British Academy: Harnessing Research in Education in the UK: Case Studies

Case Study: the 'New Basics' Project in Queensland

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Context

Queensland is an Australian state with a population of approximately 4.9 million spread over geographical space seven times that of the UK. The Queensland Department of Education (known as Education Queensland at the time of the case study project) is responsible for the provision of notionally free, secular government schools servicing diverse populations from the large conurbation in South East Queensland, through regional centres and rural towns, to remote Aboriginal and Torres Strait Islander communities. Queensland, like other Australian states, also hosts strong independent and Catholic school sectors that attract some government subsidy while charging additional fees. These sectors operate under the same curriculum, assessment and regulatory frameworks. Currently, approximately 40% of school children attend non-government schools across Australia. This proportion has been steadily growing, particularly in the secondary phase, and distinguishes the Australian schooling landscape from other cognate settings. Teachers in Queensland schools are prepared in either a four year undergraduate degree, or a postgraduate degree/Masters in education. These programs are accredited by the Queensland College of Teachers and aligned with the professional standards of the Australian Institute for Teaching and School Leadership (AITSL).Alternative industry-based routes into teaching, such as Teach for Australia, have not been established in Queensland.

While responsibility for education has rested with state governments since the federation of Australia in 1901, there has also been a political trend towards 'cooperative federalism' since the 1990s (Keating & Klatt, 2013). Under leadership and incentives from various Federal governments, the states have cooperated to institute nationally consistent standardised tests, uniform reporting on school profiles through the 'MySchool' website, professional standards for teachers, a compact with Australian youth regarding the school/work transition, and a national curriculum.

These initiatives had to negotiate historical differences between states in regard to age for commencement, pedagogic preferences and assessment practices, and in doing so, served to heighten and politicise public debate in the media around the curriculum and quality of schools. However comparative benchmarking has equally precipitated structural reforms to better align systems across states. In this way, Queensland's state education system has undergone significant change recently: delaying the age of commencement for schooling to align with other states; adding an additional compulsory 'Prep' year; and shifting Year 7 to secondary school to support more discipline-specific pedagogy and curriculum. Most recently, there has been a review of Queensland's historically unique system of school-based moderation for final years' assessment, with the system now preparing to reinstate an external examination in line with other states. At heart, these reforms aim to improve Queensland's aggregated performance in literacy and numeracy achievement relative to other states.

At the moment, schooling years now include a 'Preparatory' year and Years 1-6 in primary school, then Years 7-12 in secondary school. Children must be five years by 30 June in the year they enrol in Prep, and must achieve a Senior Certificate, equivalent trade certificates or the age of 17 before leaving compulsory schooling. These layered changes and shifting ground provided the backdrop and larger context for the case study project.

Educational research

Educational research is undertaken by a number of parties:

- academics in Education faculties or schools of education, typically prepared through doctorates – both traditional PhDs, and professional EdD doctorates. The Australian PhD is

entirely thesis-based, while the EdD involves some coursework prior to a practice-based thesis. Research funds and fellowships are available to these researchers through the Australian Research Council's National Competitive Grants, under the Discovery scheme and the industry-focused Linkage scheme, as well as more ad hoc industry and philanthropic funding opportunities. In the last Excellence in Research Assessment (similar to the UK's REF), 38 universities reported conducting educational research which was evaluated to be of variable quality (Harrison & Seddon, 2013). This perhaps reflects the historical fact that many teacher education colleges were only incorporated within the university sector and research agendas from the 1990s.

- research staff employed by state education departments, typically interrogating the large quantitative data sets collated through administrative systems. However, education departments are increasingly choosing to commission bespoke research from academics by tender or invitation. Large management companies, such as PriceWaterhouseCoopers and Deloittes, have recently started to compete for such tendered projects, suggesting a shift towards econometrics as the informing discipline, rather than educational psychology or sociology.
- the Australian Council for Educational Research. This is an independent not-for-profit organisation that develops evaluation instruments and psychometric assessment tools. It also conducts commissioned and tendered research, monitoring and assessment exercises across the globe. The majority of staff have doctorates.

