

CONFERENCE PROCEEDINGS



TEFANZ CONFERENCE & AGM 2016

***“How Best to Educate a Nation’s Teachers?
Debating Quality Teacher Education for Today and
the Future”***

Thursday 30 June &

Friday 1 July 2016

Hosted by

University of Otago College of Education

145 Union Street East

Dunedin 9016

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NOTE:

In the following proceedings, **Presenting Authors** are highlighted in bold text.

Thursday 30 June

SELF-ORGANISED SYMPOSIUM #1

ROOM T105

The utility of cultural historical activity theory for the analysis and development of teacher education: A toolkit for transformation

Authors: Joce Nuttall, Marie Brennan, Alex Gunn, David Berg, Mary Hill, Mavis Haigh, Keryn Pratt & Jacques van der Meer

Time: 1.30pm

The utility of Cultural Historical Activity Theory (CHAT) for analysis and development of collaborative forms of human activity, such as teacher education, is recognized across disciplines and around the world. Its growing popularity can be attributed in large part to the significant contribution made by Engeström (2007) and his colleagues in mobilizing Vygotskian principles to design interventionist research. Engeström et al. have sought to make the application of CHAT to workplace activity explicit and systematic, and have designed important tools for practice development.

In this symposium, Australian and New Zealand based teacher educators explore the philosophical underpinnings of CHAT and practical considerations for using it as a tool for understanding and transformation, to foster quality teacher education.

Paper 1: Cultural artefacts as mediators of academic work: The possibilities of a materialist analysis of teacher education – Joce Nuttall (Australian Catholic University) and Marie Brennan (Victoria University, Melbourne)

The WoTE project takes a historical and dialectical materialist orientation to understanding the work of teacher education, viewing established forms of cultural activity as evidence of "...dialectical relationships between continuity and change and the reproduction and transformation of social structures and relationships, underpinned by a complex chronology of development" (Ellis, et al., 2010). This means the project pays close attention to mediation of workplace activity by cultural artefacts. We demonstrate the way in which paying attention to teacher educators' engagement with cultural tools helps us understand the unity of psychological and social processes within dominant approaches to teacher education, as well as providing clues about how tool adaptation might drive cultural change.

Paper 2: The work of teacher educators in Aotearoa NZ: An overview – Alex Gunn (University of Otago), David Berg (University of Otago), Mary Hill (University of Auckland), & Mavis Haigh (University of Auckland).

In this paper, we discuss how we used CHAT in the TLRI funded WoTE – NZ research project to consider the discursive construction and the material conditions of teacher educators work and how these impact ITE. Here, we bring together the findings from the first phase of our study, where we considered how NZ universities construct teacher education using advertisements and other documentation, with the second phase of our study where we focused on the actual work of teacher educators and how that work was understood by ITE students. We identify the key claims that we have made and their potential contribution to the theme of this conference: quality teacher education.

Paper 3: Crossing boundaries to transform: Using CHAT to re-imagine professionally-orientated post-graduate qualifications – David Berg (University of Otago), Keryn Pratt (University of Otago), & Jacques van der Meer (University of Otago).

Professionally orientated post-graduate study is one place where the activity systems of university and schools meet. Each of these systems has their own communities, rules, and outcomes of activity. We report on an in-progress study that uses third generation Activity Theory as a tool to bring about an expansive understanding of the challenges and opportunities of postgraduate study when viewed as professional learning. Colleagues from schools and university, together with other interested parties, were invited to take part in a series of workshops. These workshops were modelled on Engeström's Change Laboratory (2007) and provided a systematic framework for identifying contradictions and possibilities, and ultimately the development of a transformed qualification.

PAPER SESSION #1

SCHEDULE	TIME	ROOM
1.1 Great expectations: Exploring the value of a transition to school programme through a research and evaluation partnership	1.30pm	T101
1.2 How to incite change in literacy policy and practice: Strategies and tactics for teacher educators	2.15pm	
1.3 Te takanga o te wā, Māori history in Aotearoa New Zealand: Different histories supporting shared futures	1.30pm	T102
1.4 Exposing teacher education nationwide to a Treaty responsive curriculum in action	2.15pm	
1.5 Candidate teachers – Maths attitudes and anxiety	1.30pm	T103
1.6 Pre-service teachers' numeracy	2.15pm	
1.7 Learning to teach in innovative learning environments: Candidate teachers' perceptions	1.30pm	T104
1.8 Professional identities: Making teachers in current contexts	2.15pm	

ROOM T101

<p>1.1 Great expectations: Exploring the value of a transition to school programme through a research and evaluation partnership</p> <p><i>Authors:</i> Sue Stover, Nicky de Lautour & Leon Benade</p> <p><i>Time:</i> 1.30pm</p>
<p>Hargreaves and Fullan (2012) advised school and university stakeholders to aim “to do things that bridge the chasm [between school and university], reach for partnership, and replace polarization with interaction” (p. 153). The nature of these partnership relationships may, however lead to tension and resistance when authentic critical evaluation is called for.</p> <p>In a recent initiative between a local early childhood centre and university School of Education, the centre's transition to school programme ('The Bridge') was evaluated with a view to providing the centre with an independent review of its programme. The evaluative material, it was mutually agreed, would allow for the three-person research team to engage in reflective consideration of what the centre's next steps might be, and an opportunity to contribute to scholarship on transition to school programmes. The initial approach was initiated by the centre supervisor, a former student. The evaluation of the centre's transition to school programme arose in response to unexpected criticism from the Education Review Office.</p> <p>Following a phenomenological ethnographic design, a series of 'snapshots' were recorded: observations and video recordings of 'The Bridge' programme in action, interviews of key stakeholders, and focus groups including with 'The Bridge' children. These have provided an insight into a stable community of learners in a relatively wealthy neighbourhood where 'The Bridge' programme, with minor variations, has run for over a decade.</p> <p>Initial research results show a close knit community-based early childhood centre in a high decile neighbourhood with long held traditions and curriculum foci. Interviews with parents indicate that through 'The Bridge' programme, the centre meets their needs for seeing their young children as moving confidently from ECE into the uncertainty of the primary school classroom. The assumption that the programme helps children to adapt successfully to school remains to be fully evaluated, as this is currently an on-going longitudinal study. The value and significance of 'academic' transition programmes remains for us also an open question.</p> <p>This presentation considers the nuances of what it means to engage in a research partnership amidst complex issues such as the evolving place of innovation and diversity in education, the pressures of national standards and review processes, and the place of national and international research at odds with local community demands.</p> <p>In addition, in-depth reconsideration of a popular programme can be problematic for early childhood services that operate in a commercial marketplace where they compete for 'customers', yet simultaneously are required to implement government policy and a curriculum which may not be fully compatible with what 'the community' demands.</p> <p>Hargreaves, A., & Fullan, M. (2012). <i>Professional capital: Transforming teaching in every school</i>. New York, NY: Teachers College Press.</p>

1.2 How to incite change in literacy policy and practice: Strategies and tactics for teacher educators

Authors: Susan Sandretto & Jane Tilson

Time: 2.15pm

For over ten years now, our university teaching and research has been focussed on extending traditional literacy practices to embrace a wider variety of text types and enhance the critical analysis of texts. In other words, we have been working to extend what counts as literacy across the primary and secondary sectors. During this time we have engaged in wide range of activities. We have conducted research projects with 40 teachers across 14 schools in our area (including primary, intermediate and secondary). The first author has provided professional learning in the form of over 30 research-based presentations, workshops and keynote addresses to literacy conferences, schools and librarians all over the country, as well as delivered a free, 10 week long MOOC (Massive Open Online Course). In addition, we have revised our preservice teacher education programme curricula to forefront the frameworks that would enable teachers to plan future focussed literacy programmes, and created video-based teaching resources focussed on the work of experienced teachers implementing these frameworks in their classrooms. *What else can we do as teacher educators and researchers to incite change?*

We have turned to the work of Michel de Certeau to inform our ongoing work to support preservice and inservice teachers to initiate change in schools with regard to literacy. De Certeau focussed his theorising on the dialectic between the strategies of producers and tactics of consumers. Producers, those in power such as institutions, deploy strategies to create spaces (a proper), which structures what is possible in that space. Tactics are used by the less powerful to momentarily co-opt the space, much like guerrilla warfare. It is important to remember, however, that strategies and tactics do not form an opposite pair. As teacher educators and educational researchers we implement *both* strategies and tactics. For instance, we act strategically when we set course outlines and assignments privileging what we view as important for literacy teaching. These acts in turn structure the spaces of the teacher education classrooms where we shape what is (not) possible for our students to do. But we can also view these acts as tactical responses to literacy policy we view as out-dated. By asking the preservice teachers to develop planning and teaching for future focussed literacies in our courses, we are exposing the cracks and fissures of literacy policy; which has the potential to open up the constraining space created by the ministry.

