higher Education at Durham University, United Kingdom. Jan is the originator of the notion of a ‘threshold concept’, an idea that was subsequently developed with Ray Land into what is now referred to as the Threshold Concepts Framework.

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Title of article: Mastering threshold concepts in tertiary education: “I know exactly what you are saying and I can understand it but I’ve got nowhere to hook it.”

Authors: Ann Harlow and Mira Peter

Ann Harlow has been a Senior Research Officer at the Wilf Malcolm Institute of Education Research for over ten years. She was a co-principal investigator of a two-year funded research project into [threshold concepts](#) across tertiary disciplines and co-organised the highly successful conference on TCs: Transforming disciplines: Emergent learning and threshold concepts, [ELTC 2013](#). Ann has been active in threshold concept research since 2009.

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Dr Mira Peter, a Senior Research Fellow, at the Wilf Malcolm Institute of Educational Research, at The University of Waikato, has over 30 years experience as a researcher in the areas of cognitive science, ecological psychology, complex systems, threshold concepts, and statistical data analysis. She was a co-principal investigator, of a [threshold concepts](#) project and was a co-organiser of the [ELTC 2013](#) conference: Transforming disciplines: Emergent learning and threshold concepts.

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Title of article: Dancing onto the page: Crossing an academic borderland

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Title of article: Transformed understandings: Subjective interpretation and the arts

Authors: Kirstine Moffat and Anne McKim

Dr Kirstine Moffat is a Senior Lecturer in the Faculty of Arts and Social Sciences, at the University of Waikato. Kirstine seeks to motivate and engage students through innovative teaching practice and aims to challenge students to think independently, critically and creatively. Kirstine won the University of Waikato Teaching Excellence Award in 2012.

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Title of Article: 'Crossing frontiers without a map'—the role of threshold concepts and problematic knowledge in religious education and spirituality

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Title of Article: Doctorates in the dark: Threshold concepts and the improvement of doctoral supervision

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Dr. Marcia Johnson is the Director of the Centre for Tertiary Teaching & Learning at the University of Waikato. Marcia's work has included the introduction of cross-disciplinary cohort-based initiatives to improve the student learning experience. One of these initiatives is a "talking to think; thinking to write" peer writing programme for PhD students.

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Title of Article: Embedding threshold concepts: The use of a practice—theory—practice cycle

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Mary Hedges is a Senior Research Fellow at the Centre for Longitudinal Research, Faculty of Medical and Health Sciences, University of Auckland. Mary has 20 years of experience in academia with a focus on applied microeconomics and teaching. Her research interests are in the areas of labour economics, behavioural economics and life-course econometric modelling.

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Title of Article: Student and expert perceptions of the role of mathematics within physics

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Dr Marcus Wilson currently teaches physics at the Faculty of Science and Engineering, University of Waikato. His research covers a diverse range of topics across the realm of physics, in both academia and industry. Marcus has been instrumental in setting up Waikato Engineering Education Research Unit (WEERU) to improve learning outcomes for engineering students.

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Title of Article: Modularisation of learning outcomes in terms of threshold concepts

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Anthony Parker, is Professor of Electronics Engineering in the Faculty of Science and Engineering, at the Macquarie University. Tony has held an academic position at Macquarie University for over twenty years and has served the last decade as Head of Department of Engineering. He has contributed to developing processes for top-down curriculum design driven by learning outcomes.

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Daniel McGill is the Programme Manager for the Department of Engineering at the Faculty of Science and Engineering, Macquarie University. Daniel is responsible for curriculum development and planning, international development and departmental academic management. At present, curriculum innovation in the context of engineering program development is a major focus of Daniel's activities.

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Title of Article: Forging the jewels of the curriculum: Educational practice inspired by a thermodynamic model of threshold concepts

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Professor Jonathan Scott has been the foundation professor of Electronics Engineering at the University of Waikato for the last seven years. With interests in mechatronics, microwaves, metrology, and electronics at the biological interface, he received a faculty teaching excellence award in 2011 from the University of Waikato.

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Title of Article: 'Nettlesome knowledge' and threshold concepts: An afterword

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Professor Susan Groundwater-Smith has had an extensive career in teacher education, especially in relation to teachers-as-researchers. She is the convener of the Coalition of Knowledge Building Schools, a Special Interest Group in the Faculty of Education and social work at the University of Sydney. This work has drawn the attention of researchers in Australia, the Netherlands and the United Kingdom.

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