The New Basics project

In this case study, the broad term 'New Basics Project' will be used to refer to a sustained program of research and reform that was carried out in Queensland between the years of 1998 and 2008. This involved three broad phases:

- 1998 - 2000: **The Queensland School Reform Longitudinal Study (QSRLS).** A team of researchers from the University of Queensland led by Professor Bob Lingard and Dr James Ladwig were commissioned to conduct research into the impact of different models of school devolution on student achievement. This was later redesigned to be a study of the quality of classroom practice across Queensland schools, on the basis that this is where change ultimately happens.
- 2001 – 2004: **The New Basics Trial**: 59 schools across Queensland participated in a trial led by the Deputy Director-General, Professor Allan Luke, on secondment from the School of Education at The University of Queensland, supported by a new departmental branch, to develop and implement the 'new basics' curriculum, using 'productive pedagogies', and assessed through 'rich tasks'.
- **Evaluation studies** by internal and external parties monitoring the implementation, impact and outcomes of the trial.

The impetus for the original commission emerged in response to the combination of trends outlined above:

- Government interest in devolved school-based management to improve 'school effectiveness', and trade union opposition.
- Early versions of national testing showing Queensland's performance in literacy and numeracy to be relatively poor, notwithstanding the fact that the students were typically 6 - 12 months younger than their counterparts elsewhere.

- Growing concern over the 'middle class drift' towards private schooling suggesting a loss of confidence in public schooling
- Growing diversity in the school-aged population for whom curricular precepts and pedagogical traditions were not working.
- New economic agendas and social conditions demanding a different kind of curriculum reflecting the demands of the future labour market.
- Concern about the 'middle years' of schooling and the primary/secondary transition.

These drivers were approached through core ethics of: promoting equity in both access and outcomes for students; enhancing teacher professionalism; shared ownership of school reform; and achieving generative alignment amongst systemic curriculum, pedagogy and assessment. There was also an explicit commitment by government to invite rigorous research to inform and test claims of improvement throughout the reform process. This required benchmark data on the nature and quality of school practices at the outset.

The Queensland School Reform Longitudinal Study

The QSRLS was originally commissioned by Education Queensland in 1998 under the Liberal Borbidge State Government, then supported by subsequent Labor State Governments. The multidimensional design included:

> large-scale surveys of teachers and principals for systems-wide data on school reform, case study analyses of the impact of management in 24 schools, coded observation of 600 classroom lessons, evaluation of student work from those lessons and meta-analysis of their achievement using conventional measures. (Education Queensland, 2000, 1.2)

The research design built on the concept of 'authentic pedagogies' developed by Newmann and Associates (1996) in the University of Wisconsin's Centre on the Organisation of Restructuring of Schools (CORS) project. The QSRLS in turn aimed to 'widen the aperture used when observing classooms' (Ladwig, 2007, p. 61), adding more potential dimensions of quality in classroom practice that were derived from a rigorous theoretical and empirical literature review. Where the Newmann research focused on academic learning outcomes, the Queensland research added social learning outcomes to the Newmann model. The underpinning hypothesis was that high levels of authentic pedagogies would enhance student outcomes, in particular for equity target groups, as concluded in the US project. Ladwig (2007, p.66) explains the intention behind the project:

> to see 1) if the general findings of CORS would obtain and 2) to examine the effects of these dimensions relative to students from traditionally recognised equity groups, in particular students from low socioeconomic, indigenous, non-English speaking backgrounds and both sexes.

A detailed coding schema was developed with 20 items that mapped to 4 domains (intellectual quality; connectedness to the world; recognition of difference; and social support). The degree to which each of these various qualities were observed in a lesson was scored on 5 point Likert scales. Schools (primary and secondary) were selected through a stratified sample across diverse communities, with purposeful selection therein of classrooms to sample different year levels and subjects. Classrooms were visited and observed a number of times. Over three years of data collection, 974 lessons were observed in 24 schools. Overall, Queensland classrooms at the time were shown to display high social support, but low intellectual challenge (particularly in Year 8, being the first year of high schooling at the time); little 'connectedness' to other life contexts; and little recognition of difference (Hayes et al., 2006; Lingard, 2007; Lingard et al., 2003; School of

Education, 2001). These findings set the agenda for the curriculum, pedagogy and assessment reforms in the next phase.