In our view, one of the primary functions of a teacher educator is to not only develop new knowledge and contribute to the ongoing development of teachers, but also to spark change at the local and national level. In this paper we (re)read our research and teaching activities through the lens of De Certeau to critically reflect on our strategies *and* tactics thus far. In proposing future strategies and tactics, we believe that this paper will act as a catalyst to encourage critical dialogue among teacher educators interested in inciting change.

ROOM T102

1.3 Te takanga o te wā, Māori history in Aotearoa New Zealand: Different histories supporting shared futures

Authors: Kelli Te Maihāroa & Piripi Prendergast

Time: 1.30pm

Te Takanga o Te Wā, Māori History in Aotearoa New Zealand Teaching Guidelines for Years 1-4 (Ministry of Education, 2014) is a recently new curriculum document, which invites teachers and schools to develop, foster and maintain collaborative partnerships with learners, whānau, hapū and iwi. This paper adopts the position that professional development opportunities provide one way of advancing our own understanding of 'who we are' as a bicultural Pacific Nation. These guidelines can be utilized as signposts, leading towards an awareness and interest in local history, which can contribute towards a sense of belonging, connections with their own and others' whakapapa genealogies, mātauraka knowledge, mana whenua people of the land, and Pacific and colonial migrations stories.

The focus of this paper briefly identifies the four components of Māori covered within Te Takanga o Te Wā (2014:4): Whakapapa (connections to the past, present and future), Mana Whenua and Pepeha (connection to the local area), Mātauranga (connection to knowledge, views and opinions), Te Hekenga Nui (connections to history through migration stories). The idea for this research stemmed from a 2015 teacher educator workshop, where one participant stated that 'there didn't seem to be many stories from the South Island'. This in turn sparked the opportunity to develop a resource to support this Māori history curriculum document, to be used for subsequent professional development sessions throughout Aotearoa, making history relevant and meaningful to teachers and learners.

The professional development resource encompassed two components: a filmed panel discussion based on the curriculum document and engaging with whānau Māori and key messages gained by interviewing Aunty Anne Pate Sissie Te Maihāroa-Dodds on her tipuna Te Maihāroa and her experiences of engaging and supporting North Otago teachers. These complementary resources have been utilized by the Mau ki te Ako professional development programme throughout Aotearoa in 2015.

The primary focus of this paper is to highlight the inclusive approach undertaken between Mau ki te Ako, an iwi led professional development partnership and the Te Maihāroa whānau, as kaitiaki *guardians* of their whānau histories as a potential model of practice. Through discussion about the 'engagement process' of working collaboratively, we aim to share our own understandings, new learning, and how we made sense of our developing, shared and authentic relationship.

1.4 Exposing teacher education nationwide to a Treaty responsive curriculum in action

Author: Tamsin Hanly

Time: 2.15pm

This presentation will describe a Professional Development package that has been written and designed by the author for centres, schools and BOTs that all training educators should and could know about via their teacher education.

This presentation is suggesting that across all sectors and pathways as part of appropriate compulsory courses that one lecture is devoted to expose all training educators to a successful Culturally Responsive Curriculum in action. **One that they will be able to access once they are out in their educational centres.**

The Curriculum Programme Resource (CPR) for all educators is called *A critical guide to Māori and Pākehā histories*.

The CPR is an innovation to assist all educators who are still struggling to effectively meet current goals of the New Zealand Curriculum, Treaty Principle, Ka Hikitia, Tātaiako, Graduating Teachers, Practicing Teachers, Māori Histories Curriculum, Hautū and equitable achievement for Māori in more practical ways.

This CPR has deliberately been written in response to the author's earlier and other research findings that many teachers have outdated knowledge about Māori and Pākehā histories, the Treaty of Waitangi and Māori knowledge.

Consequently, the CPR is based in critical multicultural history and social science pedagogies. The historical narrative is based on authoritative historical texts. Which includes two worldviews and knowledge bases, a tangata whenua view, and a Pākehā settler group view. It draws on all Treaty texts, a local and global context, histories of colonisation and an honouring Te Tiriti o Waitangi discourse.

The CPR overview covers six topics in the form of 6 Unit Booklets for staff Professional Reading Development. After reading staff select from the CPR to create their own plans and assessments to deliver. Optional junior and senior activity possibilities and cross curriculum term overviews are included.

The 6 Unit booklets cover the following historic periods. Te Ao Māori o Neherā, British Isles, Two Worlds Meet, Te Tiriti o Waitangi, Pākehā Responses, Māori Responses.

Both Mainstream and Māori pathways can successfully use the CPR. Educational centres can choose from a range of timeframes for reading & teaching. This CPR can assist beginning to experienced teachers of all ethnicities to teach these histories more effectively to students of all ethnicities. Boards of Trustees (BOTs) can also use the CPR Unit booklets to read & update their historical knowledge to more inform BOT decisions.

The CPR has been written by a Pākehā senior primary school teacher who has twenty five years' experience in both Mainstream and Māori medium contexts teaching this content.

This CPR content is currently only being taught in some non-compulsory courses of Te Puna Wananga of the Education Department at Auckland University. Nationwide, current teacher education programmes and lecturers are not, to date, exposing their trainees to examples of successful Culturally Responsive Curriculum in action. Lecturers, courses and therefore consequently students are still not meeting their legal requirements in this regard. Nationwide lectures in appropriate courses about the CPR, showing why educators need it and how it works would be one example of teacher education meeting these related requirements today and in the future.

ROOM T103

1.5 Candidate teachers – Maths attitudes and anxiety

Author: Julie Whyte

Time: 1.30pm

This presentation aims to share information relating to the attitudes and anxiety that candidate teachers (students) hold towards mathematics. The links between the attitudes and anxiety held and previous experiences with mathematics will be shared. It is based on research involving first year candidate teachers as they begin their Bachelor of Teaching (Primary) programme, at the Eastern Institute of Technology in Hawke's Bay.

Data was gathered through: maths metaphor activities, the single-item maths anxiety scale, and a question that prompted candidate teachers to identify any specific experience(s) that may have contributed to the attitudes, and the levels of anxiety, held. This data was gathered near the beginning of the first semester of the three year programme.

These activities and questions were used to assess the affective domain of students as an alert to those in the class who were more likely to find mathematical learning difficult because of their own relationship with mathematics. This raised issues regarding the relationships with mathematics that candidate teachers have, based on previous experiences, and how these are brought to teacher education programmes, and possibly into the teaching of mathematics in future primary classrooms.

International research indicates that mathematics attitudes and anxiety can be passed from teacher to student in a cyclical manner. With the objectivity of breaking that cycle, the first step must be for teacher educators and candidate teachers to explore the attitudes and anxieties that individuals hold regarding mathematics. Working towards overcoming these to become effective teachers of mathematics would be the next.

Discussion will be invited regarding how any negative affective outlook held by candidate teachers towards mathematics might be addressed by others involved in teacher education.

