

PeCALE

Research Focus Area



Federation
University,
Gippsland
Room 5N158,
10 December
2018

SYMPOSIUM HANDBOOK

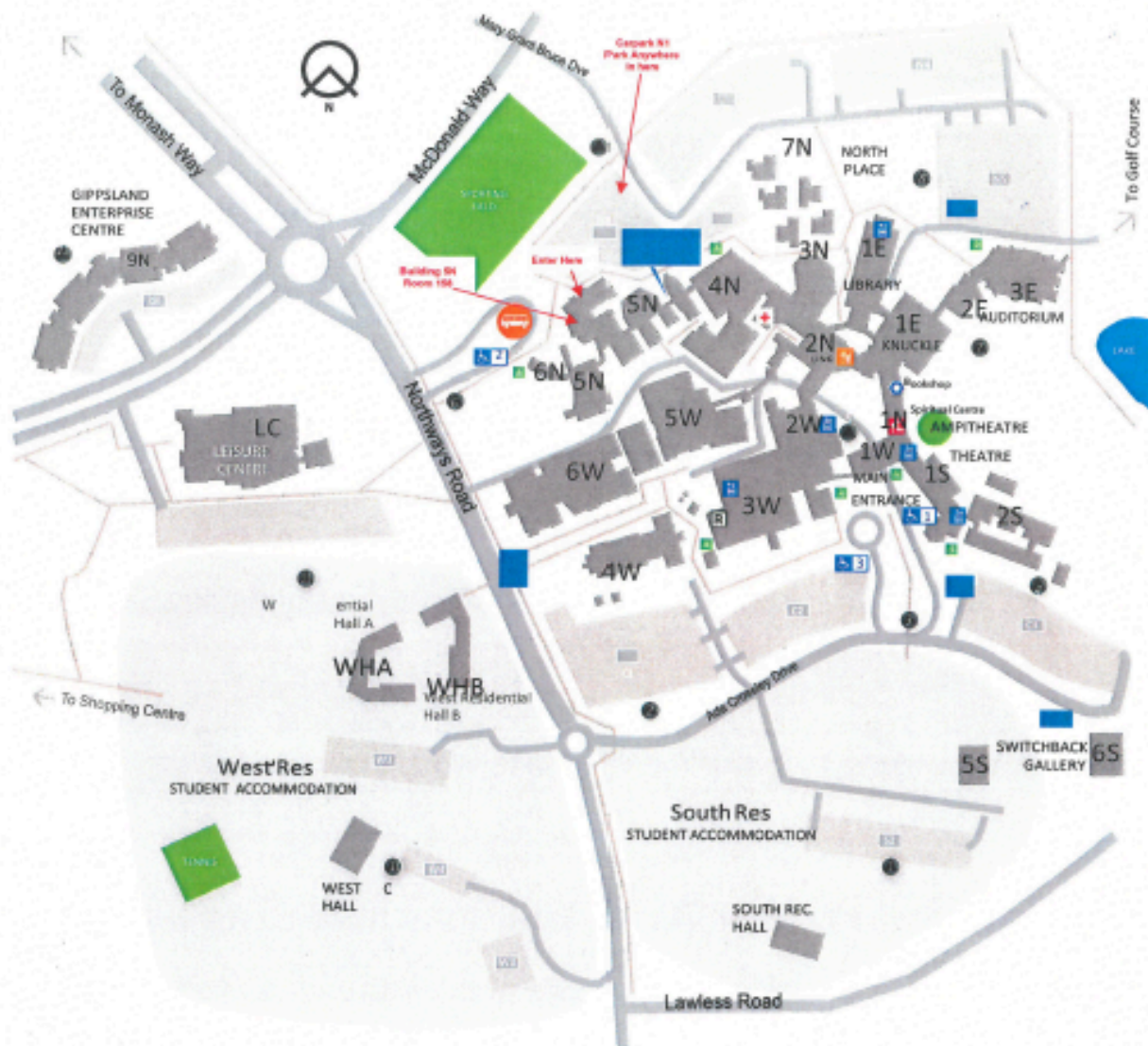
**Research Informed Practices: Practical
Applications of thinking routines and strategies
in teaching innovations**

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Symposium Venue

Gippsland Campus, Churchill | Map



Meeting Room 5N 158

When entering the campus from Monash Way turn left at the round-about onto McDonald Way and then right into Mary Grant Bruce Drive. Continue on and then turn left into Carpark N1.

