Introduction
Designing Educational Researchers: Principles generating research training curriculum

Parlo Singh

Introduction
Many academic staff working in Education Faculties have implicit or tacit knowledge about higher degree research (HDR) pedagogic work. Generally, this knowledge has been acquired on-the-job, that is, during the process of working on their own doctoral studies. Moreover, and particularly in disciplines such as humanities and the social sciences, knowledge of HDR pedagogic work has been acquired via the privatised supervisor-student relationship. However, the privatised form of this pedagogic relation has meant that the principles of good teaching practices (pedagogical content knowledge) have rarely been made explicit or codified (Turner-Bisset, 1999). Such codification of HDR pedagogic knowledge would assist both the processes of acquisition and transmission. In other words, it would be both easier to learn or acquire HDR disciplinary knowledge, as well as teach others this knowledge, if it were codified or made explicit.

In a knowledge-based economy, universities constitute one of the few institutional sites with the capacity to provide foundational research training (see Considine, Marginson, Sheehan, & Kummick, 2001; Muller, 2000). Thus, universities increasingly play a unique role in distributing the privileged and privileging resources or capital (Bernstein, 2000; Bourdieu, 1997) associated with research skills and knowledge to an increasingly diverse cohort of students. In this context, knowledge that is outside the “unique, informal culture” (Ericson & Haggerty, 1997, p. 57) of academics’ traditional practice is required to constitute HDR pedagogic work. Since many of the students currently enrolled in doctoral studies may not undertake research in universities, HDR pedagogic work needs to be reconceptualised as training/education in generic research skills and knowledge that may be deployed in various knowledge industries. Apart from the traditional, privatised supervisor-student pedagogic relation, there are a number of pathways or routes by which students might gain access to research skills and knowledge. These pathways could include “the production of the thesis itself... specific research training, giving seminar presentations, writing for publication, and establishing academic networks” (Becher, cited in Deem & Brehony, 2000, p. 152).
This chapter is organised into two main sections. In the first section, a description is provided of the attempts of one institution, namely the Queensland University of Technology, to codify and make explicit HDR knowledge through a series of workshops and other training activities. In this section, HDR training is theorised as pedagogic work designed to minimise the risks of ‘unproductive separations’. The term ‘unproductive separations’ is used to refer to HDR candidates who fail to complete their dissertations, and/or transfer their candidature to another institution. The second section of the chapter presents an overview of the papers produced as part of a HDR training exercise and included in this edited collection.

**New universities in new times: A case study institution**

QUT was conferred university status in 1989 as part of a Federal government initiative to constitute a unified national system (UNS) of higher education institutions by removing the old binary system of research/teaching and teaching only institutions. In 1990, following QUT’s amalgamation with the Brisbane College of Advanced Education, staff in the Faculty of Education, QUT, who had previously only taught in preservice and inservice teacher education programs, were also expected to: (1) compete for nationally competitive research funding, (2) manage research projects, (3) publish research findings in refereed outlets, and (4) supervise HDR students. Moreover, this cohort of teacher educators was expected to compete in a research field in which many had little experience, and alongside colleagues who had a history of research work via their employment in the older research universities. Moreover, competition for resources in this altered research field escalated as the number of players increased (58 universities), but there was little substantive increase in Federal government funding (Moodle, 2002).

Despite its relatively recent entry into the game of educational research, the Faculty of Education, QUT has been described as one of the top ten Australian universities, each of which makes a “major contribution to internationally recognised educational research” (Phelan, Anderson, & Bourke, 2000, p. 614). Moreover, Phelan et al. (2000, p. 614) indicate that “three universities, Deakin University, The Queensland University of Technology, and The University of Western Sydney have emerged particularly strongly in recent years to become emergent leaders in the area of educational research”. Clearly the path to productivity for this Faculty has been both rapid and demanding.

Moreover, the conceptualisation of research in the Faculty of Education, QUT, is very much a product of this recent transition to university status. According to Kenway (forthcoming, p. 8): making a contribution through research to a body of knowledge has been an emergent view in university Education faculties as they evolved prior to, under and after the Dawkins reforms of 1988. This view is certainly strongly held in such “disciplines” as educational sociology and psychology. In such instances educational knowledge itself is understood as a “stakeholder”, which exists above and beyond the more fluid and fleeting investments of the profession and education systems. However, again, given the history of Education faculties, this focus on enhancing knowledge is not as strong as the view that concerns arising from experience and problems in practice should drive educational research.

**Parlo Singh**

Thus, HDR students in Education faculties most often come to postgraduate study “seeking a specialisation directed towards enhancement of their professional practice and possibly their career choices” (Kenway, forthcoming, p. 9). Hence most postgraduate programs are directed towards professional development rather than preparation for further research. In addition, the cohort of students who undertake HDR studies in Education Faculties are most likely to be enrolled “part-time, mature age, and typically established, mid-career education professionals” (Kenway, forthcoming, p. 9).

