RESEARCH BULLETIN

FEDU projects, publishing and publications news

Contributions are very welcome. Please send contributions on new projects, books and articles and other items of general interest to mpeters@waikato.ac.nz

BIG DATA AND LEARNING ANALYTICS

Farnam Jahanian, who heads the National Science Foundation directorate for Computer and Information Science and Engineering (CISE), presented a paper entitled "The Promise of Big Data" at the Big Data Partners Workshop on 3 May, 2013 as part of The White House Initiative of Big Data, 2012 where he made the following claim:

> Advances in information technologies are transforming the fabric of our society, and **data** represents a *transformative new currency* for science, engineering, education and commerce. (Jahanian, 2013, p. 2)

Jahanian suggests that a "paradigm shift" has occurred from "Hypothesis-driven to Data-driven Discovery" and he illustrates this claim by reference to three sources:

Science - In the 11 February 2011 issue, *Science* writers joined with colleagues from *Science Signaling*, *Science Translational Medicine*, and *Science Careers* to provide a broad look at the issues surrounding the influx of research data. The collection of articles highlights both the challenges posed by the data deluge and the opportunities that can be realised if we can better organise and access the data.

The Economist's 14-page special report: The data deluge released February 2010.

Microsoft Research's (2009) The Fourth Paradigm: Data-Intensive Scientific Discovery which it claimed presented the first broad look at the rapidly emerging field of data-intensive science, released in 2009.

Events to look out for

Professor Guy Claxton seminar *Topsy-turvy education: How the science of embodiment might invert our view of schools*. 10 July, 2014.

Professor Ian Menter seminar Only connect! Research and teacher education in the UK: 3 July, 2014.

These sources and a range of other related initiatives indicate a profound shift in the nature of knowledge production. As Bernard Steigler (2014) writes in The Digital Future of the University, "The digital constitutes a new *épistémè*: it is the very nature of knowledge in all its forms that will be affected. This technology will function for our epoque in the same way that writing did for antiquity". Bernard Stiegler is a French philosopher at Goldsmiths, University of London and at the Université de Technologie de Compiègne.

> "Analytics" is a term used in business and science to refer to computational support for capturing digital data to help inform decision-making. (UNESCO, 2012, p. 1)

"Learning analytics" is a term used by those in the education community who are seeking to understand the implications of these developments for how we analyse learning data for use by organisations to improve learning systems (UNESCO, 2012). Learning Analytics involves the use of computational techniques to analyse learner data, generate visualisations of learning dynamics, and build predictive models to test theories. As data can be gathered in real time the proposal is that there is a possibility of continuous improvement via multiple feedback loops

Research that makes a difference

Wilf Malcolm Institute of Educational Research
Te Pūtahi Rangahau Mātauranga o Wilf Malcolm
THE UNIVERSITY OF WAIKATO

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

that operate along different timescales - immediate to the student about the next problem, daily to the teacher to inform the next day's teaching focus, and less regularly for principals to monitor progress. Put another way, the hope is for data-rich systems that are able to provide informative and actionable feedback to learners, teachers, and to leaders and administrators (Bienkowski, Feng, & Means, 2012).

The current conversation on learning analytics includes technologists (academic and commercial), researchers in education, leaders and policymakers, educational practitioners, organisational administrators, instructional designers, product vendors, and learners themselves. However, as the UNESCO 2012 research brief identifies, "critical debate is needed on the limits of computational modelling, the ethics of analytics, and the educational paradigms that learning analytics promote."

Some possible follow up reading:

Berners-Lee, T., Hendler, J., & Lassila O. (2001, May). The semantic Web. *Scientific American*. doi:10.1038/scientificamerican0501-34

Castells, M. (1996). *The information age: Economy, society and culture*. Oxford, England: Blackwell.

Cope, B., Kalantzis, M., & Magee, L. (2011). *Towards a semantic Web: Connecting knowledge in academic research*. Cambridge, England: Woodhead Publishing.

Mayer-Schönberger, V., & Cukier, K. (2013). *Big data: A revolution that will transform how we live, work, and think*. London, England: Mariner Books.

West, D. M. (2012). *Big data for education: Data mining, data analytics, and web dashboards*. Washington DC: Brookings Institution.

RESEARCH INITIATIVES

The following research projects have been approved by the Faculty of Education Ethics Committee.