Once parked walk towards building 5N (towards the end of the carpark) then up the front steps/ramp through the front door and then turn right at the 2nd door on the right.

Please see above map with parking, entry & room location marked in Red.

Welcome

As convenor of the PeCALE (Pedagogy, Curriculum, Assessment and Learner Engagement) Research Focus Area, and on behalf of the organising committee, it is my pleasure to welcome you to the inaugural PeCALE Symposium. This symposium is the first of the group's annual community events, which are intended to bring together representatives from formal and informal educational settings, organisations, and private industry partners with researchers from The School of Education at Federation University. This year, we also have the fortune to be joined by two visiting academics from Halmstad University, Sweden.

The PeCALE research group consists of approximately twenty researchers from the School of Education at Federation University. The group seeks to understand pedagogy, curriculum, assessment and learner engagement within a variety of diverse formal educational contexts, as well as informal and community contexts. PeCALE researchers employ a multitude of research approaches and methodologies to explore the complex interrelationships between broad and specific curriculum contexts and approaches, quality of learning and teaching, assessment of learning, and impact on learning.

The PeCALE group consists of the following academics:

<i>Based at the Gippsland campus:</i>	<i>Based at the Berwick campus:</i>	<i>Based at the Ballarat campus:</i>
Heather Ernst Dr Anna Fletcher Dr Monica Green Di Harrison Dr Stuart Levy Dr Sue Plowright A/Prof Margaret Plunkett Clare Williams	Dr Hongming Ma Dr Kathy Swinkels	Michelle Briede Dr Barbara Chancellor A/Prof Dean Cooley Dr Sharon McDonough Prof Claire McLachlan Naomi Nelson Melania Pantelich Bruce Schmidt Dr Peter Sellings Chris Wines

The theme for the 2018 symposium is *Critical and Creative Thinking*, which is a capability in the Victorian Curriculum. As described in the curriculum documents, this capability entails students' development of increasingly complex and sophisticated processes of thinking. As stressed in the Victorian curriculum, such thinking processes are fundamental to effective learning across all learning areas and should therefore be taught, learnt, developed and applied throughout the curriculum areas. While the symposium will only cover some areas, we look forward to a stimulating discussion with you about the practical applications and possibilities for practice.

We hope you find much of interest in the program, that you get us all thinking by contributing to our conversations (we're all here to learn!) and that you come away with new ideas and contacts for the future. We look forward to seeing you at the next PeCALE symposium!

Dr Anna Fletcher

PeCALE Convenor

Speaker Biographies

Gabbi Boyd is Principal of Welshpool and District Primary School and teaches the Grade 4-6 class two days per week. She fosters an 'open door' policy in the school which welcomes visitors and contributors to ensure the school is a pedagogical leader. She has been working closely with Sue Plowright on the 'going visiting' project for two years as a collaborator and team teacher.

Sophie Callcott is a teacher of the Grade 4-6 class two days per week at Welshpool and District Primary School. She been a team teacher with Sue Plowright in the 'going visiting' project at various times throughout the two year project. The Grade 4-6 class students have been participants in the 'going visiting' pedagogical project for one-two years and have been learning and practicing how to form generous and creative ideas about a class topic that was developed and decided on through a number of decision making processes as part of experiencing various forms of democracy.