1.6 Pre-service teachers' numeracy

Authors: Chris Linsell, Naomi Ingram, Megan Anakin & Andrea Knowles

Time: 2.15pm

To be numerate is to have the knowledge, skills and confidence to use mathematics and statistics in a variety of different contexts. Pre-service teachers need to be numerate and, more specifically, they need to have the content knowledge appropriate for the programmes in which they will teach in order to meet the Graduating Teacher Standards. However the nature of this knowledge is not clearly defined and it is a challenge for initial teacher education providers to assess it. To address these challenges we are conducting a longitudinal study of pre-service teachers' relationships with mathematics during the time of they are studying at the University of Otago. Although all first-year pre-service teachers satisfied the University Entrance requirements for numeracy, when we assessed them using the TEC Literacy and Numeracy for Adults Assessment Tool we found that many of them demonstrated low levels of numeracy at the start of their teacher education programme. Most pre-service teachers reported that the results from the assessment accurately reflected their mathematics knowledge and gave them useful feedback about specific content knowledge (Linsell & Ingram, 2014). The concept of foundation content knowledge (Linsell & Anakin, 2013) was used to interpret these results from a growth-oriented perspective that encompassed cognitive and affective aspects of pre-service teachers' relationships with mathematics. As a consequence of our growth-oriented approach, we offered support to all of our pre-service teachers through peer-tutoring, face-to-face teaching, incorporation of content knowledge into pedagogy papers, and online services. At the beginning of their programme in 2013, 41% of the cohort of pre-service teachers did not meet our numeracy requirements and took part in a support programme. By the end of their first year, 95% of the cohort had met the numeracy requirements but only 38% felt confident to teach mathematics when they graduated (Ingram & Linsell, 2014). We will discuss the possible implications of our work for identifying, monitoring, and addressing pre-service teachers' numeracy needs by all initial teacher education providers in New Zealand.

Ingram, N., & Linsell, C. (2014). Foundation Content Knowledge: Pre-service Teachers' Attainment and Affect. In J. Anderson, M. Cavanagh & A. Prescott (Eds.), *Curriculum in focus: Research guided practice, Proceedings of the 36th annual conference of the Mathematics Education Research Group of Australasia* (pp. 718–721). Sydney, Australia: MERGA.

Linsell, C., & Anakin, M. (2013). Foundation Content Knowledge: What Do Pre-Service Teachers Need To Know? In V. Steinle, L. Ball & C. Bordini (Eds.), *Mathematics Education: Yesterday, Today & Tomorrow, Proceedings of the 36th annual conference of the Mathematics Education Research Group of Australasia* (pp. 442-449). Melbourne: MERGA.

Linsell, C., & Ingram, N. (2014). Foundation Content Knowledge: Providing support for pre-service teachers. In J. Anderson, M. Cavanagh & A. Prescott (Eds.), *Curriculum in focus: Research guided practice, Proceedings of the 36th annual conference of the Mathematics Education Research Group of Australasia* (pp. 714-717). Sydney, Australia: MERGA.

ROOM T104

1.7 Learning to teach in innovative learning environments: Candidate teachers' perceptions

Authors: **Emily Nelson & Leigh Johnson**

Time: 1.30pm

This research in progress examines pre-service teachers' perceptions of learning to teach whilst placed in modern or innovative learning environments during practicum. A shift to Modern and Innovative Learning Environments (ILEs) in New Zealand schools is a current Ministry of Education strategic direction (Ministry of Education, 2014). This policy shift impacts how we prepare preservice teachers to teach in these emerging environments that are characterised by combinations of: collaborative teaching, open plan learning spaces, ubiquitous integration of technology, increased student collaboration and inquiry learning pedagogies (OECD, 2015; Osborne, 2013). The study adopts a socio-spatial view of ILEs as instantiations of 'built pedagogy' that generate 'embodied material conditions' (Monahan, 2008) and particular pedagogical challenges for preservice teachers and teacher educators. Candidate Teachers (CTs) (preservice teachers) in our Bachelor of Teaching (Primary) programme are increasingly placed in ILEs on practicum as schools re-configure their teaching and learning spaces and pedagogies to reflect within the emerging policy framework. CTs report anecdotally that teaching in ILEs pose them steep and novel challenges around how they plan, teach, assess, manage and work with colleagues. This study aims to examine how CTs perceive the particular demands of ILEs and how they approach developing competence and confidence in these contexts. We anticipate that findings from the study will inform the development of preservice teacher education practice that better responds to the changing face of teaching and learning in New Zealand primary classrooms and the particular needs and opportunities that face CTs on practicum in ILEs.

Our study explored 'What aspects of practice do Candidate Teachers perceive they need to generate and master to teach with competence and confidence in innovative learning environments on practicum? And 'how do Candidate Teachers go about generating the competence necessary for teaching in ILEs?' We conducted a survey with current third year CTs and recent graduates of our programme who had completed one or more practicum in an identified modern or innovative learning environment (identified by the practicum school). We utilised OECD principles of ILEs (OECD, 2015) to frame survey questions that invited participants to contribute their experiences on practicum around the broad topics of planning, pedagogy, integrating technology, managing student learning and collaborating with colleagues. We anticipate that findings from the study will inform an understanding of the dynamics involved in Candidate Teachers learning to teach in ILEs on practicum as well as how preservice teacher education programmes might adapt and respond to the challenges and opportunities ILEs as emerging built pedagogies pose.

1.8 Professional identities: Making teachers in current contexts

Author: **Claudia Rozas**

Time: 2.15pm

What it means to be a teacher is always shaped by broader imperatives in education and education policy. Presently teacher identity is inscribed by discourses that emphasise practice. In keeping with present preoccupations the teacher is cast in a performative role. The privileging of practice has profound implications, not just for pre-service teacher education, but for how pre-service teachers come to see themselves as professionals. This session will present the beginnings of a study that examines how pre-service teachers construct their professional identities. It will explore the shift from professional knowledge to professional competencies and critically consider how the wider policy landscape currently defines the good teacher. The presentation will conclude by considering the extent to which new and prevailing identities are consistent with educational commitments related to democracy and justice.

POSTER SESSION

ROOM T105

The progressive puzzle

Presenter: Sue Stover

Time: 3.30pm

While Initial Teacher Education is clearly in flux in 2016, looking historically it is clear that change is a norm. One of the major forces for change in mid-20th century teacher education was Progressive Education, especially in the form of the international organisation, the New Education Fellowship. Drawing on oral histories in New Zealand and archival work in London, this study is a work in progress and considers how Progressive Education ideas percolated into teacher education in New Zealand. Particularly it identifies the significance of Susan Isaacs in influencing educational policy in New Zealand, but also in advancing experiential pedagogies in early childhood teacher education. Two specific developments are considered in detail: (1) the original 'play centre' - an innovative aspect of teacher education which was established in England during the Depression of the 1930s, and a version of which spread to New Zealand following the visit by Susan Isaacs in 1937; (2) Progressive approaches to kindergarten teacher education, as remembered by the late Dr Marie Bell and other past lecturers.

PAPER SESSION #2

SCHEDULE	TIME	ROOM
2.1 Between a hard place and a hard place: Comparing ethical dilemmas in teaching	3.30pm	T101
2.2 Enabling professional noticing of wānanga and ako within teacher education modelling of practice	4.15pm	
2.3 Embedding mathematical thinking in on initial teacher education programme	3.30pm	T102
2.4 Learning ambitious mathematics teaching through a problem-solving experience	4.15pm	
2.5 Influential and intentional teacher education: Embodying a conceptual framework	3.30pm	T103
2.6 Three pillars of the Master of Teaching and Learning programme: Reflexive thinking, adaptive expertise and realistic teacher education to challenge postgraduate student teachers to think, know, feel and act like a teacher	4.15pm	

ROOM T101

2.1 Between a hard place and a hard place: Comparing ethical dilemmas in teaching

Author: Paul Heyward

Time: 3.30pm

Assisting student teachers to understand the ethical nature of their work and developing the moral vocabulary to deal with ethical dilemmas of practice is a vital component of initial teacher education. The current study explores how ethical dilemmas experienced by student teachers on practicum placement could be categorised within an existing taxonomy of ethical dilemmas. Drawing on 100 written reflections of challenging ethical decisions experienced on practicum, student teachers' ethical dilemmas were categorised within the taxonomy of ethical dilemmas developed by Orly Shapira-Lishchinsky (2011). It was found that while some categories of this taxonomy were useful in accommodating student teacher dilemmas it was not adequate for the majority of ethically challenging situations experienced on practicum. The current study found that while some types of ethical dilemmas seem universal to all teachers a more situated theory of teacher ethics is required to understand the particular socio-cultural factors that inform the nature of teacher practice in context specific environments. This study will be particularly useful for educators working with student teachers in the practicum environment as insights into the unique nature of the ethical dilemmas they experience are revealed.

2.2 Enabling professional noticing of wānanga and ako within teacher education modelling of practice

Authors: Robin Averill, Dayle Anderson & Michael Drake

Time: 4.15pm

Many important teaching strategies are complex and hard to learn. The skills needed to lead mathematical discussions and culturally responsive teaching practices are known to be particularly challenging to develop. Evidence shows that professional noticing of practice is essential for student teacher development and that student teachers need to be assisted to notice the intricacies of expert teaching. Pedagogies of teacher education practice such as representations (e.g., teacher educator modelling) and decomposition of practice (discussion focused on specific aspects of complex practice) are elements of quality teacher education as they can assist student teachers' adoption of challenging practices. In addition, in-the-moment coaching of 'rehearsals' of practice can help expose and foster the use of effective teaching strategies, but there has been little investigation into how such coaching can assist the development of culturally responsive mathematics teaching practice. Drawn from a larger study into using rehearsals of practice to develop student teachers' abilities to orchestrate mathematical discussion, this presentation will share how teacher educator modelling of instructional activities with in-the-moment 'coaching' provided opportunities for professional noticing of culturally responsive teaching practices. Such opportunities were identified across seven videos of modelled rehearsals of practice in primary and secondary initial teacher education mathematics courses in which teacher educator pairs modelled and 'coached' mathematics teaching. 'Pauses' within the modelling were used to prompt student teachers to notice, analyse, and discuss effective practices. In the presentation we briefly background the importance of developing student teachers' capabilities in teaching mathematics in culturally responsive ways and outline challenges to doing so. We outline the usefulness of professional noticing, rehearsals of practice, and teacher educator modelling for developing teaching and fostering theory-practice links. We describe our use of modelling as an approximation of practice, how we implemented 'coaching', and our study. We deconstruct examples from the rehearsals in which deliberate acts of teaching, consistent with culturally responsive practices, were or could have been exposed and discussed. Examples will illustrate how professional noticing was facilitated and identify aspects consistent with two valuable 'cultural competencies' for teachers of indigenous Māori learners, wānanga and ako. Implications of this study, including how the findings can contribute to enhancing equity of access to mathematics learning through student teachers being able to notice, discuss, and take part in culturally responsive teaching practices will be presented. Further work is required to help understand more deeply how student teachers' practice in relation to wānanga and ako, specifically in relation to how these may be experienced by Māori learners, can be strengthened.

ROOM T102

2.3 Embedding mathematical thinking in on initial teacher education programme

Authors: Beverley Cooper & Bronwen Cowie

Time: 3.30pm

This paper reports on one aspect of the *Mathematical Reasoning and Thinking in Initial Teacher Education (MARKITE)* 3 year TLRI project, that aims to support the development of student teacher mathematical thinking programme wide. The paper describes the views of mathematical thinking held by the lecturers of the 9 courses in a one-year graduate programme for primary student teachers. Lecturers prior to the start of each course were asked to highlight where opportunities for mathematical thinking presented. They were re-interviewed at completion of their course to describe what had eventuated. At the start of year two they completed templates to describe the mathematical thinking in their course. Interviews and mapping templates contributed to a programme map. Two years on lecturers were interviewed to establish the effect of the project on their thinking and to establish any changes in their courses. Interviews from lecturers were transcribed and deductively analyzed in relation to the three aspects and dimensions of mathematical thinking that are the focus of the MARKITE study. An inductive analysis was then undertaken to ensure that no ideas were overlooked.

Key findings indicate that there were many opportunities to embed mathematical thinking across the programme. Lecturers initially were unsure that they could add value to mathematical thinking and many expressed the view that they were not confident with mathematical ideas. However through the interviews and focus groups they began to identify opportunities to highlight and embed mathematical ideas. Two years on lecturers have described examples of their courses that involve mathematical ideas, describe how they have been deliberate with highlighting mathematical ideas, and talk about the impact on their own confidence, practice and research agenda related to mathematical thinking.

2.4 Learning ambitious mathematics teaching through a problem-solving experience

Authors: Judy Bailey & Marilyn Taylor

Time: 4.15pm

Different models of pre-service teacher education have been used to support novice teachers' preparation for the classroom. A practice-based model is centred on core practices of ambitious teaching. Such teaching in mathematics refers to supporting all learners to develop conceptual understanding, procedural fluency, strategic competence and adaptive reasoning to solve authentic problems (Lampert, Beasley, Ghouseini, Kazemi & Franke, 2010). This study occurred within the context of a 14-week mathematics education course taken as part of a one-year primary graduate diploma programme at a New Zealand university. The research focused on novice teachers' learning about core teaching practices through their participation in problem-solving activities to explore the learning and teaching of mathematics. Their initial role was being a mathematical problem-solver, and later they considered and critiqued the approach for future teaching. Data is drawn from nine novice teachers who participated in two focus groups and the teacher educator's planning. Findings indicate *experiencing* a problem-solving approach is valuable as novice teachers learn about practices congruent with an ambitious teaching agenda such as justifying mathematical reasoning and catering for diversity. Results suggest that novice teachers began to envisage how ambitious mathematics pedagogies might be integrated in their future practice.

Lampert, M., Beasley, H., Ghouseini, H., Kazemi, E., & Franke, M. (2010). Using designed instructional activities to enable novices to manage ambitious mathematics teaching. In M. K. Stein & L. Kucak (Eds.), *Instructional Explanations in the Disciplines* (pp. 129-141). New York: Springer.

ROOM T103

2.5 Influential and intentional teacher education: Embodying a conceptual framework

Authors: Cathryn Bell & Karyn Robertson

Time: 3.30pm

This paper emerges from the critical thinking and evaluation which informed our recent programme review as we debated the question which is the theme for this conference – How do we educate people for quality teaching for the future? It draws on team members' doctoral, masters and ongoing research, stakeholder feedback and graduate voice in terms of which aspects of their initial teacher education are influential in their beginning teacher practice.

We identify four key characteristics of influential initial teacher education and identify the implications of each of these for the development of teachers who can be effective now and also into the future.

Firstly, the research indicates that effective quality initial teacher education will be intentionally shaped by a research-based Conceptual Framework which is owned and 'lived' by teacher educators and within the process of their ITE, becomes embraced by their student teachers.

Secondly, quality teacher education is founded on a research knowledge base about how student teachers learn to *be* and *become* a teacher who will continue to learn and develop. A holistic developmental approach pays deliberate attention to student teachers developing as learners, motivated by a realistic image of who they are as a teacher and aware of how this informs their teaching practice. Critical to this developmental approach is the disruption of a technicist view of learning and teaching (Chang-Kredl & Kingsley, 2014) and the formation of an alternative image such that teaching is understood to be an autobiographical endeavour and therefore 'who I am in my teaching' (Groundwater-Smith, Ewing & LeCornu, 2015; Kelchtermans, 2015; Palmer, 1998) really matters. It is here that the pre-requisite dispositions needed for an inquiry stance and the commitment to identifying alternative strategies to meet the needs of a wide range of learners and contexts will be found (Costa & Kallick, 2014; Fyson, 2014).

The third characteristic is shared by *Te Whāriki* and the *New Zealand Curriculum* documents. They both commence with a clear aspirational statement for the child or citizen to become a valuable contributor to society. Key to quality initial teacher education is the understanding of the person who is ideal for teaching both now and into the future. In New Zealand this means someone who aspires to be part of and is committed to the vision and outworking of the *NZ Curriculum* and *Te Whāriki*. Through reflective practice, such teachers will know how to nurture and sustain a sense of call, the accompanying responsibility and a commitment to the vocation of teaching for the long haul (Agbenyega, 2012).

Finally, and perhaps most importantly, teacher educators who contribute to the development of wise teachers for quality learning now and into the future do not just talk about this as an ideal (Bell, 2010). They nurture the student teacher's development through a progression where effective pedagogy is modelled, scaffolded and reflected on, supported and then required. This 'spiral of learning' is where theory, practice, inquiry and reflection work together to shape informed and improved future professional practice.