**Explicating pedagogical principles of HDR work**

What follows is a description of the knowledge and skills selected and organised within one research higher degree training exercise within the Faculty of Education, QUT. (Here see: http://education.qut.edu.au/pgconf/) It also includes an examination of the criteria used to evaluate the research knowledge and skills acquired by students through this training exercise. The claim is not that QUT, or indeed the Faculty of Education has a unique role in terms of organising postgraduate student conferences. Rather, the task is to document the curricular knowledge produced, disseminated and consumed by students through this training initiative. Specifically, this chapter documents the generative principles (sets of rules, ensemble of procedures) which guided this foray into constructing curricula and modes of pedagogy that would assist a large number of postgraduate students to acquire, as one student put it, “the finer details of academic discourse” (cf. Bourdieu, Passeron, & de Saint Martin, 1994).

Broadly, the Getting on the Conference Trail postgraduate training exercise was conducted over a period of seven months. It was specifically designed to minimise the risks associated with non-completions and slow completions of HDR studies in the Faculty of Education by providing students with skills in writing for conference presentation and publication. Many of the staff involved in the HDR training initiative wanted to shift postgraduate research teaching from the ‘trial and error’ or ‘hit or miss’ approach (an approach where some students get access to the privileged texts of academic discourse by chance, luck, or working the system) to a more systematic, explicit, and intensive mode of HDR pedagogic work. In the past, students who acquired HDR knowledge tended to come from privileged backgrounds and therefore already had the requisite social, intellectual and material capital (Bourdieu, 1997) to negotiate the university system and ensure that they attained the knowledge and skills to complete their dissertations. Given the substantial increase in the number and diversity of students completing HDR work, as well as the importance of research skills and knowledge to gaining meaningful employment in knowledge industries, staff were particularly concerned with developing explicit HDR training curricula.

In broad terms, the aim of the HDR training exercise was to shift the local, disciplinary-specific or ‘craft’ pedagogical knowledge of the individual academic supervisor into a wider institutional communication system (Müller, 2000). The selection and organisation of research training curricular was based on the assumption that a core component of HDR work is the development of analytically rigorous reading and writing
skills, that is, a particular mode of interrogation (Brown & Dowling, 1998). The conference organizers wanted to assist students, through a structured teaching/learning context, to acquire the mental and bodily dispositions or habitus to recognize what (content, form) constitutes a research paper, as well as produce and present such a paper (Bernstein, 2000; Bourdieu, 1992). Specifically, staff (led by this author) attempted to construct a teaching/learning milieu that supported and systematically guided students through the stages of writing a 5,000 word paper for presentation and publication on one aspect of their research work. Thus students had to learn to distinguish between the content and form of various academic discourses, namely conference research papers and papers for an edited book publication. In addition, students were expected to distinguish between the different types of discourses within the broad category of postgraduate research papers, namely, literature review, theoretical paper, and analytic reportage of data. Significantly, the research paper had to be publicly presented and therefore defended, as well as subjected to a rigorous review process. Thus the team of academics involved in the HDR training exercise designed a teaching/learning context to assist students develop the skills of critically assessing reviewers’ comments. Moreover, students were guided in the process of rewriting their papers, taking into account the reviewers’ comments.

In general terms, the acquisition of research knowledge was conceptualized as entailing an accumulation of a labour of self-formation, a labour of inculcation and transformation through a long process of pedagogic socialization (Bernstein, 2000; Bourdieu, 1992). Specifically, the focus was on three forms of research pedagogical knowledge or resources that students needed to learn or acquire, namely, procedural, propositional and dispositional knowledge (Billett, 1993; Billett & Rose, 1996). These different types of knowledge are depicted in the following table (see also Singh, Beat & Dooley, 1999):

<table>
<thead>
<tr>
<th>Knowledge Type</th>
<th>Descriptor</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedural knowledge</td>
<td>Techniques, skills, and ability to secure goals – both general and specific</td>
<td>Technique of writing an opening paragraph for a conference paper, thesis chapter Knowledge that is readily available for codification.</td>
</tr>
<tr>
<td>Propositional knowledge</td>
<td>Facts, assertions, concepts, propositions</td>
<td>Developing theoretical tools from the literature review. Applying these tools to analysis of data. Knowledge that can be codified and made explicit.</td>
</tr>
<tr>
<td>Dispositional knowledge</td>
<td>Attributes and values associated with becoming a researcher</td>
<td>Writing each day, drafting and redrafting, editing. Embodied knowledge, tacit, implicit</td>
</tr>
</tbody>
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Table 1: Categories of Research Pedagogical Knowledge