Dr Anna Fletcher is a lecturer at the Gippsland Campus, where she teaches in the Primary and Secondary BEd and Masters programs. Before becoming a teacher educator, she taught in a range of school settings in Australia and Sweden. Anna's research interests involve formative assessment with a particular interest in student voice, student agency and self-regulated learning. Her research tends to be framed by social cognitive theory, which combines students' intrapersonal factors, syllabus outcomes and the classroom context. She has led funded research projects at regional level, and has instigated international research partnerships. In August 2017, she was appointed Convenor of the Research Focus Area for Pedagogy, Curriculum, Assessment and Learner Engagement (PeCALE). In addition, Anna represents FedUni on the National consortium of thirteen universities developing and implementing the Graduate Teaching Performance Assessment (GTPA).

Di Harrison is a lecturer in the School of Education, Federation University and has been teaching humanities education to both undergraduate and postgraduate students for the past five years. Initially a specialist, Indonesian language teacher, Di has taught in a variety of educational settings: primary, secondary, and tertiary. She is currently working towards completing her second Master's qualification and her thesis explores social presence in the online space, utilising a phenomenological lens to interpret the lived experiences of students. Her commitment to the humanitarian ideals of Rotary International inspires her, both professionally and personally.

Bronwyn Joyce is a teacher from Traralgon, Australia. She specialises in Curriculum Innovation and the delivery of training, linked to critical and creative thinking and bringing the world into classrooms. In addition to teaching and training, Bronwyn uses the connection of social media to mentor and globalise teachers and classrooms internationally. She has travelled the world speaking about the importance of preparing students to be future ready, and is an advocate for the United Nations Sustainable Goals. Bronwyn believes we live in a world where we should be learning together. Her Our Global Classroom mission statement is simple – One World, One Classroom.

Dr Hongming Ma is currently a lecturer in the School of Education at Federation University Australia. Before becoming affiliated with FedUni, she was a lecturer in the Faculty of Education at Monash University for five years. She completed her Masters and PhD study at Monash University, in the field of cross-cultural understanding of the nature of science. Her

main research interests are: the nature of science/technology and its role in school science/technology curriculum at different levels; affective learning in science and relevant teacher knowledge; cross-cultural understanding of aforementioned issues. Her recent research work explores the impact and implications of conducting Science education through university-school partnerships and how learner emotional experience in learning science is influenced by the interplay of learner personal interest and the classroom learning environment.

Dr Susan (Sue) Plowright collaborates on a weekly basis with two small rural primary schools in her local area of South Gippsland, to further develop and explore a pedagogical idea she developed in her doctoral thesis known as 'going visiting'. This work relates to, and intends to inform, pedagogies for integrating the Ethical Capabilities, Speaking and Listening, Civics and Citizenship and Critical and Creative Thinking curriculum areas. The project is founded on teaching an 'encompassing ethic' which is a process of cultivating generous and creative judgements and actions.

Bruce Schmidt is predominantly a science educator who has worked across a variety of areas. Having started his professional career as a Civil Engineer, Bruce then moved into teaching Secondary physics, science and maths as well as horticulture, health and electronics. Involvement in the Science in Schools Research Project led to a role as a Regional Project Officer supporting research and initiatives in science, maths and general education in Western Victorian primary and secondary schools. This in turn led to his current position as a Lecturer in Education at Federation University. Bruce's main area of interest is in engaging learners with science and mathematics through realistic contexts.

Dr Peter Sellings is a Mathematics Education Lecturer in the School of Education at Federation University Australia. Peter has taught all levels of Secondary school mathematics as well as middle years' mathematics classes in P-12 schools. In 2011, Peter was awarded an Australian Postgraduate Award Industry (APAI) scholarship to study his PhD. This PhD, completed in January 2015, was titled "A study of the effects of student generated representations on student engagement and learning" examined how curriculum interventions in mathematics and science classes can improve student engagement. Peter worked on the ARC linkage project titled "Improving regional secondary students' learning and well-being", a project that led to Peter co-authoring chapters in the Sense publication "Adapting to teaching and learning in open-plan schools". Peter was also a co-editor for this book which was published in 2014. Peter is a dedicated and passionate educator who enjoys teaching mathematics to all levels of students, placing particular emphasis on student engagement, higher order thinking, formative assessment and student centered learning.

