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## Research Interests

My research interests encompass both mathematics education and aspects of the philosophy of education. I am particularly interested in the influence of teacher attributes and organisational/societal factors on the pedagogical practices of mathematics educators and students' mathematical learning. I am also interested in the influence of active learning strategies on the affective domain in mathematics education and, from a philosophical/mathematical perspective, I retain an interest in the theoretical foundations of educational measurement models. My current main interests are:

The influence of teacher characteristics and organisational/societal factors on mathematics teachers' pedagogical practices and students' mathematical learning

Strategies for improving students' mathematical learning outcomes

The mathematical and philosophical foundations of educational measurement models

## Research output

### **Framework for analysing continuity in students' learning experiences during primary to secondary transition in mathematics**

Cantley, I., O'Meara, N., Prendergast, M., Harbison, L. & O'Hara, C., 24 Jun 2020, In : Irish Educational Studies.

### **Teachers' self-perceptions of mathematical knowledge for teaching at the transition between primary and post-primary school**

O'Meara, N., Prendergast, M., Cantley, I., Harbison, L. & O'Hara, C., 2020, In : International Journal of Mathematical Education in Science and Technology . 51, 4, p. 497-519 23 p.

### **A Quantum Measurement Paradigm for Educational Predicates: Implications for validity in educational measurement**

Cantley, I., 28 Nov 2019, *Measuring up in Education: Philosophical Explorations for Justice and Democracy within and beyond Cultures of Measurement in Educational Systems*. Stolz, S. & Webster, S. (eds.). Routledge

### **Gender differentials in mathematical achievement: Insights from a multilevel analysis of high-stakes examination results**

Cantley, I., 09 Nov 2019.

### **Bridging the Primary to Secondary School Mathematics Divide: Teachers' Perspectives**

Prendergast, M., O'Meara, N., O'Hara, C., Harbison, L. & Cantley, I., 19 Jan 2019, In : Issues In Educational Research. 29, 1, p. 243-260 18 p.

### **PISA and policy-borrowing: A philosophical perspective on their interplay in mathematics education**

Cantley, I., 2019, In : Educational Philosophy and Theory. 51, 12, p. 1200-1215 16 p.

### **Teacher efficacy beliefs at the horizon between primary and secondary school mathematics education**

Harbison, L., Prendergast, M., Cantley, I., O'Meara, N. & O'Hara, C., 2019, (Accepted).

### **Lecturers' perceptions of students' mathematical preparedness for higher education in one Institute of Technology: In the conference proceedings of the Ireland International Conference on Education (IICE-2018)**

Duggan, L., Cowan, P. & Cantley, I., 2018.

**A cross-national comparative study of teachers' views on the transition from primary to post-primary mathematics education**

Cantley, I., O'Meara, N., Prendergast, M., Harbison, L. & O'Hara, C., 11 Nov 2017.

**Are first year undergraduates mathematically resilient? A comparison of a STEM and a non-STEM discipline in an Institute of Technology**

Duggan, L., Cowan, P. & Cantley, I., 01 Sep 2017, In : International Journal for Cross-Disciplinary Subjects in Education . 8, 3, p. 3169-3178 10 p.

**The Mathematical Transition to Higher Education – A case study of Engineering Students in one Institute of Technology: In the conference proceedings of the Ireland International Conference on Education (IICE-2017)**

Duggan, L., Cowan, P. & Cantley, I., Apr 2017.

**Project Maths and the Non-Cognitive Domain – The Perceptions of a group of Engineering Students in one Institute of Technology**

Duggan, L., Cowan, P. & Cantley, I., 01 Mar 2017, In : International Journal for Cross-Disciplinary Subjects in Education . 8, 1, p. 3025-3033 9 p.

**A quantum measurement paradigm for educational predicates: Implications for validity in educational measurement**

Cantley, I., 2017, In : Educational Philosophy and Theory. 49, 4, p. 405-421 17 p.

**Are First Year Undergraduates Mathematically Resilient? A Comparison of a STEM and a non-STEM Discipline in an Institute of Technology: In the conference proceedings of the Ireland International Conference on Education (IICE-2017)**

Duggan, L., Cowan, P. & Cantley, I., 2017.

**Collaborative cognitive-activation strategies as an emancipatory force in promoting girls' interest in and enjoyment of mathematics: A cross-national case study**

Cantley, I., Prendergast, M. & Schlindwein, F., 2017, In : International Journal of Educational Research. 81, p. 38-51

**Strengthening the Bridge between Primary and Secondary Mathematics Education**

Prendergast, M., O'Meara, N., O'Hara, C., Harbison, L. & Cantley, I., 2017.

**Teacher Knowledge & Practices – The Key to Educationally Effective Transition from Primary to Second Level Mathematics Education**

O'Meara, N., Prendergast, M., Cantley, I., Harbison, L. & O'Hara, C., 2017.

**Teachers' Perspectives on the Transition from Primary to Secondary School Mathematics**

Prendergast, M., O'Meara, N., O'Hara, C., Harbison, L. & Cantley, I., 2017.

**Evaluating the impact of an innovative learning resource on the affective domain in mathematics education**

Cantley, I. & Prendergast, M., 26 Aug 2016.

**A Quantum Framework for Educational Measurement**

Cantley, I., 26 May 2015.

**How secure is a Newtonian paradigm for psychological and educational measurement?**

Cantley, I., Feb 2015, In : Theory and Psychology. 25, 1, p. 117-138 22 p.

**Implications of Wittgenstein's later philosophy for learning and teaching**

Cantley, I., 29 Mar 2014.

**A test of Sen's entitlement hypothesis**

McGregor, P. & Cantley, I., 01 Jan 1992, In : Statistician. 41, 3, p. 335-341 7 p.

## Projects

### **R3713EDU: PIEM: Pupil Interest and Enjoyment of Mathematics**

Cantley, I.

17/08/2015 → ...

## Activities

### **British Society for Research into Learning Mathematics Autumn 2019 Conference**

Ian Cantley (Organiser)

09 Nov 2019

### **NI Mathematics Teacher CPD Conference**

Ian Cantley (Participant)

28 Aug 2019

### **Educational Philosophy and Theory (Journal)**

Ian Cantley (Peer reviewer)

2018 → ...

### **British Society for Research into Learning Mathematics Autumn 2017 Conference**

Ian Cantley (Speaker)

11 Nov 2017

### **ECER Annual Conference 2016**

Ian Cantley (Speaker)

26 Aug 2016

### **ATINER 10th Annual International Conference on Philosophy**

Ian Cantley (Speaker)

25 May 2015 → 28 May 2015

### **Council for the Curriculum, Examinations & Assessment (External organisation)**

Ian Cantley (Chair)

2015 → 2016

### **International Journal of Educational Research (Journal)**

Ian Cantley (Peer reviewer)

2015 → ...

### **Theory and Psychology (Journal)**

Ian Cantley (Peer reviewer)

2015 → ...

### **PESGB Annual Conference 2014**

Ian Cantley (Speaker)

28 Mar 2014 → 30 Mar 2014