2.6 Three pillars of the Master of Teaching and Learning programme: Reflexive thinking, adaptive expertise and realistic teacher education to challenge postgraduate student teachers to think, know, feel and act like a teacher

Authors: **Steven Sexton** & Sandra Williamson-Leadley

Time: 4.15pm

Initial teacher education (ITE) in New Zealand is at a crossroad. For the past two decades, those seeking to gain ITE qualifications completed either an undergraduate degree programme or a one-year graduate diploma. In 2013, the Ministry of Education invited tertiary providers to develop one-year, course-taught, master's level ITE programmes for Primary (students aged 5-12) and/or Secondary (students aged 13-19) education. Three tertiary providers were awarded contracts to pilot their programmes in 2014 (Parata, 2014). It is anticipated that these new ITE programmes signal New Zealand's intention to follow the Scandinavian countries' Nordic model of education (Antikainen, 2006).

In a study that identified interventions in how the world's most improved school systems keep getting better Mourshed, Chijioke and Barber (2010) highlighted five ways 'great' schools are shifting to 'excellent' to raise the calibre of entering teachers. First, the learning community facilitated school-based learning communities to create peer-led support and accountability. Second, the school system provided effective educators with greater pedagogical autonomy. Third, school systems rotated educators throughout the system in order to spread the learning and mentorship. Fourth, the system provided administrative staff to support teachers and finally, the school system actively worked to develop and share innovations. Mourshed, Chijioke and Barber directly referenced John Hattie's (2009) *Visible Learning* about the significance of teachers becoming learners of their own teaching. However, Mourshed, Chijioke and Barber only quoted the teacher part of the statement and did not include the students. Hattie (2009) noted what makes the difference, "is visible teaching and learning by teachers and students" (p. 22). Explicitly attempting to address limitations identified in ITE programmes (Feiman-Nemser, 2008) and incorporating what works in school systems (Hattie, 2009; Mourshed, Chijioke, & Barber, 2010) this study's Master of Teaching and Learning (MTchgLn) programme was designed to support and facilitate student teachers' learning from their classroom experience.

This study reports on how a new one-year, course-taught master's degree level Initial Teacher Education (ITE) initiative in New Zealand challenged student teachers (n = 26) developing sense of self-as-teacher. A mixed-methods approach examined how the programme's three pillars of reflexivity, adaptive expertise and realistic teacher education influenced these student teachers' sense of self-efficacy and concerns about teaching. The study included four survey instruments Teachers' Sense of Efficacy Scales (Long Form), Concerns About Teaching and the ITE programme Entrance and Exit surveys from the Teacher Education Forum of Aotearoa New Zealand (TEFANZ). Student teachers' survey responses and student teacher initiated topics of concern were explored in weekly focus group sessions. Results indicated how the programme's design provided the experiences necessary for these student teachers beginning to learn how to think, know, feel and act like a teacher.

Friday 1 July 2016

SELF-ORGANISED SYMPOSIUM #2

ROOM T105

Pre-service teachers learning to make a difference

Authors: Fiona Ell, L. Grudnoff, Mary F. Hill, Mavis Haigh, M. Cochrane-Smith, W-C Chang & L. Ludlow

Time: 9.00am

There is a high level of agreement among researchers and practitioners in many countries that initial teacher education programmes need to change substantially if they are to succeed at preparing teachers who can work effectively with all students, particularly those who have been traditionally disadvantaged by the education system. Sonia Nieto (2000) once argued that “placing equity front and center” (p. 180) in teacher education would take a radical transformation of goals, commitments, and arrangements. How can teacher education prepare teachers to make a difference for learners?

The Masters of Teaching (Primary) pilot project at the University of Auckland provides a site for investigating how pre-service teachers learn to teach in ways that make a difference for priority learners (Maori, Pasifika, special needs, low SES and EAL learners). This qualification is part of a national effort to prepare teachers in new ways to try and improve outcomes for these learner groups in particular. In this symposium we present three papers that use a range of data sources to investigate the learning of 25 pre-service teachers in our yearlong post-graduate teacher preparation programme. Each paper focuses on a different aspect of pre-service teacher learning, but all use a framework of facets of practice for equity (Grudnoff, et al., 2015). This framework was derived from the literature to help articulate what ‘practice that makes a difference’ might comprise. The facets of practice for equity framework is built within a complex view of teaching and learning that acknowledges the multiple contingencies present in social settings and looks for the emergence of new thinking and behaviour from the activity of complex social systems.

The three papers draw on questionnaires completed before and after the programme, assignment work from across the programmes, reflections on practicum experiences and focus group interviews with the pre-service teachers. The data set can be considered chronologically, allowing us to consider how the pre-service teachers’ ideas change over time. The methods are essentially qualitative, and feature deductive thematic analysis (Braun and Clarke, 2006).

Paper 1: Student teacher perceptions of how their teacher education programme prepared them to work effectively in low-decile schools

Focused on post-practicum reflections and teacher inquiry milestone research reports, this paper reports on six themes relating to preparedness for teaching in low-decile schools.

Paper 2: Learning how to use evidence to scaffold learning and improve teaching

Using responses to an electronic questionnaire and three open-ended assessment questions completed by the pre-service teachers at entry and exit from the programme, three assignments completed at different times across the year-long programme and a focus group interview with a group of MTchg students, this paper builds a picture of the pre-service teachers’ emerging understandings about assessment for learning.

Paper 3: Teacher candidates’ emerging understandings about how teaching mathematics and literacy impacts equity

This paper draws on three key assignments in mathematics and literacy, practicum reflections and inquiry projects to explore the emergence of ideas about how teaching in literacy and mathematics can contribute to more equitable outcomes for priority learners.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in Psychology*, 3(2), 77-101.

Grudnoff, L., Hill, M.F., Haigh, M., Cochran-Smith, M., Ell, F. & Ludlow, L. (2015). *Teaching for equity: Insights from international evidence*. Paper presented at the American Education Research Association Annual Meeting, Chicago, 19 April.

Nieto, S. (2000). Placing Equity Front and Center: Some Thoughts on Transforming Teacher Education for a New Century. *Journal of Teacher Education*. 51(3): 180-187.

PAPER SESSION #3

SCHEDULE	TIME	ROOM
3.1 Moving towards school-based teacher education?	9.00am	T101
3.2 Collaborative university school practicum partnership	9.45am	
3.3 Educating the nation's teachers for the future: Engaging the teacher education ICT appropriation model (TEAM)	9.00am	T102
3.4 A complex act – teacher educators share their stories of practicum assessment	9.45am	
3.5 So the three of us will teach seventy students at the same time in the same space? Planning for a new undergraduate paper in a flexible learning environment	9.00am	T103
3.6 Investigating the provision of professional learning and development for middle level teachers	9.45am	
3.7 The I/we condition: A report on the study of early childhood curriculum	9.00am	T104
3.8 Comparing first-year pre-service teachers student mathematics grades with their entry level qualifications – What does it tell us?	9.45am	

ROOM T101

<p>3.1 Collaborative university school practicum partnership <i>Authors:</i> Beverly Cooper, Bronwen Cowie & Jane Furness <i>Time:</i> 9.00am</p>
<p>The Collaborative University School Practicum Partnerships -CUSP project year longitudinal developmental evaluation investigated how an innovative approach to the first year of a primary Bachelor of Teaching degree to reconceptualise a university school partnership has impacted on student teachers' learning and preparedness. Teacher educators, teachers and student teachers are often viewed as belonging to different communities. This research has intentionally brought the university and school communities together to establish shared goals and processes to support student teacher learning.</p> <p>The research has been collaborative and developmental in nature and it followed and informed the project over the four years. That is, the school and Faculty staff and the researchers collaborated in the developmental research process with the researchers taking the main responsibility for summarising data to feedback into discussions by and with Faculty and school staff. In this way both groups 'added their own experience to exploring the question as well as seeking to listen to and understand the experiences of others' (Bray, Lee, Smith & Yorks (2000), p.12).</p> <p>The implementation of this vision is a complex and long-term process to create expanded learning opportunities for prospective teachers that will better prepare them to be successful in enacting complex teaching practices. The student teachers, lecturers, teachers, school leaders and beginning teachers have been interviewed, participated in focus groups and programme meetings and surveyed about their learning in the project over two three year cycles. This paper gives an overview of the project and key findings related to the enablers and barriers of developing partnerships and implementing the shared vision.</p>
<p>3.2 <i>Withdrawn</i></p>

3.3 Educating the nation's teachers for the future: Engaging the teacher education ICT appropriation model (TEAM)*Author:* **Rosina Merry***Time:* 9.00am

Information communication technology (ICT) is a widely accepted part of society, which has implications for teachers of children of all ages and for initial teacher education providers (ITE). My doctoral study employed a qualitative interpretative case study approach to explore the experiences and expectations of one hundred and forty five early childhood student teachers use of ICT in their ITE programme and developing teaching practice. In addition 31 practising teachers' use of ICT were examined and their views captured on how ICT supported their teaching. This focus arose from a concern from an ITE provider needing to understand participants' perspectives of ICT in order to inform ITE programmes more effectively. This includes how to more effectively foster the purposeful appropriation and integration of ICT by student teachers so that they graduate confident in their use of ICT for teaching.