Fredrik Thornberg has a Philosophy Licentiate in Education and conducts practical research on teachers' professional competence. Fredrik has researched teacher's competence in classroom assessment and is now studying professional teaching competence within Halmstad University's practice-school project. In this study, researchers from three universities in Sweden and Norway collaborate with student teachers and teachers to further develop observation and supervision based on digital tools. Within the project, an app has been developed, Mentoring and Observation Software (MOSO) that students and supervisors use to video, take photos, evaluate and give feedback to each other. The content in the app is used as a basis for supervision 2.0.

Ann-Christine Wennergren is an Associate Professor in pedagogy at Halmstad University, Sweden. Ann-Christine researches educational improvement tools and structures in collaboration with preschools, schools and municipalities. In particular, her research explores collaborative approaches to improve teacher responsiveness to the needs of students or particular school contexts. These collaborations tend to involve research circles or action research, in which teachers are supported in identifying areas of improvement that in turn provide the basis for analysis of improvements in teaching and learning. This collaborative inquiry approach has had significant impact on schools' results. Ann-Christine is also a key investigator in a joint research project with two Norwegian universities, exploring collegial conversations between preservice and in-service teachers using digital observation tools for coaching and multimodal feedback purposes.

Chris Wines has been a Science/Maths teacher for over 25 years in regional Victoria. He has been a lecturer at Mt Helen in a partnership arrangement with local schools for over 10 years. Chris cherishes this opportunity to combine teaching in schools with Initial Teacher Education. Chris works within the Master of Teaching (Secondary) team where most PST experiences happen in partnership schools, mainly Ballarat HS. He teaches science curriculum and professional learning community (PLC) courses. Apart from school-university partnerships, Chris is passionate about researching in STEM. He previously completed a 3 year, OLT funded, collaborative project with the RUN universities titled: "It's Part of My Life: Engaging university and community to enhance science and mathematics education". The success of this project has enabled embedding a new approach to assisting PSTs increase their confidence and competence in teaching Maths and Science into university courses.

Abstracts

Session 1

Developing Critical and Creative Thinking Through the project of ‘Science Beyond a classroom Setting’

Hongming Ma, Federation University, Gippsland, Victoria

ABSTRACT

In this presentation I will share the experience (observation and reflection) I had when working with local schools on a project called “Science beyond a classroom setting” focussing on the Questions and Possibilities strand of the Critical and Creative thinking capability of the Victorian Curriculum. In the project, pre-service teachers were mentored to deliver science lessons to primary-aged students from local schools in the Latrobe Valley. Uniquely, the teaching opportunity involved taking science teaching outside the traditional classroom and lecture settings into wetlands and school grounds. I will reflect on how the experience contributed to the development of critical and creative thinking among pre-service teachers. The presentation uses research findings from Kampilis and Berki (2014) as a framework for discussing the possible ways of nurturing questioning and developing ideas among student learners. The purpose is to open up the discussion on how the experience might be applied in broader educational contexts beyond teacher education (in primary and secondary schools).

The use of thinking routines in Literacy and Numeracy based Teacher Education courses

Peter Sellings, Federation University, Ballarat, Victoria
Naomi Nelson, Federation University, Ballarat, Victoria

ABSTRACT:

This presentation will focus on observational data collected through classroom observations as part of Federation University’s Peer Enhancement program, which promotes University lecturers to reflect on their own practice. The research question “How do lecturers promote risk taking in learning” was explored as part of this process. The tool used to collect these observations considered elements of risk from two points of view, the lecturer’s and the student’s. The discussion and post analysis in relation to our own teacher education practice led us to a better understanding of the need to promote metacognition - the knowledge and skills that enable students to identify, describe, understand, practice, develop and manage their own learning processes - within the university classroom. Such changes include adapting our practices be more explicit about how the thinking strategies used in the tertiary classroom could be adapted for students in both the primary and secondary classrooms. These findings as well as the observational tool we used will be further explored in this presentation.