In the HDR training exercise, the emphasis was on gradually moving students from the stage of non-publisher to novice publisher of research work. Students were thus provided with one-on-one and group learning activities focused on the development and refinement of research writing skills. The group learning activities included a series of four research training workshops:
- Writing a Paper Abstract and/or Proposal
- The Paper Review Process
- Writing Workshop on Draft Full Paper
- Effective Conference Presentation Skills

A virtual learning milieu was also constructed for those participants who could not access the workshops. Thus, materials presented at the workshops were made available to all students via posting on the conference web-page. In addition, a Designing Researcher Group was organized by staff and students to discuss theoretical and methodological issues of HDR work. This group met on a monthly basis. Students also took the initiative of setting up their own informal support networks in order to read and comment on papers and/or to trial conference paper presentations. A crucial feature of the project was that a retired academic, who had extensive experience with successful HDR supervision, was employed as an academic adviser for the duration of the training initiative to assist students in the drafting, writing, and re-writing of papers. Students were encouraged to submit a draft of their paper for feedback one week prior to the Writing Workshop on Draft Full Paper. Many students received comments on their draft paper from their supervisors, the academic adviser, and at times the Director of a respective Research Centre. At the Writing Workshop on Draft Full Paper, students were taught some generic principles of academic writing. They were then encouraged to work in pairs and provide critical constructive feedback on each others’ work. Students were encouraged to attend to the feedback on their draft paper before the conference presentation. At the Effective Conference Presentation Skills workshop, students were encouraged to rewrite their paper for oral presentation. Explicit instruction was provided in the design of resources or aids to accompany the paper presentation (overhead transparencies, power-point slides). In addition, key points about media presentations were elaborated. For example, the principles of the MBE, namely present a message (Message), explain why it is important (Because), give a concrete illustration (Example) were discussed with the students at the workshop.

Students were again encouraged to re-write their paper using feedback from the conference presentation sessions, and submit for publication in an edited book collection. All papers were sent to two reviewers. Students were encouraged to seek the assistance of their supervisor(s) and the academic adviser in terms of interpreting the reviewers’ comments. Finally, students were expected to submit their revised paper for publication with an accompanying letter detailing how they had addressed the reviewers’ comments. In addition to the teaching/learning activities organized by the group of academics involved in the HDR training exercise, some students established collegial peer sessions, such as a writing symposium and a preliminary conference presentation session.
The pedagogic activities documented above attempted to follow the four phases of the guided on-the-job model of learning, namely, modelling, coaching, scaffolding and fading (Billet, 1993; Billet & Rose, 1996):

<table>
<thead>
<tr>
<th>Modelling</th>
<th>Coaching</th>
<th>Scaffolding</th>
<th>Fading</th>
</tr>
</thead>
</table>

**Figure 1: The guided model of learning on-the-job.**

Tasks in each of these phases were defined as follows:

**Modelling:** workshop leader explicates the knowledge required to execute and accomplish a task such as writing a conference paper.

**Coaching:** supervisor(s), academic adviser, peer support group provide regular feedback while the learner performs the task. The feedback may consist of repeated demonstrations of the task and verbal explanations.

**Scaffolding:** refers to the support provided to learners, but at a greater distance than available at the stage of coaching. This support may take the form of assistance with interpreting reviewers’ comments on paper. At this stage, the expert accurately assesses the learner’s current skill level, as well as the optimum or maximum skill level that the learner can attain in a training session. Learning materials or opportunities are provided to maximise knowledge development.

**Fading** refers to the gradual removal of support from the learner. By the end of the HDR training exercise some of the students were in a position to write and submit papers for publication elsewhere autonomously.

This is not meant to imply that all of the workshops ran smoothly, or that the construction of each workshop did not involve negotiation of different research agendas/ perspectives between various discipline specific interest groups within the Faculty. Such is the diversity of research within Education Faculty that struggles over what skills/knowledge should be selected for a HDR training initiative, and how these skills/knowledge should be taught and evaluated, are inevitable. However, in the context of state imperatives questioning the “wastage of public and private resources” (DETYA, 1999) in relation to non-completions and slow-completions of HDR work, concerted efforts were made to work across these differences and teach generic research skills/knowledge associated with the production of academic discourses.

At the time of this postgraduate training exercise, 162 students were enrolled in doctoral studies (PhD and Education Doctorate) in the Faculty of Education, QUT (Pivot Tables, http://www/qut.edu.au/chan/pr/data/pivot/pv01.htm). Out of this cohort of students, 32 submitted a conference paper abstract; 29 actually presented a conference paper; and 22 papers were accepted for publication. It should also be noted that 75 people registered and attended the postgraduate student conference day (47 students, 25 staff, and 3 guests). Moreover, a number of the student attendees indicated their willingness to participate more actively in a HDR training exercise in the following year. In addition, at the time of writing this chapter, three students stated that they had relevant articles accepted elsewhere, and mentioned that the pedagogic work of the HDR training exercise had “helped significantly” in this publication process.