Name	Project title
Bronwen Cowie	Master of Teaching and Learning developmental evaluation
Sue Cheesman	From pool to lake: A site specific dance
Hamish Crocket	The home of cycling comes to town: An examination of various user-groups experiences
Kathie Crocket; Elmarie Kotze	The role of research supervision in the development of practitioner-researcher identity
Viv Aitken	EXTN: Mantle of the expert as a tertiary tool: A case study
Noeline Wright	EXTN: Growing PICT: Mapping ITE students' developing use and knowledge about using ICT tools for learning
Marg Cosgriff	EXTN: Reconceptualising outdoor education in the primary school classroom using teaching as inquiry approaches
Rebecca Olive	Regional migration for high performance sport: The socio-psychological experiences of athletes, coaches and support staff in the Waikato region

The Faculty of Education Research and Leave Committee have provided funding for the following projects this year.

Name	Project title
Richard Calderwood	Fostering financial literacy for teaching: A pilot study
Jenny Young-Loveridge	Using mulitplication and division contexts to support children's part-whole thinking: Maintaining the intervention
Cheri Waititi	Stories and refections on experiences of a marae noho at Te Kohinga Mārama
Marg Cosgriff	Reconceptualising outdoor education in the primray school classroom using teaching as inquiry approaches

CALL FOR PAPERS

Policy Futures in Education: 'Big data' in education and learning analytics

A special issue of *Policy Futures in Education* will investigate big data in education and learning analytics. Possible topics include:

- » Big data and education policy
- » Big data and the implications for education research
- » Big data and edu-business
- » Big data and schooling in democracies
- » Big data and knowledge production
- » Big data and school systems
- » Big data and the purposes of schooling

Editors: Michael A. Peters; Robert Lingard; Tina Besley and Jillian Blackmore.

Please send expressions of interest including a title, abstract and key texts to one of the editors by July 30, 2014. Deadline for full papers is October 10, 2014 for publication in late 2015. The Journal's information for authors can be found at www.wwwords.co.uk/pfie/howtocontribute.asp

Research that makes a difference

Wilf Malcolm Institute of Educational Research
Te Pūtahi Rangahau Mātauranga o Wilf Malcolm
THE UNIVERSITY OF WAIKATO

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

PROJECT UPDATE

Pedagogies of Educational Transitions (POET)

A team from the Faculty of Education is working with a group of international scholars as part of a four-year, five-country Marie Curie International Research Staff Exchange Scheme (IRSES) project. The project is focused on Pedagogies of Educational Transitions (POET). Now in its second year the project has involved POET teams from The University of Waikato; Mälardalen University, Sweden; University of Strathclyde, Scotland; University of Iceland; and Charles Sturt University, Australia in undertaking a series of planned work packages. Each package brings together scholars who are involved in existing programmes of research in their own country and provides an opportunity to extend researchers' skills and expertise and address questions at the international, comparative level.

In March/April 2014 the Faculty of Education hosted 15 international scholars from the four other counties. The focus for this exchange was an intensive exploration of indigenous research and included visits to settings, workshops and presentations and an indigenous research conference (http://www.eenz.com/irc14/). The conference highlighted indigenous research within the faculty as well as including presentations from guest speakers Professor Angus Macfarlane, Dr Lesley Rameka, Dr Sarah-Jane Tiakiwai and Associate Professor Leonie Pihama. The international scholars provided insights from their home countries. In addition, the project ran a research symposium for the Early Years Research Centre where the POET teams from the five countries shared their research with local teachers and researchers.

The New Zealand team is currently preparing to disseminate findings from some of the POET projects at the European Early Childhood Education Research Association (EECERA) conference in Crete and to participate in work package five at the University of Iceland in September. The work in Iceland will examine issues of curriculum continuity and interrogate policy frameworks in each country that relate to educational transitions. The team is also preparing to host again in 2015, this time with a focus on longitudinal research and transition journeys.

NEW BOOK PUBLICATION

Bonk, C. J., & Khoo, E. (2014). *Adding some tech variety: 100+ activities for motivating and retaining learners online*. Bloomington, IN: Open World Books.

This book is available as a free download or to purchase for Kindle or in print.

Adding some TEC-VARIETY is unique in that it combines the theoretical and pedagogical foundations of effective learning with 100 easy-to-implement activities that promote the engagement of online students in deep learning. These strategies can instantly breathe life into courses that fail to tap the enthusiasm and imagination of students. TEC-VARIETY has become a handbook for my design of engagement in online classes. (Reviewer comment).

Branson, C. M. (2014). *Making a difference:Leadership for the future - Has leadership theory lost its way*? Hamilton, New Zealand: Wilf Malcolm Institute of Educational Research.

If it isn't ethical, it isn't leadership argues the author of this booklet, based on an Inaugural Professorial Lecture delivered at the University of Waikato in September 2013.