Interactive observations to inform professional learning

Anki Wennergren, Halmstad University, Sweden

Fredrik Thornberg, Halmstad University, Sweden

ABSTRACT:

This Nordic research collaboration concerns the development and trialling of digital tools for observation to improve teaching. The intention is to create an interactive observation record to inform collegial conversations as part of teachers' professional learning. The use of digital tools to collect observations for coaching and collegial conversations remain scant despite the prevalence of digital tools within classroom contexts.

The aim of our presentation is to describe how digital tools can influence participation in professional learning. The study has involved groups of teachers, preservice teachers and mentors who have trialled the multimodal tool in a three-step process. Prior to, during and after teaching, the participants share notes, photos, video clips and comments that are all collated in a digital log. Data from the process logs have been collected in a range of school settings in Norway and Sweden. Methods to collect data about the participants experiences include surveys and focus group interviews. Findings indicate four themes of legitimate participation through participant: 1) sharing of plans before teaching; 2) conducting interactive observations of teaching; 3) using digital evidence from observations to prepare the collegial conversation; 4) selecting a particular aspect from the evidence of practice as a base for mentoring, in preparation for the collegial conversation. Findings imply that when digital observation tools are used to support collegial conversations; conversations are characterised by an immediate focus about didactical choices in the teaching sequence, rather than spending time recapturing the teaching sequence. This finding emerged in conversations between experienced teachers, as well as in conversations between mentor teachers and preservice teachers.

Session 2 (after morning tea)

Reasoning and global issues: presenting a critical, creative and globally-connected primary classroom

*Di Harrison, Federation University, Gippsland, Victoria
Bronwyn Joyce, Liddiard Road Primary School*

ABSTRACT:

This presentation highlights the impact on student engagement when learning about, and reasoning through, global issues in a critical and creative manner. Di and Bronwyn share insights and experiences gained from implementing digital pedagogical approaches in Bronwyn's year 5/6 class, where students develop dispositions that support logical, strategic, flexible and adventurous thinking about a range of global issues. They gain a critical awareness of the United Nation's seventeen 'Sustainable Development Goals' and the creation of a 'call to action' to highlight particular global concerns. Drawing on this work, Bronwyn & Di focus on insights gained from a peer teaching session between Bronwyn's primary students and Federation university preservice teachers and their shared interactions with 'Flipgrid', a website to create "grids" of short discussion-style questions, which students respond to using reasoning strategies via recorded videos. The 5/6 class are also members of a free 'Our Global Classroom' network, which is a conduit for students to collaborate and engage in critically and creatively thinking and learning about their worlds.

Open to possibilities: collaboratively cultivating generous reasoning and generative questioning in an upper primary classroom

*Susan Plowright, Federation University, Gippsland, Victoria
Gabbi Boyd, Welshpool Primary School
Sophie Callcott, Welshpool Primary School
Grades 4-6 children Welshpool Primary School*

ABSTRACT:

For 24 months, children of a grade 4-6 class, their teachers, and Susan (Sue) from Federation University, have been exploring thoughtful, generous and plausible possibilities through a reasoning approach we call 'going visiting'. This is the will and capability to visit other perspectives (real and imaginary) before making judgements and decisions. It is built on Arendt's ideas about thinking 'representatively', that is, imagining and seeking out other standpoints in order to live peaceably and sustainably on Earth. In keeping with the project's 'emergent' nature, this video presentation will emerge through a student-led 'occasion' where the children will question Sophie Callcott teacher, Gabbi Boyd teaching Principal and Sue. This mirrors an earlier occasion where the children turned the tables, insisting on interviewing Sue after she'd interviewed each of them on camera about their understanding of the project. Their questions ranged from banal to philosophical to critically perceptive and challenging and they in turn were fascinated by the critical thinking upon which the project is founded. This is an unscripted event where the children will be guided only to ask us questions about the thinking aspects of the project, as such, anything is possible!

Session 3 (after lunch)

Developing Metacognition: Engaging students in scaffolded self-assessment

Anna Fletcher, Federation University, Gippsland, Victoria

ABSTRACT:

Meta-cognition – the knowledge and skills that enable students to identify, describe, understand, practice, develop and manage their own learning processes– constitutes a key capability in the Victorian Curriculum. Metacognition is also the conceptual underpinning of self-assessment, and an essential component of self-regulated learning. This paper presents findings relating to primary students' metacognition from a one-setting, cross-sectional practitioner research study into self-assessment, which was conducted at an independent (non-religious, co-educational) primary school in the Northern Territory. The research question examined how primary students' scaffolded planning, as part of the forethought phase in the self-assessment process, shaped students' development of metacognitive and self-regulated learning skills. The data collection included students' planning templates, writing samples, interviews with students and teachers and email correspondence with teachers. A framework of social cognitive theory was used for analysis. The findings indicate that a carefully structured three-phase self-assessment process has the potential to help scaffold primary students' development of assessment capabilities such as learner agency, confidence, motivation, and persistence in challenging, yet meaningful learning tasks.

Embedding critical and creative thinking into science and mathematics initial teacher education programs and the flow on effect to schools

Chris Wines, Federation University, Ballarat, Victoria
Bruce Schmidt, Federation University, Ballarat, Victoria

ABSTRACT:

The aim of this presentation is to share the Enhancement-Lesson-Reflection process developed through the "It's Part of My Life: Engaging university and community to enhance science and mathematics education (IPOML)" project. Specifically, we illustrate how the metacognitive process can be used to develop scientific and mathematical thinking in pre-service teachers (PST) in order to enable a flow on effect to classroom students. Findings from the project suggest that a focus on engaging local/regional practicing scientists and mathematicians to articulate the thinking they engage with in their working life, and how this is similar to everyday thinking, has an impact on the confidence of pre-service teachers (PST) in the Science Inquiry Skills areas. The case studies we share about the situated learning experiences run by preservice teachers in the classrooms of our partnership schools, will highlight links with the Critical and Creative Thinking Capabilities of the Victorian Curriculum F-10. Participants in this session will be challenged to think about how aspects of this process could be beneficial for the development of Critical and Creative Thinking in their own school and university learning settings.

Symposium Participants

(will be available in printed booklet)

Program at a glance

9.30	Arrival/registration
9.50	Welcome, Acknowledgement of Country Dr Monica Green and Di Harrison
10.00	Developing Critical and Creative Thinking through the project of 'Science Beyond a classroom setting' Hongming Ma, Federation University, Gippsland
10.15	<i>Follow-on discussion</i>
10.30	The use of thinking routines in Literacy and Numeracy based Teacher Education courses based on classroom observations Peter Sellings, Federation University, Ballarat Naomi Nelson, Federation University, Ballarat
10.45	<i>Follow-on discussion</i>
11.00	Interactive observations to inform professional learning Anki Wennergren & Fredrik Thornberg, Halmstad University, Sweden
11.15	<i>Follow-on discussion</i>
11.30	Morning tea
11.50	Reasoning and global issues: presenting a critical, creative and globally-connected primary classroom Di Harrison, Federation University, Gippsland Bronwyn Joyce, Liddiard Road Primary School
12.05	<i>Follow-on discussion</i>
12.20	Open to possibilities: collaboratively cultivating generous reasoning and generative questioning in an upper primary classroom (video clip) Sue Plowright, Federation University, Gippsland Gabbi Boyd, Welshpool Primary School Sophie Callcott, Welshpool Primary School Grades 4-6 children Welshpool Primary School
12.40	Lunch
13.00	Developing Metacognition: Engaging students in scaffolded self-assessment Anna Fletcher, Federation University, Gippsland
13.15	<i>Follow-on discussion</i>
13.30	Embedding critical and creative thinking into science and mathematics initial teacher education programs and the flow on effect to schools Chris Wines, Federation University, Ballarat Bruce Schmidt, Federation University, Ballarat
13.45	<i>Follow-on discussion</i>
14.00	Flipped panel Facilitated by Associate Professor Margaret Plunkett A call to participants: How can peers and partnerships contribute to your innovative practice in schools? Invited representatives from local schools suggest future collaborations.
14.20	Message from the Dean, Professor Claire McLachlan
14.30	End of Symposium