Feedback from the students indicated that they had acquired a number of academic skills through this specific HDR training exercise. Some of the students’ comments are captured below:

- the discipline of writing to a strict word limit and speaking in a limited time
- forced me to articulate my study
- made my thinking logical
- challenged to write, produce a paper
- fine-tuning ideas
- opportunity for post-grads to express themselves and develop their respective academic portfolios
- the development of collegiality, informal conversations and networks that are proving to be very valuable — in that they encourage a sense of connectedness that I didn’t think existed before
- tightening up some of my writing skills and has helped me clarify some aspects of my study
- intellectual rigour, the art of academic writing, perseverance and tenacity as well as collegiality.

At the same time however, much of this academic skill development continued to happen on a one-to-one basis, either with the supervisor and/or the academic adviser employed for the duration of the HDR training exercise. Attendance at the workshops varied from 10 to 20 participants, with the most common reason given by students for non-attendance being “work commitments.”

So what was new about the Getting on the Conference Trail postgraduate training exercise? In the words of one of the participants, the training exercise constituted “a shift in the research culture.” What then was the nature or form of this shift? It is possible to see the ‘shift’ as moving postgraduate training from the private, individualistic, tutorial-based pedagogic mode (behind closed doors), to an explicit skill and knowledge building approach enacted in the form of a series of workshops, peer group meetings, and individualised tuition on drafts of written work. Research supervision was recognised as a collaborative and intensive mode of teaching, “not as a private activity between two consenting adults” (Deem & Brehony, 2000, p. 150).

**Writing papers for public presentation and publication**

Researchers at various stages of their research apprenticeship have contributed to the collection of papers in this book. For example, some of the researchers are just commencing their doctoral studies and therefore have undertaken a critical review of the literature. Others are mid-way through their HDR studies and therefore reporting on preliminary data analyses. Then there is another category of researchers who have finished their doctoral studies and commenced postdoctoral work or other research projects. Researchers in the last category have taken the opportunity to either reflect
on the effectiveness of the research instruments used in their respective studies, and/or report on a component of an empirical study. Many of the contributors to this collection do not fit neatly into a single category and ought to be considered under two or more categories. However, for organisational purposes all the papers have been placed into four broad categories, namely, teacher knowledge, learning communities, social management issues, and research methods. Below is a brief introduction to each of the papers included in the edited collection.

Part one: Teacher knowledge

The papers in this section all deal with the types of knowledge required by teachers in a ‘knowledge’ society, that is, a society in which the dominant modes of production, distribution, and consumption are based on knowledge and information (Castells, 2000). Issues pertaining to the diverse categories of knowledge required by teachers — in specialist subjects (Ballantyne), when managing and teaching diverse cohorts of students (Doherty; Hart), and when working offshore (Exley) — are explored in various papers. Furthermore, the types of knowledge that may be selected for teacher professional development sessions are explored in two papers (Black; Crosswell & Elliott), while a third paper examines the unique forms of knowledge enacted in the pedagogic relation between fashion model and teenage girls (Draper).

Diverse Categories of Teacher Knowledge

In the first chapter, Julie Ballantyne an early-career music teacher herself, reports on her pre-confirmation doctoral research work (Centre for Professional Practice in Leadership, Education and Training, QUT). In the larger doctoral study, Ballantyne intends to examine “the preservice music teacher education programs in Queensland from the perspectives of early-career teachers who are teaching classroom music in secondary schools” (Chap. 1). In this chapter, Ballantyne undertakes a critical review of literature on preservice music teacher education. On the basis of this review, and piloting empirical data, Ballantyne suggests that music teachers do not receive adequate preparation in the pedagogical knowledge domain of their specialist subject. Consequently, when they begin work as music teachers they are likely to experience “practice shock” (Chap. 1).

For some time now, the export of Australian education has been ‘big business’ earning in excess of A$3 billion annually. Understanding the pedagogical component of this business is the focus of the analytic inquiries undertaken in Chapters Two and Three. In Chapter Two, Catherine Doherty, currently working as a Senior Research Assistant (Centre for Language, Literacy and Diversity, QUT), analyses teacher interview data on curriculum and pedagogy for international students at one Australian university. Specifically, Doherty analyses the interview accounts of two teachers working at the ‘crossing’ of the Australian higher education export industry, namely, teachers working in intensive English language courses (English for Academic Purposes) and Foundation Studies programs. The significance of the study is clearly stated. Teachers “implicit assumptions, constructions or theories of the international student” are likely to “constitute particular models of the learner, and of teacher-learner relationships” which in turn will frame classroom curriculum and pedagogy (Chap. 2).

In Chapter Three, Beryl Exley (Centre for Language, Literacy and Diversity, QUT) analyses interview data collected from participants working in Australian higher education off-shore contexts, namely, institutions situated in Central Java, Indonesia. According to Exley, two main themes emerged from the corpus of interview data. The first theme “centred on what the teachers put forth as the professional knowledge base for offshore instruction: subject matter knowledge and pedagogical knowledge”, while the second theme “focused on the teachers’ understanding of dominant market orientations” (Chap. 3). Exley argues that dominant market orientations (that is, fee-paying clients’ requests in terms of the ‘what’ and ‘how’ of curriculum and pedagogy) were often in tension with the disciplinary subject and pedagogical knowledge of teachers.

In Chapter Four, Delia Hart, a PhD student (Centre for Language, Literacy and Diversity, QUT), analyses secondary school teachers’ knowledge of discipline and behaviour management. Data collected from a representative sample of school personnel (N=14) are analysed in the chapter. This data set constituted part of a larger data corpus collected from school students and school personnel in a middle class Brisbane high school. Data analytic tools were developed from Critical Discourse Analysis (CDA) in order to “investigate the nature of power relations that underpin the ways in which teachers make meaning of discipline and behaviour management” (Chap. 4). Hart argues that:

...the dominant discourses of behaviour management and discipline circulating within this case study school centre on narrow managerial discourses. These discourses constitute an under-theorised pedagogy with significant implications for the ways in which teacher and student identities and teacher and student relations are constructed within the school. Arguably they also signify a silence concerning the democratic principles to which schools are avowedly committed (Chap. 4).

Teacher Professional Development Knowledge

The next two chapters (5 & 6) examine knowledge that may be relevant for teacher professional development sessions. Thus, in Chapter Five, Ali Black (Centre for Applied Studies in Early Childhood, QUT) reports on one component of her completed doctoral dissertation. The larger doctoral research study investigated the professional development program of 14 early childhood teachers employed in child-care centres. All of the teachers were “engaged in cycles of reflective inquiry for a period of four months” in order to better understand “what it means to teach” by making “connections with the knowledge which guides action” (Chap. 5). In the component of the study reported in Chapter Five, Black examines the place of artful representations in sense-making, or meaning-making for one early childhood teacher. According to Black, artful representations, as professional development resources, may “better equip teachers to anchor knowledge to the demands of the work, and divert their sense of being overwhelmed, burnt out and ineffective” (Chap. 5).
In Chapter Six, Leanne Crosswell and Bob Elliott (Centre for Professional Practice in Leadership, Education and Training, QUT) explore issues of teacher efficacy and commitment through the analysis of interview data collected from 12 primary school teachers. The teaching experiences of the interview participants ranged from 12 to 25 years, and were predominantly in Queensland primary schools. The researchers identified four broad belief/metaphors of teacher commitment across the data corpus. In addition, they explored three contexts, personal, school and systemic that may diminish or sustain teacher commitment. The notion that committed teachers constantly think about their teaching was a recurring theme throughout the data (Chap. 6). Moreover, the data indicated that “the school context appears to be the place where the majority of factors that sustain teachers’ commitment exist” (Chap. 6).

Fashion Model Bodies as Pedagogy

In the final chapter in the section on teacher knowledge, Angela Draper, a doctoral student (Centre for Language, Literacy and Diversity, QUT), critically reviews literature on the educative relationship between fashion models and young girls (Chap. 7). Draper argues that much of the current literature theorises fashion model bodies as “disorderly catalysts in the lives of young girls” (Chap. 7). If researchers can only think of female model bodies as “disorderly bodies”, and the relationship between female model and young girl as “disorderly”, then it is almost unthinkable to conceptualise this relationship as productive pedagogic work. Although such a conceptualisation entails “risky work”, Draper suggests that it is important to theorise the fashion model/young girl relationship as a female-to-female pedagogic relationship. It is via this pedagogic relationship, Draper argues, that young girls engage with and come to know the body of the female fashion model with “bodily precision”, that is, with “such intimate and exhaustive detail” (Chap. 7).

Part two: Learning communities

The implications of a knowledge economy for teachers’ pedagogic work are at least two-fold. On the one hand, teachers need to re-think their own knowledge base (as articulated in the preceding papers) On the other hand, teachers must engage with the new modes of knowledge that learners need to acquire, as well as the learning communities or contexts that will enable such knowledge acquisition. The five papers in this section all deal with issues pertaining to various types of learning communities (computer-centred, leisure, public forums, formal schooling institutions), and the types of knowledge acquired through such communities.