Designing and trialling new curriculum, pedagogy and assessment

The next phase of the research/reform program involved the conceptualization and design of a futures-oriented curriculum for Years 1-10, with conceptually aligned frameworks for pedagogy and assessment, to take the Queensland system into the challenging digital and globally competitive conditions of the new century. In the spirit of the program's core ethic of shared ownership, the trial was intended to enlist teachers, school leaders and their expertise in a 'dialogic implementation – *not* a command relationship – between schools and central office' (Education Queensland, 2000, 2.5). This phase was marked by the creation of a dedicated branch in the department to support the initiative, and temporary appointment of a researcher on the QSRLS, Professor Allan Luke, to the role of Deputy Director General, creating 'an uncommon alliance of university academics and public servants' (Mills & McGregor, 2016, p. 114).

Initially 38 schools were selected to participate in the trial. Over the year 2000, these schools undertook **professional development** to prepare curriculum materials and assessment tasks. From 2001 to 2003, they then implemented the 'New Basics' curriculum, through the conscious cultivation of 'Productive Pedagogies', assessing student learning through 'Rich Tasks' which were problem-based and trans-disciplinary. A second wave of 21 schools commenced their preparation in 2001, and implemented the program from 2001 to 2004. Schools were selected on the basis of:

- Innovative practices to date, with a particular emphasis on pedagogical reform
- High level of community support for curriculum innovation
- Teacher access to the Internet
- Demonstrated willingness to share experiences with other schools/clusters (Education Queensland, 2000, 2.5)

These conditions provided fertile ground for innovative practice, but might also be expected to have produced a surge of energy and commitment difficult to reproduce when/if the reforms were mandated more broadly. Schools were each allocated **a 'critical friend'** from an external organisation – these included the teachers' union, principals' association, Indigenous organisations and several universities. This strategy grew a broader community of expertise with a stake in the trial.

The trial also embedded **a parallel research program** that systematically collected and analysed qualitative and quantitative data regarding student outcomes, classroom pedagogies (using the tool developed in the QSRLS), systemic investments and school culture over the project's duration. Data from trial schools were matched with that of 'like' and 'comparison' schools to gauge the impact of the trial.

It should be noted that the research program was unable to access departmental data at the level of individual students. In particular: 'there was no outcome data either on conventional achievement (test scores or marks), retention, or social class, and nothing on linguistic/cultural background' (A. Luke, personal communication, March 26, 2017). This limited the capacity for the kind of multilevel analyses that were carried out in the CORS project, and in subsequent research in Singapore and NSW systems: 'The only achievement effects then that we could derive in QSRLS were that higher levels of productive pedagogies … yielded better classroom artefacts, which were coded post-hoc by teachers on a Newmann coding scheme' (A. Luke, personal communication, March 26, 2017).

The evaluation phase

Education Queensland then commissioned an independent evaluation of the 'merit' of the New Basics trial and its research program (Ainley, 2004) from the Australian Council of Educational Research with regard to student outcomes, equity goals, and feasibility for the wider system. This evaluation drew on the data collected over the trial phase, and an appraisal of the 25 research publications generated (summarised in Table 1, pp. 12-14).

In contrast to the action-based design of the trial, and its efforts to nurture 'dialogue' with the participating teachers and leaders, the criteria used to formally evaluate the research and the reform's feasibility drew on a different research paradigm, checking for 'bias', querying sample size, whether the sample was representative etc. While the author acknowledged that random assignment of schools or students to the trial was not practicable in this lived experiment, the evaluation nevertheless proceeded on the basis of such criteria. The final summary analysis calculated or imputed effect sizes on various trial/non-trial comparisons (p. 68).

In its carefully mitigated terms, the evaluation pointed to the strengths of the New Basics program (quality of student work; establishment of the moderated assessment system; changes in approaches to teaching over time), and its weaknesses (failure to register improvement of student achievement by standardised measures; resource demands; capacity to cater for student and teacher mobility; eventual articulation of transdisciplinary New Basics with traditional disciplines in upper secondary school; greater impact in upper primary; lack of demonstrable impact on equity differentials).

Members of the research team also highlighted a systemic weakness in teachers' disciplinary content knowledge that limited the success of the transdisciplinary design.

The end of the trial

Despite the investment of time, funds, and learning in the trial, new waves of reform were to overtake and displace the New Basics trial. These effectively ceased any attempt to continue the trial or scale up the reform, though the system had learnt a lot about curriculum, pedagogy, assessment, change and itself (see Matters, 2006). Another state government initiative absorbed some of the intellectual work of the New Basics trial into a new Queensland Curriculum, Assessment and Reporting (QCAR) framework. New political conditions shifted interest to fresh vote-attracting policies, such as the creation of discipline-specific academies for the 'best and brightest' to address the middle class drift to private schools. At the Federal level there was growing support for national testing and curriculum, developments actively supported by Premier Bligh. In that search for convergence around curriculum across the nation, more innovative models fell off the agenda (Lingard & McGregor, 2014).

Project impact

The size, diversity and geographic reach of the QSRLS classroom sample, the high profile and capacity of the expert research team, the careful theoretical explication of each variable, and the comprehensive and rigorous methodology meant this project was of a scope, scale, duration and quality rarely seen. The funding to enable this quality attests to the political commitment behind the project. These conditions in turn explain its subsequent legitimation and impact:

> The scale of the QSRLS sample and the fact that it was an exercise supported and funded by the department of education itself provided a degree of open reporting and direct

consumption among schools and teachers that made the QSRLS contribution unique. (Ladwig, 2007, p. 70)

These same attributes also meant that preliminary findings were taken up rapidly and widely, both through extensive professional development efforts, and by other systems such as New South Wales in its contemporaneous model of 'Quality Teaching' (Professional Support and Curriculum Directorate, 2003). The union supported the initiatives given the investment in professional development. The teaching profession welcomed the input, and the way the initiative built on their strengths in teacher-judgement in assessment. There was no opposition to the project in parliament, despite the presence of the nascent far-right One Nation party.

There is a question whether it had too much impact. The research team has since expressed some concern that the research was taken up **too readily and perhaps too enthusiastically**, with the coding schema 'incorporated into the professional development lexicon of Education Queensland (well before the development of the New Basics initiative)' (Ladwig, 2007, p. 69) and the distribution of a booklet to all schools. The 20 item descriptions of high quality pedagogy were widely embraced as a template for good practice in professional development and teacher education, rather than treated as tentative claims or potentials to be tested and trialled in situ. In fact, some of the items were later shown to be unstable or inconclusive in their contribution to student achievement (Ladwig, 2007). This reflection suggests that 'high impact studies' might also indicate naïve consumption of research amongst professional end-users.

Travelling design

The QSLRS and New Basics trial generated keen interest from other education systems and the research community – both nationally and internationally. The research design of broad scale observations of pedagogic practices to underpin a rigorous research program and systemic reform was taken up in other jurisdictions:

- In NSW, a similar but evolved design of research-informed reform was undertaken in the 'Systemic implications of pedagogy and achievement in NSW public schools' project funded as an ARC Linkage project in partnership with the NSW Department of Education, 2004-2006 (Amosa, Ladwig, Griffiths, & Gore, 2007). The research team lead by Professor Jennifer Gore and Associate Professor James Ladwig. The latter had been part of the QSRLS team.
- In Singapore, Professor Allan Luke was invited by the newly established Centre for Research in Pedagogy and Practice, in the National Institute of Education, to participate in their CORE research program, 'to build a multidimensional baseline of descriptive, observational and intervention-based data on all aspects of Singaporean schooling' (Luke, Freebody, Shun, & Gopinathan, 2005, p. 13). This well-funded project built iteratively on both the Newmann & Associates' (1996) project, and the QSRLS to address the key research question: 'What factors contribute to educational success and outcomes in Singapore schools?' A new coding schema was developed to pay more attention to the nature of knowledges and classroom discourse in the classroom observations (Luke, Freebody, Cazden, & Lin, 2007). Over 100 schools were involved in the research. Interim findings were circulated to share ownership, and for the research to act as a 'catalyst' (p.15) feeding into targeted initiatives. As a one party state, political stability could be assumed, so this project was able to inform a 10 year program of curricular and assessment reform.

Travelling ideas

The key conceptual contributions of 'productive pedagogies', 'rich tasks' and 'new basics' have been, and continue to be, generative in multiple contexts. The many publications emanating from the QSLRS are highly cited in international journals. Members of the original team have also been influential in taking the frameworks into new settings – for example:

- Professor Bob Lingard's subsequent term at the University of Edinburgh. Professor Lingard worked with independent schools, government bodies and some local authorities to incorporate rich tasks in their assessment practices (Lingard, 2009). He was invited to give a keynote speech to the British Educational Research Association Annual Conference in 2006, and taught in postgraduate programs for school leaders;
- Professor Luke and Associate Professor Ladwig's consultations with the International Baccalaureate Organisation, which have impacted the IBO's Middle Years Programme with its emphases on 'intellectual challenge', learning 'connected to their lives and their experience of the world, and long-term interdisciplinary projects that reflect the rich tasks design.

There is also anecdotal evidence of these ideas being taken up in diverse settings to challenge and enrich practice. For example, Professor Lingard also mentioned two teacher education programs in Ireland that were re-structured around the concept of productive pedagogies. Similarly, Christopher Gabbett's report on his 2011 Churchhill Travelling Fellowship noted that:

> In several states in the USA, it [the productive pedagogies framework] was adopted and adapted to inform teacher practice. A number of local authorities in Scotland implemented the 4 key areas as pillars of CPD and performance management. Indeed, … I was invited to a school in Halton to present to staff, as they were about to utilise the productive pedagogies in developing a year seven curriculum.

More subtly, the project has promoted the research and practice field to think more carefully about alignment between curriculum, pedagogy and assessment design in school reform, and to champion teacher professionalism and teachers' role in creating any desired change.

Factor contributing to the impact of educational research

This project prospered under a set of enabling conditions, both internal and external to the project. In terms of internal conditions, it was conceived and funded as a **rolling program of research and reform** that allowed the thinking and practice to mature and crystallise over time, as opposed to a one-shot, one-dimensional project that sought to demonstrate impact on one implementation cycle. The design thus dignified the open complexity of school environments. In this way, the 20 item 'productive pedagogies' in particular offered the profession multiple dimensions of practice to explore, rather than overclaiming the effects of one 'silver bullet' fix.

Secondly, the research team included a number of charismatic and high profile leaders, with diverse expertise who through numerous professional forums, **spoke directly to teachers**. Their commitment to include teachers in formative conversations meant that this dialogue was not diluted or filtered through layered bureaucratic communication. Teachers were treated as allies in, not subjects of, the reforms.

Thirdly, analysis by Claire Brown (Victoria University, Melbourne) highlights the enabling conjuncture of **key like-minded players** - a Premier, a key ministerial advisor, a Minister for Education and the Director General of the Department of Education at that time. However as 'policy makers come and

go' (Matters, 2006, p. 18), the political context changed and that synergistic nexus crumbled. Reliance on stable personnel is a common story around any innovation strategy or policy implementation.

Fourthly, the research design **built on previous models of similarly high quality research**, and set up the capacity for the studies to be compared. In this way, it contributed to increasingly sophisticated knowledge-building about schooling, while empirically embedded in the local context.

In terms of external conditions, Claire Brown argues that Queensland's political history helps explain the thirst for renewal that primed a large state system and its teaching profession for reform, making investment on this scale thinkable and doable. From 1968 to 1987, Queensland had a notoriously conservative and ultimately corrupt National Party government under Premier Bjelke-Petersen resulting in a moribund education system poorly equipped for the changing times. Subsequent governments, both Liberal and Labor, set about an overdue process of renewal. After some brief changes, a Labor government was elected in 1998, just after the QSRLS had been commissioned. This started an extended period of Labor government, under Peter Beattie till 2007, then Anna Bligh until 2012. This longevity provided a degree of **continuity** and protection from short-term political interests that allowed the New Basics project's rolling agenda to mature.

For broader conversations about research 'impact', the tension between research paradigms/ assumptions informing a project in the interdisciplinary, normative space of education and those informing any evaluation thereof warrants more exploration. The desire for standardised measures and meta-analyses seeks ways to reduce complexity to numbers, but much of the 'impact' on context, relations, culture and process is lost in the process:

> Limited data has been allowed to count as evidence, with an overreliance on test and examination scores as a principal indicator of system efficacy, and classical experimental design models as the sole model for the selection and implementation of reform (Luke, Freebody, Shun & Gopinathan, 2005, p. 12)

Potentially valuable innovations may be ruled out by restricting validated 'outcomes' to this limited palette, one that fits engineering and medical science better than education. Lingard (2009, p. 15) warns of the 'implicit danger of measuring what is easy to measure, rather than what is significant in terms of educational quality'.

While research projects may seek to be agnostic in documenting 'what works', their uptake in educational policy and practice will still be exposed to shifting political winds. What emerges as 'impact' will be filtered by what is politically palatable at the time. Mills and McGregor reflect on the series of changes in Queensland at the time and since, to offer the following advice: 'work with those who have expertise in education; depoliticise educational decisions and provide sufficient time for reforms to become embedded before embarking on new initiatives aligned with a new administrative era' (Mills & McGregor, 2016, p. 115).

The project in the educational ecology

The core ethics underpinning the case study (equity, teacher ownership, and alignment) have since been displaced somewhat in Queensland's educational ecosystem. Instead, performance targets under national standardised 'NAPLAN' testing and concerns about international benchmarking on PISA and TIMSS results have come to dominate school reform and policy efforts to raise standards (Thompson, Sellar, & Lingard, 2016). These managerial modes of systemic reporting impact on both pedagogy and curriculum, and shape what counts in assessment. The Australian Curriculum also

took a neo-conservative turn under the current Liberal Federal government following a review in 2014, privileging a 'back the basics' discourse which ironically relegated the future-oriented curriculum conceptualised and trialled in the New Basics project to the past. Nevertheless, the research and trial continue to inform systems elsewhere.

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References

Ainley, J. (2004). *Evaluation Report of the New Basics Research Program*. Brisbane: Australian Council for Educational Research. Retrieved from http://pandora.nla.gov.au/pan/75290/20071113-1615/education.qld.gov.au/corporate/newbasics/pdfs/exteval.pdf.

Amosa, W., Ladwig, J., Griffiths, T., & Gore, J. (2007). *Equity effects of Quality Teaching: Closing the gap*. Paper presented at the AARE Annual Conference, Fremantle. http://www.aare.edu.au/publications-database.php/5296/equity-effects-of-quality-teaching-closing-the-gap

Education Queensland. (2000). *New Basics Project technical paper*. Brisbane: Queensland Department of Education. Retrieved from https://works.bepress.com/gabrielle_matters/31/.

Harrison, N., & Seddon, T. (2013). Living in a 2.2 world: from mapping to strategic capacity building for Australian educational research. *The Australian Educational Researcher, 40*(4), 403-413.

Hayes, D., Mills, M., Christie, P., & Lingard, B. (2006). *Teachers and schooling making a difference.* Sydney: Allen & Unwin.

Keating, J., & Klatt, M. (2013). Australian concurrent federalism and its implications for the Gonski Review. *Journal of Education Policy, 28*(4), 411-426.

Ladwig, J. (2007). Modelling pedagogy in Australian school reform. *Pedagogies: An international journal, 2*(2), 57-76.

Lingard, B. (2007). Pedagogies of indifference. *International Journal of Inclusive Education, 11*, 245-266.

Lingard, B. (2009). Testing times: the need for new intelligent accountabilities for schooling. *QTU Professional Magazine*(November), 13-19.

Lingard, B., Hayes, D., Mills, M., & Christie, P. (2003). *Leading learning: Making hope practical in schools* Buckingham: Open University Press.

Lingard, B., & McGregor, G. (2014). Two contrasting Australian curriculum responses to globalisation: What students should learn or become. *The Curriculum Journal, 25*(1), 90-110.

Luke, A., Freebody, P., Cazden, C., & Lin, A. (2007). Singapore pedagogy coding scheme (2004) (revised ed.). Singapore: Centre for Research in Pedagogy and Practice

Luke, A., Freebody, P., Shun, L., & Gopinathan, S. (2005). Towards research-based innovation and reform: Singapore schooling in transition. *Asia Pacific Journal of Education, 25*(1), 5-28.

Matters, G. (2006). Good data, bad news, good policy making ... . *QTU Professional Magazine*(October), 18-24.

Mills, M., & McGregor, G. (2016). Learning not borrowing from the Queensland education system: lessons on curricular, pedagogical and assesment reform. *The Curriculum Journal, 27*(1), 113-133.

Newmann, F., & Associates. (1996). *Authentic achievement: Restructuring schools for intellectual quality*. San Francisco: Josey-Bass

Professional Support and Curriculum Directorate. (2003). *Quality teaching in NSW public schools: Discussion paper*. Sydney: State of NSW New South Wales Department of Education and Training Retrieved from http://www.darcymoore.net/wp-content/uploads/2012/02/qt_EPSColor.pdf.

School of Education. (2001). School Reform Longitudinal Study: Final report (Vol. 1). Brisbane: University of Queensland.

Thompson, G., Sellar, S., & Lingard, B. (2016). The life of data: Evolving national testing. In B. Lingard, G. Thompson & S. Sellar (Eds.), *National testing in schools: An Australian assessment*. London and New York: Routledge.