There are growing expectations that students will learn to live and work in an information rich society as independent lifelong learners with the ability to use technology in a range of ways. Despite this, the adoption and implementation of ICT by ITE providers and teachers has been relatively slow. Hence, there is pressure on ITE providers to prepare student teachers with the theoretical understandings and practical capabilities needed for them to use ICT in learning and teaching. The preparation of student teachers to use technology in their teaching practice has been recognised as a challenge in many countries. Although many ITE providers are aware that ICT has the potential to transform education, it takes more than technology tools and infrastructure to bring about the changes required to make this possible.

Recent reporting to The Ministry of Education highlighted that a range of aspects still needed to be taken into account in relation to ICT use in and for education. These included teachers being able to understand the affordances of ICT tools along with their ability to support innovative curriculum that respond to 21st century learning and learners.

One key outcome of my doctoral study and the focus of this presentation, is the development of the Teacher Education Appropriation Model (TEAM), to help ITE providers understand how student teachers and teachers appropriate and integrate ICT into their pedagogical practice. The TEAM model is based on the themes that emerged from the data generated in this doctoral study and takes into account the sociocultural nature of teaching and learning. With its potential to support the appropriation of ICT, I believe this model can make a valuable contribution to leaders of ITE programmes. I anticipate TEAM can provide conceptual input into the design of pre-service ITE for the appropriation of ICT for pedagogical purposes. The presentation will highlight the elements of the TEAM model and describe its potential to influence ITE programme design, and possible understanding around student teachers appropriation and use ICT for pedagogical purposes.

3.4 A complex act – teacher educators share their stories of practicum assessment*Author:* **Karyn Aspden***Time:* 9.45am

Practicum is typically reported by student teachers to be the most influential component of their initial teacher education programme. Likewise, practicum visiting and the assessment of practicum form a significant component of the teacher educator role. The assessment of practicum is a high stakes event, with significant implications for the student's further study, professional learning and development, and entry to teaching. Teacher educators are responsible for making determinations regarding the quality of student's teaching practice, as well as attributes, skills and knowledge, and ultimately their readiness to enter the teaching profession. This presentation will share the findings of my completed doctoral study, focused on the assessment of practicum in early childhood initial teacher education. Conducted during 2011-2014 with four New Zealand initial teacher education institutions, the study explored the way in which practicum assessment is enacted and experienced by early childhood student teachers, associate teachers and teacher educators, within institutional contexts. The findings of the study reveal the complexity of the assessment process and the challenges faced in making authentic, appropriate and informed assessment decisions. The multi-phase study affirmed the critical role of the teacher educator in the assessment of practicum, providing insight into what teacher educators look for and hope for in the assessment process. Drawing on the voices of the teacher educators who participated in the online survey and case studies, this presentation will share stories of both positive practicum assessment experiences and those that were challenging. The importance of understanding the complex variables involved in reaching assessment decisions is considered and the notion of practicum assessment as both highly individualised and highly institutionalised will be explored. Suggestions for future directions in policy and practice related to practicum assessment will be proposed.

3.5 So the three of us will teach seventy students at the same time in the same space? Planning for a new undergraduate paper in a flexible learning environment

Authors: Leon Benade & Lyn Lewis

Time: 9.00am

Teaching and learning for the 21st century prepares young people for engaging in an unpredictable, complex and dynamic world deeply influenced by globalisation and the revolution in digital technology. Teachers must approach their work in radically new ways, a transformation increasingly evident in new technology-rich flexible learning environments, characterised by large open spaces, permeable boundaries and diverse furnishings emphasising student comfort health and flexibility. Open design encourages flexibility and allows collaborative, team teaching, with designers claiming significant educational benefits.

Initial teacher education (ITE) must prepare student teachers to work in new ways with new mindsets. Given, however, that many teacher educators do not themselves have the experience of working in teams in technology-rich flexible learning environments, it is an important strategic goal to create opportunities for ITE staff to develop this experience, even as they support their students to work in similar environments.

In this presentation, we document the genesis and early development of a trial technology-rich flexible learning environment and an integrated curriculum paper, underpinned by a personalised approach to learning and assessment. Using a phenomenological paradigm, we reflect on the transitions experienced by participants, drawing on the narratives of both leaders and lecturing staff. This is a work in progress, and at this stage, its main aim is to document the process, and to reflect on it from a senior leader/participant perspective (Benade) and a school leadership perspective (Lewis). Lessons we have learnt (and continue to learn) will support other tertiary providers of ITE.

3.6 Investigating the provision of professional learning and development for middle level teachers

Authors: Brenda Shanks & Tony Dowden

Time: 9.45am

Over the last three decades a plethora of accumulated research evidence has shown that young adolescent students, encompassing the 10-15 year age group, have specific physical, social, emotional and cognitive needs (Caskey & Anfara, 2014) that are most effectively catered for through middle level teacher pedagogies and practices that are specifically designed to be responsive to these needs (Barrett, 1998; Dowden, Bishop & Nolan, 2009; Hayes, Mills, Christie & Lingard, 2006; Middle Years of Schooling Association, 2010; National Middle School Association, 2001; Pendergast, 2005). While specialised programmes of initial teacher education (ITE) and in-service professional learning and development (PLD) have been implemented in the American and Australian contexts over the ensuing years, New Zealand has not followed suit. New Zealand-based research (Shanks, 2010; Shanks & Dowden, 2013), conducted into the availability of programmes of middle level-specific teacher preparation and professional development, revealed a paucity of provision as well as a lack of awareness and recognition among teacher educators of the middle years (Years 7-10) as a unique period of human development requiring differentiated teacher pedagogies and practices. New Zealand teachers continue to complete their initial teacher education within a two-tiered system of primary and secondary education and are not supported with ongoing professional development.

Since the beginning of the millennium, the quality of teaching has been placed under the spotlight. Research evidence (Hattie, 2001; Hattie, 2012) has identified teacher quality as the most influential factor in improving student achievement and outcomes and the imperative for ongoing teacher professional development. Furthermore, explicit links between teacher PLD and enhanced outcomes for students has been advanced by the Education Review Office (2009), Dinham and Rowe, (2007) and Timperley et al., (2007). Evaluations carried out by the Educational Review Office (2001, 2003) have identified concerns about the quality of education that young adolescents in Aotearoa New Zealand experience in the middle years of schooling. Furthermore, attitudinal and engagement data from a range of NZ sources have, over the last decade, provided evidence that students' attitudes to schooling deteriorate in the middle years (Durling, 2007; Cox & Kennedy, 2008; Gibbs & Poskitt, 2010). Such evidence suggests a mismatch between the identified developmental, educational and generational needs of young adolescent students and the teacher pedagogy and practice they experience in their middle years of schooling.

This paper reports on the findings of a qualitative research study, conducted within two international settings, to investigate the provision, delivery and content of specialised middle level professional development for teachers of young adolescent students. The implications of the findings for providers of PLD and middle level school leaders and teachers are discussed. It is envisaged that the findings of this study will provide additional impetus for curriculum stakeholders to ensure that the Learning Pathway in Years 7-10, as identified in The New Zealand Curriculum (2007), is fully maintained and resourced.

3.7 The I/we condition: A report on the study of early childhood curriculum**Authors:** Janita Crow, Yvonne Culbreath & **Andrew Gibbons****Time:** 9.00am

Through the study of early childhood curriculum teachers explore how curriculum is responsive to, and builds on, the interests and knowledge of children, whānau and wider communities (Ministry of Education, 1996). The early childhood curriculum regards teaching and learning, education and care, and theory and practice, as constantly interconnected, and negotiated ideas and experiences. Early childhood teachers work as teaching teams in wider centre communities and so the design, implementation, and evaluation of the curriculum is a collaborative experience involving the entire centre and its wider communities.

As early childhood teacher educators, we regard these conditions as essential to the experiences of studying teaching. In this presentation we report on the development and implementation of an 'I/we' pedagogical approach to the study of early childhood curriculum that strengthens the connections between the experiences of teaching and studying teaching. The 'I/we' approach reflects the strengths that early childhood teacher individually and collectively bring, and the ways in which teaching and learning is a social and relational experience with people, places and things.

This approach has guided our development of a curriculum studies paper at Auckland University of Technology. In designing the pedagogy and the paper we have woven the educational and philosophical thoughts and aims of social innovation, collective intelligence, actor network theories, educational futures and post humanism. The paper is designed to reflect the aims of education in the 21st century, these include: working collaboratively in flexible teaching and learning spaces; engaging in developing local and global networks; personalising learning to reflect the diversity of life and learning experiences and interests; innovating and negotiating curriculum content knowledge and pedagogical approaches; and using new media to access, analyse, create and share knowledge.

This presentation engages with elements of the 'I/we' pedagogy that reflect the importance of experiencing curriculum knowledge as active and dynamic. Knowledge that is valued in the curriculum is constantly changing as knowledge in and about the world changes. In other words, knowledge is always changing through the interaction between *people, places, and things*. This understanding of knowledge is a characteristic of Lyotard's (1979) description of postmodernity. Following Lyotard and others, we are interested in more than what a student teacher knows about curriculum, we are interested in what they know about the conditions in which they know about curriculum.

We then reflect on what the approach has meant for our teaching practices and in particular the ways in which we understand the nature, purpose, and experience of the study of curriculum.

Lyotard, J-F. (1999). *The postmodern condition: A report on knowledge*. (G. Bennington, & B. Massumi, Trans.). Minneapolis: University of Minnesota Press.

Ministry of Education. (1996). *Te whāriki: He whāriki matauranga mō ngā mokopuna o Aotearoa, Early Childhood Curriculum*. Wellington, New Zealand: Learning Media.

3.8 Comparing first-year pre-service teachers student mathematics grades with their entry level qualifications – What does it tell us?**Author:** Pam Perger**Time:** 9.45am

How many times have you heard teacher educators make statements similar to those above?

The strong relationship between a teacher's mathematics content knowledge and their ability to teach mathematics is well established (Ball, Hall & Bass, 2005; Chapman, 2005). There is no argument about the need for pre-service teacher students to have good mathematics content knowledge. Yet there is no guarantee students entering initial teacher education courses will be competent in mathematics (Hamlett, 2009). Today the majority of students enter initial teacher education with NCEA Level 3 [National Certificate of Education] or higher. Students require three subjects at NCEA Level 3, although they only need a minimum of 10 numeracy credits at NCEA Level 1. A University of Auckland study compared university student's entry levels with their first year results. This research identified that those students who did well in NCEA also did well in their first year at university (NCEA, 2016). This would suggest that the higher NCEA qualification students enter with the better they would do in their initial teacher education study.

This Study

Each year the students entering Auckland University's Faculty of Education and Social Work bring different strengths. 94% of students entering initial teacher education in 2014 and 91% of students entering in 2015 entered with a NCEA mathematics qualification (NCEA level 1 – 3). This study compared the pre-service teacher student's NCEA mathematics qualification with the final grade achieved for their first year mathematics paper. The first year mathematics paper is completed in the first semester of study. This paper introduces students to the pedagogy of effective teaching of mathematics. It has a content focus of early mathematical concept development in number, geometry and measurement. Students have 36 hours of tuition, half in lecture and half in workshop format. Findings in this initial teacher education study did not mirror those of the wider University of Auckland study.

When student's final grades for the first year mathematics paper were compared with their mathematics entry data it showed that a larger proportion of A grades (A+, A, A-) were achieved by students who had entered the programme with a NCEA Level 1 mathematics qualification. In 2015 the majority of A grades were achieved by students entering initial teacher education with NCEA Level 1 mathematics. The unexpected results found in this study - achievement of those students entering the programme with only NCEA Level 1 mathematics - raise more questions than answers. What is it about the students entering with NCEA Level 1 mathematics that has allowed them to succeed to this extent? Why didn't those who came in with NCEA Level 3 mathematics achieve higher? Would this trend continue if grades from the second year paper were compared with entry data?

PAPER SESSION #4

SCHEDULE	TIME	ROOM
4.1 In-the-moment coaching: Quality practice within initial teacher education encouraging participation, reflection, and co-construction	11.05am	T101
4.2 "It's important to know it's not about being on show": Examining mentor teachers and principals' positioning with EIT's practice-based primary teaching degree	11.50am	
4.3 Seeking a school-university partnership model in initial teacher education	11.05am	T102
4.4 Practicum as nexus in building student teacher confidence and competence in digital technology in initial teacher education	11.50am	
4.5 Creating critical thinkers	11.05am	T103
4.6 Challenging dominance in the education sector: why it is important and how I can do it	11.50am	

ROOM T101

4.1 In-the-moment coaching: Quality practice within initial teacher education encouraging participation, reflection, and co-construction

Authors: Robin Averill, Michael Drake, Dayle Anderson & Glenda Anthony

Time: 11.05am

Rehearsals, used to simulate classroom teaching through student teachers 'teaching' their peers, are a way to provide approximations of practice. Research within the practice-based pedagogy field have highlighted various modes of coaching. Most commonly, coaching as described in previous studies, has been given using statements (e.g., direct feedback) and instructions, but to date there has been little investigation into the use of questions in coaching students in rehearsals.

Within a wider study into developing high-leverage mathematical teaching practices (e.g., orchestrating mathematical discussion) through using in-the-moment coaching of student teacher rehearsals of practice we examined how coaching using questions could assist novice teachers to promote mathematical thinking and discussion. Our rehearsals focussed on assisting student teachers as they practised teaching a given instructional activity or similar, to promote and support diverse learners to participate in group and whole class mathematical thinking and discussion.

Qualitative and quantitative data drawn from videos of rehearsals, reflective debriefs, and student teacher surveys were collected across a range of primary and secondary mathematics initial teacher education courses over four years. Findings included that student teacher roles in rehearsals were enhanced through coaching with questions and co-construction of both pedagogical content knowledge and practice was enabled. Coaching through questioning drew students' attention to effective practice, particularly in relation to orchestrating mathematical discussion, enabling student teachers to reflect, discuss, make decisions, and immediately trial teaching strategies. While questions lengthen rehearsals in comparison to results from previous studies, the more frequent use of questions appeared to improve the effectiveness of rehearsal through enhancing collaborative participation and reflection.

In the presentation we will provide a rationale for prioritising the use of questions within coaching exchanges. We will discuss the use of questions posed by the teacher educator during rehearsals, including examples of leading questions that guided student teachers to a specific area of consideration, and open questions that had more than one suitable response. The nature and substance of coaching exchanges initiated using questions will be described. Exemplars that indicate how using questions within in-the-moment coaching can result in rich discussions and practice opportunities associated with high-leverage practices will be shared.

Our findings indicate that the questions used during coaching of rehearsals informed and empowered novice teachers. The development of such agency is essential within quality initial teacher education that prepares novice teachers to teach in equitable and ambitious ways, maximising the learning of the students they will teach.

4.2 "It's important to know it's not about being on show": Examining mentor teachers and principals' positioning with EIT's practice-based primary teaching degree

Authors: **Viv Aitken & Kirsty Jones**

Time: 11.50am

In 2015 the first graduates emerged from the Eastern Institute of Technology's Bachelor of Teaching Primary, or BTP. In this three year practice-based degree, students - known as Candidate Teachers - spend two days a week in schools across all three years in addition to going on practicum. This arrangement is possible because Principals and teachers in local schools have strong personal investment and involvement in the programme (the BTP came into being after local Principals successfully petitioned the Ministry of Education for a face-to-face ITE degree option in the region and offered Mentor Teachers within their schools to work in partnership with EIT).

The unique degree design means that strong relationships between schools and the tertiary provider are right at the heart of the programme: they are the key to success and they underpin its future sustainability. In this presentation, Viv Aitken (Programme Co-ordinator) and Kirsty Jones (Teacher Educator and School Based learning co-ordinator) will examine these relationships in more detail.

