SCIENCE OF LEARNING RESEARCH CENTRE

2016 SEMINAR SERIES

The Science of Learning Research Centre would like to invite you to attend the following seminar:

Confused? Don't worry! Re/constructing video data to explore the role of confusion in inquiry science

Traditionally confusion is considered to be a negative experience in the classroom. However in the context of inquiry science, we argue that confusion can be central to reasoning and learning. This research involves the exploration of students' reasoning in science through constructing representations across multiple modes. Over 6 lessons in distinct topics, year 7 students undertook a series of inquiry challenges involving collaborative reasoning through experimentation, modelling and drawing. The lessons were conducted in the Science of Learning Classroom facility with multi-tracked video and audio facilities that allowed capture and analysis of the talk and gesture of each student group.

We will discuss the process by which we reviewed and refined the video data as themes emerged around our general aim of exploring reasoning through representation construction. Confusion was one such theme that proved generative in understanding the inquiry process.

We analysed episodes of confusion where the students were unsure of how to proceed with the challenge, and identified a variety of resources students drew on, and pathways through which students engaged with the challenge, remained in a confused state or withdrew from the challenge. We present a model that identifies pathways by which confusion leads to productive outcomes. The construction of drawings or other representations of visual/ spatial aspects of phenomena played a central role in this. We argue that confusion is central to productive inquiry processes and explore in the paper the conditions under which confusion can lead to engagement and reasoning. This has implications for the design and implementation of inquiry based science learning.

Professor Russell Tytler is an educationalist focusing on science education. He was awarded a PhD in science education from Monash University in 1995. He is the Chair in Science Education at Deakin University, Coordinator of the "Re-imagining futures in Science, Technology, Environmental and Mathematics (STEME) research group and Deputy Director of the Centre for Research in Educational Futures and Innovation at Deakin University.

Dr George Aranda completed his PhD in cognitive neuroscience at Swinburne University of Technology in 2008 before transitioning into science education research. Dr Aranda works with Professor Russell Tytler investigating the role of social in the construction of representations in the classroom. He is also looking at the interaction of eye-movement and knowledge as students learn.
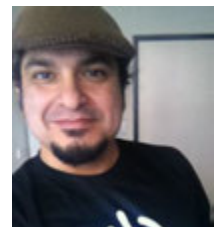
Dr Radhika Gorur has a PhD in education (University of Melbourne), an MA in Curriculum and Teaching (Michigan State University), a Graduate Diploma in Education (University of Melbourne) and nearly 30 years of experience in teaching and leadership positions in schools in various parts of the world. She has previously taught in the Master of Teaching and the Graduate Certificate in Curriculum Leadership at the University of Melbourne. Her research spans three areas – research on classrooms, learning and teaching; sociology of numbers and measurement in education policy; and sociology of knowledge. She is a Director of the Laboratory of International Assessment Studies (international-assessments.org).

Mr Joseph Ferguson is a Research Assistant at Deakin University, Faculty of Arts and Education.

Seminar Details

Tuesday July 19th
5pm-6pm (light refreshments from 4:30pm)
Theatre 227
Melbourne Graduate School of Education
234 Queensbury Street, Carlton, VIC 3053

Seminar Registration

Please contact Dee Al-Nawab by **July 18th**
Email: hadeel.al@unimelb.edu.au