In recent years, the unscrupulous and opportunistic leadership practices of key people in the political, media, corporate, industrial, religious and educational spheres raises a serious question about our understanding of leadership. Is our current leadership theory helping us to adequately prepare our leaders? In this lecture, Professor Chris Branson will apply insights from other contemporary socio-cultural disciplines in order to not only describe a very different way to understand leadership but also to provide a new direction for future leadership preparation programmes.

This book is available to purchase from the Wilf Malcolm Institute of Educational Research. To get your copy, contact Margaret Drummond.

Research that makes a difference

Wilf Malcolm Institute
of Educational Research
Te Pūtahi Rangahau Mātauranga o Wilf Malcolm
THE UNIVERSITY OF WAIKATO

THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

INSIGHTS AND IDEAS FROM OUR DOCTORAL RESEARCHERS

Following an initiative by our doctoral students the Research Bulletin will include a regular contribution from them. Doctoral research is an important adjunct to the Faculty's research capacity. Full-time doctoral candidates come from approximately 20 different countries. This cultural diversity enriches the research that is conducted and widens the networks created for research collaborations and contexts, both during and after their candidatures. The Bulletin section will provide further opportunities to learn from the experiences and insights of the doctoral researcher group.

The importance of understanding cultural contexts

This first contribution focuses on the importance of understanding cultural contexts when researching as doctoral candidates. Aminath and Susanne highlight how their specific cultural contexts help them understand their research, whilst Nga comments on the importance of considering culture when designing research.

Editorial Group: Aminath Adam, Susanne Maezama, Carrie Swanson, and Nga Thi Tuyet Phan

Aminath Adam: Cultural influence on teachers' pedagogical practice

My research involves investigating the impact of culture on pedagogical practices in the Maldives. The Maldives is a small country, consisting of a chain of 1196 coral islands in the South Asian Region. Islam has been practised in the Maldives since the middle of the 12th century and its religious principles and practices are deeply rooted in the Maldives. My research examines the influence of a specific cultural practice related to learning to recite the Qur'an. This cultural practice is embodied in children's education as early as age two. The aim of this cultural practice is to ensure children become fluent in the recitation of the Qur'an to enable them to perform the everyday rituals of Islam. In this practice, the emphasis is not given on understanding the meaning of the Qur'an. Although Qur'an is written in Arabic and Arabic is not the local language of the Maldives, there was no focus given on learning Arabic. This means that all Maldivians learn to recite the Qur'an without understanding its meaning. My research indicates that this cultural practice led Maldivians to form a belief in the value of receiving knowledge without understanding. This belief has accordingly influenced teachers' pedagogical practice of delivering content, rather than allowing students to create knowledge.

Susanne Maezama: Cultural influence on women's leadership

My study investigated Santa Isabel matrilineal cultural influence on women's leadership beliefs. Santa Isabel Island is the longest of the six main islands in the Solomon Islands. Matrilineal culture embraces a notion of understanding that land and kinship is passed on through successive generations of women. This means women are given much power and authority in this culture. My research examines specific cultural practices related to women's importance in this culture. For example, the historical cultural practice of childbirth is that the placenta and cord are returned to the ground after the birth of a child. This cultural practice is related to the belief that women's bodies, land and tribe are intrinsically connected through childbirth. My research indicates that this connection establishes a deep relationship that women as mothers make with the land which brings a sense of place and coherence to people's existence. Consequently, this practice gave women the space to be valued, respected and honoured because it is believed that the continuity of the tribe and culture rests upon women.

Nga Thi Tuyet Phan: Cultural influence on designing research

My study focuses on understanding factors influencing Vietnamese teachers' sense of self-efficacy in teaching English as a Foreign Language. Being a researcher in the Vietnamese context required me to consider specific cultural features when selecting data collection methods. In the Vietnamese culture, people have a strong sense of belonging to each other. Peers' presence in the focus groups would provide a supportive environment in which teachers feel comfortable to share their experiences. Therefore, I selected focus group discussion as my initial data tool. However, Vietnamese do not feel comfortable sharing sensitive information such as personal teaching competency in front of others. It was hoped that the use of individual interviews to understand such topics would make teachers feel at ease and able to talk freely. I chose Vietnamese as the medium of communication in both interviews and focus groups because it helped participants express their experiences more readily and openly since English is a foreign language for them. Considering such features allowed me to develop an in-depth understanding of Vietnamese teachers' sense of self-efficacy in teaching English.

Research that makes a difference

Wilf Malcolm Institute of Educational Research
Te Pūtahi Rangahau Mātauranga o Wilf Malcolm
THE UNIVERSITY OF WAIKATO

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato