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**The Routledge Doctoral Student's Companion: Getting to grips
with research in Education and the Social Sciences**

**When qualitative meets quantitative: Conversations about the
nature of knowledge**

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We write as supervisor and candidate who have learned much from each other and much together in the years that it has taken to produce the doctoral study: *Digital kids, analogue students: A mixed methods study of students' engagement with a Web 2.0 learning innovation in a high-performing school* (Tan 2009). Our approach to generating this chapter is to present our shared understandings as unboxed text, and to mark our differences by using boxed dialogic texts that are dispersed throughout the chapter. In this way, we both acknowledge and draw on our very different research backgrounds, spanning – as they do – the gamut from meticulous measurement to elusive eroticism.

Box 3.1

Erica: I already have a problem with what we have written in the second sentence. The idea that erotics and measurement should sit at opposite ends of an epistemological continuum belies the extent to which arithmetic calculation and eros are closely associated historically. In the film *The Piano*, for instance, the calculation of the size of a hole in the heroine's stocking (the 'size' of the seductiveness) in terms of the number of keys to be 'surrendered' on the piano keyboard, was very important to the erotic unfolding of the pivotal relationship. There are reminders of this in Jane Gallop's (1982) cheeky provocation to educators: 'It does not seem inappropriate that an arithmetic perversion should arise in a discussion of pedagogy... I suppose not all teachers experience as I do a diffuse yet unmistakable pleasure when calculating grades at the end of a term' (p. 128). Of course, it is much easier to expunge eros altogether in educational research – troublesome ethically and impossible to calculate.

Jen: The proposition that erotics and measurement should not sit as binary opposites on a linear continuum is intellectually seductive and compelling, especially when the argument is presented so eloquently by the scholar. While I am enthused by this argument and appreciate its value for challenging taken-for-granted, even 'commonsensical' epistemological assumptions, my primary response is:

'So what does this mean? It is definitely a compelling argument, but is there any empirical evidence to substantiate what would otherwise remain as an unwarranted claim? If evidence is wanting, then how can we best (i) translate the proposition into testable hypotheses, (ii) operationalise key concepts in the hypotheses into measurable constructs, (iii) apply an effective research design (preferably the "quintessential" true experimental design), (iv) develop appropriate sampling and data collection procedures, preferably random and $N > 200$, so that we can (v) conduct rigorous statistical analysis of the data, preferably using the "definitive" causal modelling technique to achieve the highest levels of confidence in reliability and validity?'

These thoughts tend to come in quick succession of one another, albeit rather ironically, in a sequential linear fashion. It would not come as a surprise if many doctoral students, particularly those well-schooled in the 'dogmas' of scientific/

empirical research during their undergraduate and postgraduate years, share this almost ‘programmed’ response – put most crudely, this refuge in the ‘rigour of numbers’. While there is little doubt that this intrinsic trust in ‘hard’ numbers can and has been misplaced and misused, a hasty disregard for the merit of well-conceptualised and well-executed measurement is equally regrettable.

We come from different countries with different pedagogical cultures. Our food preferences are different. Our linguistic capacities are different, although we do have in common the English language.

It is one thing to speak of celebrating all this difference in some flabby romantic way. It is quite another to optimise its usefulness for knowledge production. When the rubber of cultural difference meets the road of doctoral supervision, the journey can be much more demanding than any starry-eyed rendering of an East-meets-West, quant.-meets-qual., young-meets-old, pedagogical narrative might suggest. The potential riches of the cross-cultural meetings can too easily collapse into a push and pull around research trajectory, methodology, and intellectual property, a tug-of-war that the supervisor is most likely to win given her place in the institutional hierarchy. Once this happens, compliance rules, and the value-add that cultural difference could make becomes flattened and meaningless. All this can occur with never a cross or angry word, never a disagreement, never a sign of interpersonal struggle. It may still be that a thesis is written, passes examination, and a doctorate is achieved. So there is no evidence of a problem – nothing seems to be lost.

We would argue that something is lost in such a doctoral journey, and that is the extent to which supervisor and candidate can both develop a capacity for greater epistemological agility as a result of their intellectual, disciplinary and cultural differences.

Box 3.2

Jen: When I embarked on my doctorate candidature, my aspirations were twofold. First, I wanted to capitalize on and refine existing knowledge and skills in my foundational discipline (business) and quantitative research, which were acquired through my undergraduate honours and postgraduate research degrees. Second, I wanted to acquire knowledge in a new discipline (education) and expand my repertoire of research skills to encompass qualitative modes of ‘thinking about’ and ‘doing’ research. As a result, I sought out one of the most highly regarded and well-published scholars in the faculty. Erica was then the Assistant Dean Research of the Education Faculty with an exceptional publication record, in terms of both quantity and quality. There was only one small problem. Her expertise lies in social and cultural theory. She was erudite in schools of thought labelled with a ‘post’ prefix (postmodernism,

poststructuralism, among others), a master of well-crafted arguments often supported by qualitative data, if any at all. I was extremely excited when Erica agreed to supervise my doctoral thesis, but was also aware that this was a big risk. Would it be possible to bridge our disciplinary, epistemological and methodological differences, so that we could reap the personal and intellectual fruits of productive diversity?

Erica: Big girls are not supposed to be afraid of numbers. But it was daunting being a supervisor of a doctoral student with advanced skills in quantitative methodology and a capacity to use digital tools in a way that I just could never emulate. I recalled my singularly unpleasant experiences as a Stats 101 student and realised that I had missed an opportunity to round out my understanding of methodology by coming to grips with measurement as a valuable means of enquiry. My scholarly critiques of ‘white coat’ objectivism had allowed me to step around the judicious use of quantitative enquiry and I came to regret that gap in my knowledge, however much I was able to generate publications about the nature of knowledge and its politicisation. This is not written as a confessional, but a simple acknowledgement that critique is a very useful means for maintaining blind spots in our learning. As a supervisor, I was made aware, through Jen’s expertise and ease with statistical calculation, that I lacked some quite precise skills that would have made me a better researcher, and I have been seeking to learn more about quantitative enquiry, at least enough to be able to ‘read’ its findings intelligently. The work that Jen has done has given me an opportunity to do this new learning.

We note with interest the recent work of John Elliott and Ching-tien Tsai (2008) in exploring and exploiting concepts of education and learning emanating from Confucian scholarship and from recent Western thinking such as that of Lawrence Stenhouse. They argue the importance of ‘more dialogue with East Asian educators who are engaged with versions of educational action research that have been shaped by Confucian culture’ (p. 569) in the development of new paradigms of educational enquiry.

Although we strongly endorse the move to genuine educational dialogue of this sort, it would be misleading to suggest that the nature of the doctoral research in which we have both been closely involved has been ‘cross-cultural’ in this sense. In fact, it has been predominantly Western in its conception and its methodology. Yet, in some senses, the space between the imperative to measure and the imperative to interpret can also be understood as a cultural gap, with borders that are not easily negotiated, despite the ease with which the term ‘multi-method’ rolls off the tongue. It is not a matter of having a bit of ‘quant.’ And a bit of ‘qual.’. For any measurement and interpretation to be mutually informative, scholarly and useful, a great deal of ‘thinking about thinking’ is involved, and this in turn means ongoing conversations about the nature of knowledge.

Box 3.3

Erica: It is an exciting and somewhat daunting time for me as an academic and supervisor of educational research. I am now living and working in the country where Jen was born, grew up and was educated – Singapore. Jen now lives where I was born, grew up and was educated – Brisbane, Australia. This cultural ‘cross-over’ has provided me with more learning opportunities than I expected – or indeed looked for – late in my career. I am experiencing the discomfort of not knowing much that is of local importance, both within a new university and a new country. I need to be ‘usefully ignorant’ in Charlie Leadbeater’s (2000) terms, to be productive in this context; Jen has prepared me for this to some extent by gently seeking to dispel certain cultural myths and stereotypes about Singapore and its people. She also gave me entrée to some of the nuances of Chinese culture when we went to Beijing together in mid-2007. I was there to present an address to the CHITEC Conference, but there she was the teacher and I the learner.

Jen: I experience little discomfort in the Asian context, but I was certainly not prepared for the level of discomfort that came with my opportunity to learn about different epistemologies. In early consultations, I struggled intensely with being supervised. I often left the meetings feeling intensely confused and deeply frustrated that I was not progressing as quickly or ‘easily’ as I should be, but these came hand in hand with an unmistakable sense of intellectual pleasure and excitement that I was ‘onto’ something good. Six months into the programme, I made a conscious decision to ‘let go’ of my existing knowledge and corresponding modes of thinking, at least in the meetings or for a certain period of time before coming back to them with new eyes. I realised that it was my research background and competencies, rather than my lack thereof that were the stumbling blocks of my progress. In Erica’s terms, I learnt to unlearn (McWilliam 2005). I also learned to be ‘usefully ignorant’, that is, to temporarily suspend entrenched epistemological and disciplinary knowledge, so that my mind and the doctoral meetings could become authentic spaces of pedagogical possibilities.

Extended and ongoing conversations about the nature of knowledge ought to be commonplace in doctoral programmes. However, it would seem that such dialogic work is less common than we might suppose. Of all the possible reasons for this in the field of social science, three come most readily to mind.

The first is the propensity of the supervisor to direct the study towards a methodological domain with which they are most familiar and feel most expert. This is understandable – after all, doctoral candidates are unlikely to welcome a doctoral experience akin to ‘the blind

leading the blind’, and may be only too willing to be taken by the hand in this way. A new candidate may well see methodology as something akin to snake oil, a mysterious but potent brew of techniques that only the supervisor knows how to apply. It is eminently reasonable that any supervisor should lay claim to at least some methodological expertise, and would therefore be a willing participant in inducting a candidate into that same domain.

Box 3.4

Jen: It was indeed tempting to get over the planning stage of the doctoral project quickly, so that I could move on to the implementation stage, to collect, analyse and report on the data. With my background in quantitative research, it would not have been too difficult to plan and execute a research project in my area of interest that was predominantly quantitative or ‘hard quant.’, complemented by some ‘light qual.’. This would ensure that the study would score brownie points of being classified as ‘mixed-methods’, but not run the risk of being paradigmatically incompatible. Also, I had a good grasp of the existing literature and concepts in the field of innovation diffusion in the business disciplines, and it was tempting to recycle these concepts in the education field. This was further compounded by pressures to perform academically, and, as indicated above, ‘speed’ in completing the doctorate was definitely a performance indicator. I was, however, not quite prepared to forego the pleasure and pain of learning to ‘think about thinking about research’ (McWilliam 2006). I wanted to attempt a study that was both ‘hard quant.’ and ‘hard qual.’. I relished the opportunity to engage in a ‘serious play’ of ideas – to hold large numbers of associations together in the mind, and imagine the interesting possibilities that arise from making novel associations – that is, to be cognitively playful (Tan and McWilliam 2008). I was certain that ‘rushing to the field’ with a view to achieving ‘easy success’ would be neither intellectually nor professionally rewarding in the long term. Under Erica’s experienced tutelage, we were able to ensure both the timely progress of the candidature, as well as a high quality of scholarly engagement and outcomes from the doctoral dissertation.

Erica: I have very much enjoyed being part of the theoretical and methodological work done in feminism and poststructuralism, and literary criticism to invite educational researchers to ‘trouble clarity’ (Lather 1996) by playing seriously with modes of enquiry. I was fortunate to be completing my own doctorate in the early 1990s at a time when methodology was becoming a hotly contested topic in the large professional association conferences, and when there was a momentum emanating from Lather, Britzman, Ellsworth, and other scholars to understand the importance of making educational research more unintelligible to itself. They were heady times, and it is only recently that Alison Lee, Maggie Maclure and I discovered at a British Educational Research Association meeting how much excitement this era gave us in our scholarly formation. It is epistemological excitement that many doctoral

candidates miss out on now. The doctoral students who came to our session, called 'The Desire for Discourse Analysis', made this patently clear during and after the symposium.

Second, in days when doctoral completion is itself calculated in terms of cost to the institution, being in a doctoral programme means getting down to the business of 'doing it' fast. The area of interest must be translated into a do-able research problem, rendered in an appropriate theoretical language. In so doing, one can often find that the aims and parameters of the project are far too ambitious, and a piece of a piece of the original idea is agreed and 'written up' as a bound study. In many doctoral programmes, the administrative requirements for ensuring that this is happening and that the candidate is 'moving forward' can all too readily overwhelm the intellectual requirements of the project, so that the attentional economy of both candidate and the supervisor end up being driven by considerations of what the next 'stage' requirements are: a confirmation document, a report, an evaluation sheet, a seminar presentation, a mandated generic coursework component. Put another way, events can come to matter more than thoughtful engagement.

Third, the social sciences seem to be particularly bedevilled by an unseemly rush to the field, in the expectation that 'findings' are sitting neatly out there waiting to be found. Lather (1998) argues that this apparent movement away from scientific thought in education is an outcome of the growing demand that educational research be 'centred by such concepts as "empathy", "voice" and "authenticity"' (p. 1). The problem that she perceives arising out of this demand is one that has also been identified by Tom Popkewitz (1997) and Deborah Britzman (1997) in recent times – namely, the 'wish for heroism' on the part of the researcher, a wish that is accompanied, problematically, by the presupposition of the researcher as 'a coherent subject... in charge of their desires and identifications', one who 'speaks for themselves' and is 'capable of knowing others' (Lather 1998: 1). In drawing attention to the 'typical investments and categories of ethnography' that accompany enquiry as a redemptive project, these three authors make trouble for any ethnographic research that responds to 'the demand for voice and situatedness' (Britzman 1997: 31).

The idea that the field itself is constituted in and through the performance of an enquiry is an annoying one because it troubles the 'blissful clarity' that Barthes (1975) speaks of that is so seductive to the knowledge worker. The 'good intentions' of many doctoral candidates in the social sciences adds impetus to this rush to the field – the pleasure of being out there 'really doing it' rather than 'just talking about it'. Of course, this is another binary that we could all do without. We have more powerful supervisor/candidate conversations if it were understood that such conversations constitute what becomes recognisable as 'the field'. It is so easy to 'see' evidence of low self-esteem, for example, or of 'bullying', when one is convinced not only that it is 'out there' but also that it is multiplying at an alarming rate. Steven Ward's paper, 'Filling the World with Self-Esteem: A social history of truth-making'

(1986) is a cogent account of the mechanisms at work producing the clarity with which we come to see evidence of a sad lack or a problematic proliferation. It is not that ‘positive change’ should be off the agenda for educational researchers; it is perhaps that we might well look to Anna Freud’s dictum to ‘do the least harm’ as a moral-ethical standpoint of enquiry.

It needs to be stated quite bluntly here that the blissful clarity of the researcher who already knows ‘what is out there’ and wants to show it to the world in order to remediate it, is responsible for the sort of research that finds out the educational equivalent of ‘men with long legs tend to have longer trousers’, for example, that children with high self-esteem tend to have more positive self-talk. Meanwhile, more complex and paradoxical matters, such as the problem of integrating digital technologies into mainstream schooling in any comprehensive way, continue to be under-researched and under-theorised (see Warschauer 2008). One-shot surveys and/or one-shot interviews cannot of themselves tell us what we need to know when it comes to educational paradoxes. The fact that teachers and students both welcome *and* under use digital technology is a paradox, not amenable to explanation simply by blaming teachers’ lack of familiarity with technology as Tan’s doctoral research study has found (see Tan 2009; Tan and McWilliam 2009).

Box 3.5

Erica: My first question to a prospective candidate is usually ‘What are you curious about?. I am interested in whether they are positioning themselves first and foremost as advocates or as investigators. Jen was curious about many things, one of which was to understand what was going on with digital tools in schools, and how to find it out without a well-formed conspiracy theory (i.e. teacher deficits) to explain it. She did not think that either measurement or interpretation alone would tell her all that she wanted to know, so began to consider how quantitative and qualitative methods might be brought together in ways that allowed each to inform the other, rather than having one as ‘garnish’ to the other. Jen was a rarity in doctoral education, as a candidate with strong quantitative credentials who could readily have done a thoroughly number-crunching study but chose to broaden her understanding of how knowledge about enquiry works. My lack of any deep understanding of statistical analysis was no barrier to her, although I certainly felt that I could not provide scholarly feedback on specific matter pertaining to her experimental design. This meant extending the expertise available to her, and she was very proactive in seeking out that expertise. Put simply, she did not need me to know everything about method.

Jen: What I did need, however, was a supervisor that had not yet retired from learning. I did not need a supervisor who had amassed extensive disciplinary and methodological knowledge over the years and was most comfortable remaining in that zone of expertise. I needed a supervisor who was accomplished in her field of

expertise and knowledgeable about the meta-requirements of what constitutes a successful PhD dissertation, but most importantly, possessed good dose of epistemological agility and methodological generosity. Erica wielded her ‘carrot-shaped stick’ in our supervisor/student partnership with commendable adroitness. She was keen to share her knowledge but not at all interested in moulding me into ‘mini-E’. She was supportive of my exploration, excited when we hit fertile intellectual soil, and always guided me back to higher ground with a firm hand on occasions when I got entrapped in cerebral quicksand. In this regard, she too was a rarity in doctoral supervision.

To think about combining measurement and interpretation is to begin to think about what counts as knowledge production and how it works. It means beginning to question how something comes to go without saying, how one becomes convinced that something is ‘out there’ or that it does not exist. It trusting in Western tools, we trust their power to let us ‘see’ what is ‘out there’, where Buddhist monks might distrust the same tools because they distrust the imperfections of their own senses, and what they perceive using their senses. It is not that we need to engage with Buddhism or any other religion to think deeply about what and how we see as researchers. The point is that radical doubt or skepticism about our tools and what they may or may not deliver is a better start than certainty about their efficacy.

We need to bring that same skepticism to what we can extrapolate about research trends. For example, if there is a ‘trend’ to larger number of studies focusing on bullying among young people, it is important to imagine that this could arise from (a) more moral panics around bullying, so (b) more funding going to bullying projects and/or (c) more things coming to count as bullying or (d) a self-perpetuating culture of bullying studies, not necessarily that (e) more young people are actually being bullied. Indeed, it could be that there is less deeply troubling peer-to-peer mental and physical cruelty at the same time that we are coming to find it everywhere. This means that we need to think about the limitations of both objective and subjective tools in providing us with the power to ‘see’ what lay others cannot.

Box 3.6

Jen: The countless conversations about the nature of knowledge that I have had the pleasure of sharing with Erica throughout my doctoral candidature have solidified my desire to interrogate complexity, rather than flatten paradoxes. I am motivated to make ongoing contributions to the field of research and doctoral education by resisting the colonisation of ‘findings’ that comes with an imperialistic application of particular dominant ‘methodologies’. Rather I aim to build an increasingly eclectic combination

of 'quality research tools' – an aromatic blend of epistemological deftness, methodological dexterity and cultural agility that I can bring to any new and worthwhile enquiry. In this way, I hope to press through the replication of old answers to new questions, and uncover some new explanations to old questions yet unanswered.

Erica: It is clear to me that supervision can be a delight but it is never an unmitigated delight. There is struggle and contestation, and this is not something from which to save a candidate, nor is it something that can be trotted out as an excuse for supervisors to go missing in action. The experience of supervision has been deeply pleasurable for the fact that Jen and I have had an unbroken journey together, and both of us have laughed a lot as well as learning a lot. I have watched while Jen has, in the words of the great Oscar Wilde, spent the morning putting in a comma and the afternoon taking it out again. I have needed patience when tasks that are simple to me are a struggle for her. She has needed patience with me for the same reasons. We have come to work well together as co-authors, able to complement each other's strengths because we now share a platform of understanding and of pleasure in what each of us brings to building and sustaining that platform.

Pursuit of these new ways of seeing has involved us in breaking new research ground and working with colleagues to publish our original research in scholarly collections such as this one, and also in conference papers and refereed journals (see, for example, McWilliam *et al.* 2008; McWilliam, Dawson and Tan 2009; Tan and McWilliam 2009). Importantly for our shared research future, as supervisor and candidate, we are now sharing first author status and the related responsibility for crafting our shared scholarly work. Simply put, we have both learned how to lead and to follow.

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