Interview data from the original group of Mentor Teachers and Principals generated after the first year of the programme will be compared with responses from that same group two years on. As well as giving a general thematic analysis of their responses, the lens of positioning theory (Harre & Langenhove, 1999) will be used to examine how Mentor Teachers and Principals 'position' themselves in relation to the programme within these interviews. Data will be combed to assess how 'roles', 'storylines' and 'positions' have evolved in these teachers' talk over the three years of the programme. The second part of this research study is currently going through ethical approval and is on track to be completed in time for the conference.

This presentation has clear resonance with the conference theme: in a climate where schools and tertiary providers continue to negotiate the terms of practice-based ITE provision and ask the question, 'how best to educate our teachers?' we suggest that a programme such as the BTP may provide some useful answers. For the researchers, the close analysis of pivotal relationships within the BTP provides a valuable supplement to regular and ongoing review and reflection with our programme partners. Implications of our findings for the future sustainability of the BTP will be considered as well as wider implications for other ITE providers seeking to work in closer partnership with schools.

Harre, R., & Langenhove, L. (1999). *Positioning theory*. Oxford: Blackwell.

4.3 Seeking a school-university partnership model in initial teacher education

Authors: Ross Bernay & Ally Bull

Time: 11.05am

There is a substantial research literature identifying the features of successful school-university partnerships. However, most of the partnerships described in the literature are concerned with the improved performance of student teachers *within the current system*, as opposed to an interest in how schools and universities could work *together* to *rethink* teacher education for the 21st century. University-school partnerships *could* provide an entirely new arena for activity in which competing interests, perspectives and opinions play out as different organisations come together. These partnerships *could* provide teacher educators, teachers, and student teachers with opportunities to build knowledge together in the “third space”, an approach that is a cornerstone of innovation and creativity.

This presentation will explore lecturer perceptions around three models of partnership evidenced in their experiences of working in partnership with teachers in a select number of partnership schools during 2015. Each model will be examined through a lens which considers extending partnership into the space of *possibility* rather than what is currently experienced in many schools. The research approach is an instrumental case study in which the object of inquiry is teacher educators’ thinking, not the partnership itself. The research is designed to explore how working in partnership with schools can facilitate new insights into what it means to be a 21st century teacher educator. This research is currently in progress and the presentation draws on early findings.

4.4 Practicum as nexus in building student teacher confidence and competence in digital technology in initial teacher education

Authors: Peter Maslin & Nigel Smith

Time: 11.50am

This paper builds on an earlier exploratory research project and literature review that raised the potential of a digital dilemma existing in Initial Teacher Education (ITE). A digital dilemma centred in research findings that showed student teachers digital expectations were not being met by the reality of ITE coursework and practicums. The impact of this digital dilemma was the potential undermining rather than empowerment of a student teachers confidence and competence in using digital technology as a pedagogical tool. The paper presents the findings of a research project in 2015 that gained quantitative and qualitative data from graduating ITE Primary and ECE students from two New Zealand based ITE providers. Using an anonymous, online survey the researchers sought to replicate and extend the original research, as well as gather student voice about what they see as the most effective ways ITE can intervene to minimise that potential impact of a digital dilemma.

Findings from the project identify an interesting insight about the importance of the practicum experience as the nexus in developing student teacher digital confidence and competence. Four practical suggestions as to how an ITE can intervene to ensure this happens also emerged. Firstly, student teachers want ITE providers to take a more deliberate role in planning the scope of practicum experiences and support. Secondly, student teachers saw that Visiting Tutors have a role as a digital mentor; a role they saw as being of vital importance especially during those practicums that lacked strong digital engagement. Thirdly, student teachers wanted an increased emphasis in the modelling, embedding and engagement of digital technologies in coursework that scaffolded their pedagogical application. Fourthly, student teachers wanted prioritise specific digitally focused reflection during practicum that would feed forward into future coursework.

As a result of these findings, two models have been developed to guide the development of digital confidence and competence of student teachers through their ITE programme. The first model examines how an ITE can intervene within both coursework and practicum spaces to create an integrated cycle of growth in student teacher digital confidence and competence. The second model focuses on how digital pedagogy within coursework elements can be replicated and built on by the student teacher within the coursework and in practicum experiences.

Overall this paper explores an important pedagogical issue for the future of quality ITE and its provision of the best educational opportunity for future teachers. Participants in this presentation will be invited to respond to these models and debate their potential contribution to the development of quality ITE.

<p>4.5 Creating critical thinkers <i>Authors:</i> Rikke Betts & Tui Summers <i>Time:</i> 11.05am</p>
<p>The teaching profession needs teachers who are able to make informed decisions in relation to curriculum and pedagogical practices. Tertiary providers have been using a variety of teaching strategies to build reflective critical thinkers in their student teachers with limited success (Ussher & Chalmers, 2011). Yet, the ability to think critically is reflected in the Graduating Teacher Criteria (Education Council Aotearoa New Zealand, 2015) required by early childhood teachers on completion of their initial teacher education (ITE) training (Summers & Betts, 2016).</p> <p>This participatory action research project aimed at fostering critical thinking skill in third year student teachers studying early childhood education at two initial teacher education (ITE) providers in Christchurch. The learning and sharing circle methodology was adapted from research projects carried out in Canada (Atkinson & Eliot, 2013, Pacini-Ketchabaw, 2010; Pacini-Ketchabaw & Pence, 2011) and Sweden (Dahlberg & Bloch, 2006) where the focus was on quality and the participants were qualified teachers.</p> <p>A learning circle is a gathering of participants who discuss a topic/focus of interest to them. The learning circles take place over a set period of time at a regular interval, subject to the environment. A facilitator/researcher will start the learning circle but does not act as an 'expert'.</p> <p>A sharing circle is a gathering of participants and facilitators/researchers from all the learning circles to discuss knowledge, experiences and values embedded in practice in the learning circles.</p> <p>The learning and sharing circles methodology lends itself to be used in teacher education by creating mini learning and sharing circles in a classroom/on-line format where the topic acts as a vehicle to discuss critical thinking.</p> <p>Five themes that have emerged from the research findings and that are considered to promote critical thinking and challenge technical responses to teaching and learning are: open mindedness, change in practice/behaviour, time, confidence and relationships.</p> <p>In this presentation the researchers will present a resource designed for teachers on tertiary institutions to promote critical thinking amongst their students. The tool is designed for tertiary teachers to use in their everyday work to develop critically thinking students. Although the critical thinking tool developed as a result of a project focussed on early childhood initial teacher education the researchers intend that other disciplines will also find this tool helpful. The tool comprises a poster, summary cards and individual cards designed to be used by tertiary teachers in multiple ways including when they are designing and developing their teaching; when they are teaching; when they are assessing students; and, when they are reviewing their teaching. Other possible uses of the resources will be discussed in the presentation.</p> <p>The tool is designed to support teachers to develop more critically thinking learners in the future.</p>
<p>4.6 Challenging dominance in the education sector: Why it is important and how I can do it <i>Author:</i> Kath Cooper <i>Time:</i> 11.50am</p>
<p>This thesis reports on a small scale qualitative research project located in Aotearoa/New Zealand. The objective of the research was to understand how lesbian teachers disrupt heteronormativity in early childhood settings.</p> <p>The literature review argues that heteronormativity is the main barrier preventing teachers speaking about lesbian and gay issues. Heteronormativity is a discourse that works to maintain heterosexual hegemony. As a result of this dominance, acceptance of lesbian and gay issues is still a contentious issue within Aotearoa/New Zealand early childhood settings. This study provided an opportunity for heteronormativity to be viewed solely from a lesbian teacher's paradigm. My intention was to also examine the strategies that participants used to challenge heteronormative dominance. Participants negotiated risks to ensure that both children and adults were aware of the hegemonic view point enforced by heteronormativity. A feminist post-structuralist and queer theory paradigm was used to frame the analytical approach.</p> <p>My findings suggest the following; minimising the instances where lesbian teachers need to be mindful of their sexuality would ensure that they were able to be authentically engaged teachers rather than concealing part of their identity. Implications for all teachers included sharing the responsibility of disrupting heteronormativity which would become lighter as other teachers advocated for lesbian and gay issues to be visible within their community.</p>