In Chapters Eight and Nine, new learning environments such as leisure settings and computer-mediated contexts are the subject of inquiry. Thus in Chapter Eight, three researchers, Kay Kimber (Centre for Cognitive Processes in Learning, QUT), Hitendra Pillei (Centre for Cognitive Processes in Learning, QUT) and Cameron Richards (Singapore National Institute of Education, Nanyang Technological University), analyse “technoliteracy” data produced by 62 senior secondary students. According to Kimber et al., the concept technoliteracy “articulates the convergence of technology and literacy practices through applying practical processes to curriculum content” (Chap. 8). Specifically, the researchers investigated the nature of knowledge developed by a cohort of students in senior secondary English and History classes engaged in collaborative inquiry mediated through computer-generated concept maps. Qualitative and quantitative data analyses were undertaken using “a criteria template derived from the Structure of Learning Outcomes Taxonomy” (Chap. 8). The researchers suggest that student learning is enhanced by “the combination of collaborative inquiry and computer-generated concept maps” (Chap. 8).

In Chapter Nine, Jan Packer (Centre for Professional Practice in Leadership, Education and Training, QUT) uses survey data collected from six different sites (458 questionnaires, approximately 60-80 from each site) to explore the issue of “learning” in educational leisure settings. Specifically, Packer focuses on “visitors’ perceptions of, and motivations regarding, the experience of learning” in settings or places of informal learning (Chap. 9). Packer argues that a number of settings such as “museums, national parks, wildlife centres and heritage sites” constitute important educational or informal learning places for adults (Chap. 9). Desired learning outcomes from these settings, according to Packer, should not be “limited to acquiring new information or concepts” but should extend “to encouraging curiosity and exploration, changing attitudes, evoking feelings and developing a sense of personal, cultural and community identity” (Chap. 9).

Two discipline specific school subjects, English and Science, have received extensive research attention in recent years. This is because English has now become a world language and the dominant means of communication in business, technology and science. In addition, the new information economy is fuelled by knowledge production in the fields of science and technology (Christensen, Chap. 11). At the same time, educational researchers argue that learners need to acquire critical literacy skills so that they learn to interrogate the truth content of new forms of knowledge. However, not all educators have common understandings of critical literacy. Indeed, the field of critical literacy continues to be a site of intense pedagogical struggle.

In Chapter Ten, Jennifer Alford (Centre for Language, Literacy and Diversity, QUT) examines current debates and struggles over what constitutes critical literacy in subject English for adolescent ESL learners in Queensland secondary schools. Firstly, Alford discusses the literacy curriculum demands for learners in Queensland secondary schools. Then, the theoretical assumptions underpinning critical literacy and the debates between critical literacy, ESL and genre literacy researchers are briefly outlined. Finally, Alford considers five key problematic areas that must be considered by teachers when developing a critical literacy program for ESL learners. These problematic areas are as follows: “mainstreaming policy, time, resistance and submission to text, default genre pedagogy, and background knowledge” (Chap. 10).

In Chapter Eleven, Clare Christensen (Centre for Language, Literacy and Diversity, QUT) critically reviews literature on scientific literacy and public understanding of science. The objective of the review is to ascertain what scientific knowledge and skills are required by citizens in a knowledge society. Christensen argues that the proliferation of
scientific and technological knowledge, initially designed to solve complex social problems, generates risks (Beck, cited by Christensen, Chap 11). These risks may be associated with environmental degradation/pollution, the use of information communications technologies, consumption of genetically modified foods, and reproductive technologies. Christensen argues that the conditions of a knowledge/risk society necessitate a technologically/scientifically literate or informed public. From this perspective, all citizens should have access to knowledge and skills that enable them to understand and apply scientific processes (such as evaluating evidence), and judge the trustworthiness of sources of scientific knowledge (critical literacy skills).

The final chapter in this section on learning communities focuses on the experiences of adolescents with learning disabilities. Specifically, Bronn Williams (Centre for Cognitive Processes in Learning, QUT), reviews literature on “the pattern of interaction between cognitive processes, social behaviour and environmental factors” in order to examine how loneliness affects the learning experiences of adolescents categorised as learning disabled (Chap 12). The term learning disability is defined as “a significant difficulty in the acquisition and manipulation of verbal and/or non-verbal academic skills” (Chap 12). According to Williams, schools may be quite “confronting” places for adolescents with learning disabilities because they are sites where “their academic and social difficulties are most evident” (Chap 12). Moreover, such confronting school experiences may push adolescents with learning disabilities out of school rather than encourage them to maximise their learning potential.

Part three: Social management issues

The five papers in this section of the book deal with issues pertaining to the social management of large cohorts of people. Instruments of management, including architectural design, policy discourses, data collection and reportage, models of leadership, have long been the object of research investigation in the social sciences. Most of the papers in this section deal specifically with the management of people in the field of education.

Leadership

The first three chapters (13, 14, 15) deal with issues of leadership in a complex, rapidly changing society. While Luke Stegemann is concerned with leadership models in the growing business of teaching English as a second language (Chap 13), Louise Hard (Chap. 14) and Hanna Nupponen (Chap. 15) examine issues pertaining to leadership in the Early Childhood Education and Care (ECEC) industry.

In Chapter Thirteen, Luke Stegemann (Centre for Language, Literacy and Diversity, QUT) argues that leadership issues for TESOL are particularly important in the contemporary educational landscape which is characterised by “growing consumerism, client-power and customer-orientation; growing short-termism, profit-focused practices; and increasingly globalised and intensified competition” (Law & Glover cited by Stegemann, Chap 13). Stegemann argues that, while research attention is increasingly paid to the “managerial aspects of TESOL operations as a route to greater efficiencies, little has been proposed in the way of models of leadership” (Chap. 13). Consequently, Stegemann reviews literature on critical models of leadership, ‘managerialist’ approaches to education, and critical literacy for second language learners in order to develop propositions pertaining to models of TESOL leadership.

In Chapter Fourteen, Louise Hard (Centre for Applied Studies in Early Childhood, QUT) critically reviews literature in the general field of leadership, and in the specific field of women in leadership. Hard argues that such a review is necessary to inform the work of practitioners in the field of ECEC. During a time when ECEC is facing enormous challenges such as “limited teacher numbers, low pay and a poor social image”, effective leadership and training become particularly crucial matters (Chap 14). Hard proposes that ECEC practitioners may have been deterred from taking up leadership or management positions as these have been traditionally conceptualised in masculinist terms. Alternative models of leadership are therefore necessary for a field such as ECEC which continues to be dominated by women. Hard suggests that the work of feminist scholars, particularly research that insists on “investigating power relations between leaders and dominant discourses”, may be beneficial to ECEC practitioners (Chap 14).

Hanna Nupponen (Centre for Applied Studies in Early Childhood, QUT), also examines the issue of leadership for ECEC professionals. Specifically, Nupponen reports on an interview based study conducted with eight early childhood centre directors. The study attempted to obtain representation on perspectives of ECEC leadership by interviewing personnel employed in “community-based and privately-owned child care centres”, inner and outer regions of a capital city, and with extensive experience in the industry. Each director was interviewed for approximately one hour on two separate occasions. In this chapter, Nupponen reports on data collected from the second set of interviews. Nupponen concludes that “the growing concern about the importance of quality provision for children under eight years” means that ECEC leaders must understand how their role “impacts on quality outcomes for young children, families and staff” (Chap. 15).

Discursive Constructions

In the following two chapters, issues relating to the social construction and management of diversity are the focus of investigation. While Terry Morgan is concerned with the construction of “homeless and ‘at-risk’ young people” (Chap. 16) in various media and public relations brochures, Mary Keeffe-Martin is interested in the school, parental and legal discourses pertaining to students with disabilities.

In Chapter Sixteen, Terry Morgan (Centre for Language, Literacy and Diversity, QUT), examines the ways that texts work to reputationally manage youth, that is, construct disadvantaged categories of youth “firstly as victims of social oppression and secondly as heroic in their resistance to it” (Chap. 16). The “promotional literature and media reports about Project Australia” are the focus of Morgan’s discursive inquiry.
Introduction

Such discursive work, Morgan argues, is important on three levels. Firstly, community organisations need to understand how discourses are produced, circulated and consumed in order to secure funding. Secondly, critical discourse analysis may enable community organisations to resist pressure from funding agencies to "address politically constructed needs rather than those which their knowledge of the field tells them are genuine" (Chap. 16). Thirdly, critical discourse analyses may be productive for young people themselves, as they negotiate their own identities in relation to government, media and community agency constructions of youth.

In the final chapter in this section, Mary Keeffe-Martin (Centre for Professional Practice in Leadership, Education and Training) examines "the legal and educational issues associated with inclusive education" by documenting three case law studies (Chap. 17). Each of the case studies deals with "complaints made about discrimination against students with disabilities in school settings" (Chap. 17). Specifically, the chapter examines recent case law in order to "interpret legal issues such as reasonable accommodation, less favourable treatment and unjustifiable hardship" (Chap. 17). In each case, the tribunal found that direct discrimination had occurred and awarded costs to the student. Keeffe-Martin concludes that:

- a limited knowledge of the legislation, inexperience as a principal, and a lack of qualifications or experience in special education combine with vague and interpretive legislative terms to make the lawful management of inclusion a complex and sometimes contentious task for principals (Chap. 17)

Part four: Research method

The five papers in this section of the book all deal with issues pertaining to the 'what' and 'how' of knowledge generation during the research process. These issues are wide-ranging but inextricably concerned with the status of the knowledge produced/colllected in the research process.

In Chapter Eighteen, Mary Hanrahan (Centre for Language, Literacy and Diversity, QUT), argues for a post-post-humanist research approach to understanding teaching/learning in the field of educational research. Specifically, Hanrahan argues that educational researchers while rejecting the mind/body split, and objectivist constructions of knowledge, continue to prioritise logical, rationalist forms of knowledge over tacit, embodied forms of knowledge. Even writers in the post-structuralist vein, who claim to have solved the mind/body split problem in research, tend to prioritise the social and cultural aspects of knowledge construction (power/knowledge discursive formations) without accounting for individual agency. Hanrahan concludes by making a case for a "non-dualistic approach to research and writing, an approach which refuses a clear separation between the personal and the social, between the body and the mind" (Chap. 18).

In Chapter Nineteen, three researchers from the School of Early Childhood Studies at QUT, Susan Irvine, Collette Tayler, and Ann Farrell, make a case for phenomenographic research on "parent conceptions (i.e., expectations and perceptions) of effective [ECEC] services" (Chap. 19). Irvine et al., argue that such research is both necessary and timely "in the light of evidence of a failing ECEC system, policy shifts toward integrated services, and changing views on the role of parents in policy and service development" (Chap. 19). While some research has been undertaken on parent conceptions of ECEC, this has tended to take the form of "large scale survey methodology" with predefined descriptive and analytic categories (Chap. 19). By contrast, a phenomenographic research approach would enable researchers to elicit "parent thinking at a deeper level to inform the development of services that are more responsive to expressed family needs and expectations" (Chap. 19). This is because phenomenography enables the examination of "the differing ways in which people experience, perceive, apprehend, understand and conceptualise various phenomena in, and aspects of, the world around them" (Marton, cited in Chap. 19).

In Chapter Twenty, Juliana Mohok McLaughlin (Centre for Professional Practice in Leadership, Education and Training, QUT) explores the use of decolonising methodologies in researching the effectiveness of an Australian foreign aid project to Papua New Guinea. McLaughlin describes a decolonising methodology as one conducted by an insider with local social and cultural knowledge and trained in the art of critical analysis. The 'insider' status of the researcher is significant in a decolonising methodology. This is because the whole research exercise is conceptualised as "an interactive process shaped by personal history, biography, gender, social class, race and ethnicity and research subjects" (Denzin & Lincoln, cited in McLaughlin, Chap. 20). McLaughlin articulates the components of a decolonising or 'Indigenist' methodology as "including interconnectedness, focus on process and relationships, inclusion of spiritual experience, and expanded definitions of empirical data" (Walliser, cited in McLaughlin, Chap. 20).

In Chapter Twenty-one, Philip Keys (Centre for Maths and Science Education, QUT) reviews literature on educational criticism as a research method, as well as the application of this method in his own research work. Keys argues that educational criticism has two knowledge dimensions, theoretical and experiential/craft knowledge. While theoretical knowledge is gained from reviewing the research literature, craft knowledge is acquired via practitioner experience. The three phases of educational criticism, namely, descriptive, interpretive and evaluative, are outlined and the value of educational criticism as a research method is empirically illustrated.

In Chapter Twenty-two, Felicity McArthur (Centre for Applied Studies in Early Childhood, QUT) elaborates on the research design that she developed to inquire into the discursive rules for 'proper' art teaching in Queensland. An uneasy moment in her own teaching practices at QUT motivated McArthur to investigate how the 'rules' for propriety in terms of proper art pedagogy are established, shaped and maintained. Specifically, McArthur collected interview data from twenty-two participants in three different settings: "a primary school, a preschool, and an artist's studio after school" (Chap. 22). In addition, video data were collected of three "teachers' and artists' ways of teaching art with young children" (Chap. 22). For McArthur, discourse analysis of the interview and video texts meant "deliberately looking for data that troubled the neat..."
categories, pointing to oppositions in the discourse, and the hierarchy of organising discourses” (Chap. 22).

Conclusion
The processes by which HDR knowledge was codified through a series of workshops, conference presentation sessions, and scaffolded writing exercises were explicated in this chapter. It was argued that institution-wide HDR training implies changes to the individualised, privatised pedagogic relationship between supervisor and student. In addition, a summary was provided of the twenty-two chapters included in this collection. Generally, all the papers deal with issues relating to ‘who’ produces ‘what’ knowledge, ‘how’ and for ‘what’ purposes. Thus all the papers focus on the production, reproduction and acquisition of knowledge. These are crucial areas of research and investigation in a knowledge economy. The final chapter by Parlo Singh, Erica McWilliam and Peter G. Taylor explores the implications of the knowledge economy and changes to Federal government university funding policy to the design of HDR training curriculum.

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Parlo Singh