QUALITY IN POSTGRADUATE RESEARCH:

Integrating Perspectives

APRIL 2002

Edited by Dr Margaret Kiley and Dr Gerry Mullins

PROCEEDINGS OF THE QUALITY IN POSTGRADUATE RESEARCH CONFERENCE

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QUALITY IN POSTGRADUATE RESEARCH: INTEGRATING PERSPECTIVES

PROCEEDINGS OF THE 2002 INTERNATIONAL QUALITY IN POSTGRADUATE RESEARCH CONFERENCE

ADELAIDE

APRIL 18-19

EDITED BY

MARGARET KILEY AND GERRY MULLINS

Papers in this publication have been drawn from the conference on *Quality in Postgraduate Research: Integrating Perspectives* held in Adelaide 18-19 April 2002.

Section 1 of the proceedings consists of papers and abstracts related in broad ways to the quality agenda. Section 2 consists of papers and abstracts that were included in the Research Literacies stream of the conference. Section 3 relates to the Postgraduate Experience, Section 4 Postgraduate Supervision, and Section 5 the Postgraduate Research Environment. The final part, Section 6, comprises the panel discussion held as a summary of the conference.

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EDITORIAL

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When the *Quality in Postgraduate Research* conferences began in 1994, 'quality assurance' was a relatively novel concept in the field of postgraduate education—now it is of international interest. The 1994 conference occured in the context of the first round of Quality Reviews taking place in Australia. In 1994 it was uncertain what 'quality' in research education meant, so the theme of the conference was *Making it Happen*. The sub-titles of subsequent conferences are illuminating. For example, by 1996 we were not sure how effective the initial quality assurance processes had been and the conference title reflects that uncertainty–*Quality in Postgraduate Research: Is it happening?* By 1998 we were dealing with the recently published West Report *Learning for Life* and the theme was *Managing the New Agenda.* Perhaps by 2000 there was a sense of exhaustion with the demands being put on universities by that new agenda and so *Making Ends Meet* was an appropriate theme.

The theme for the 2002 conference was *Integrating Perspectives*. How one views quality in postgraduate education depends on one's perspective—that of a postgraduate student, supervisor, administrator, policy maker and those who research in the area of postgraduate education. The biennial *Quality in Postgraduate Research* conferences are now well established as a meeting place for these different perspectives. The conferences provide an opportunity to debate the latest policies affecting postgraduate education; to exchange views on current research and good practice in the field; and to link special staff and student interest groups. The 2002 conference attempted to integrate these perspectives on postgraduate education.

What we need are quality processes that are sensitive to the growing body of research on postgraduate learning, rather than processes that seek to impose, across the board, rather limited models of research training. In the eight years since 1994, there has been a steady growth in our understanding of the process of postgraduate education, an understanding of how research students learn. This development was reflected in the 2002 program by papers on assessment, on the components of a healthy research 'culture', and on effective partnerships between students and their supervisors.

In each of the conferences there has been a strong focus on student support, particularly through writing. However, over the past eight years this focus has developed significantly leading to a parallel stream at the 2002 conference on research literacies. This stream examined all aspects of the literacies associated with research and research education.

An indication of a more sophisticated approach to quality issues was the more international outlook of the 2002 conference, the appreciation that other higher systems have also engaged in quality processes and that we may have something to share with each other. Both the keynote speakers at the 2002 conference were international visitors and there are several papers in these proceedings that reflect this international perspective.

A feature of previous Quality in Postgraduate Research conferences has been the strong involvement of postgraduate students in both organising and presenting at the conferences. This represents the recognition that postgraduates are as much colleagues in the process of research as they are students. The 2002 conference proceedings include several papers by postgraduates, both international and local.

Another aspect of the international and student focus of the conference is the concern of all Australian universities to attract international students. It is important that we see international students as more than just another revenue source. This conference, and particularly Professor Panich's keynote address, discussed what international students and their sponsors want from a postgraduate education in provider countries such as Australia, New Zealand and the UK, and what contribution these students might make to their host universities and to their home countries.

It was inevitable that a conference on postgraduate research in Australia in 2002 would be concerned with the implementation of the Australian government's Research Training Scheme, particularly the imperative for improved completion times and rates. Indeed, the topic for the final plenary panel was 'Achieving quality and timely completion'. After eight years, there is now a sense that we are well familiar with the demands of quality assurance. What we are concerned about is avoiding knee-jerk-reactions to the demands of the government or of government agencies, and avoiding a piecemeal approach to postgraduate education. What we need are quality assurance processes that articulate with and support all aspects of postgraduate education, and the broader educational and research agendas.

These proceedings have been structured to reflect the above focus areas.

- We begin with Quality, what it means in the international, national and local environment, and include the keynote papers by Howard Green, Vicharn Panich and Evan Arthur, and papers and abstracts on quality issues.
- The literacy cluster of papers is headed by Erica McWilliam's keynote and includes papers and abstracts related specifically to aspects of postgraduate research literacies.
- The next cluster of papers and abstracts focuses on students; working with students, research about students and research by students about students—the postgraduate experience.
- The fourth section of the proceedings includes papers and abstracts which are related to supervision and the wide and varied range of issues involved in that topic.
- Research culture and environment is the heading for the fifth group of papers and abstracts.

Needless to say some papers or abstracts would fit under several different headings; yet another indication of the complexity of the whole area of quality in postgraduate research, and the need to integrate perspectives.

June 2002

SECTION ONE

QUALITY ISSUES

THE QUALITY AGENDA: THE UK EXPERIENCE

Howard Green
Chair, UK Council for Graduate Education
Dean, Research and Graduate School
Staffordshire University
UNITED KINGDOM

SPEAKER PROFILE: *Introduced by* PROFESSOR EDWINA CORNISH

Professor Howard Green is an urban planner by training. He teaches and researches aspects of urban policy, both in the UK and France. He is a member of the Economic and Social Sciences Research Council, and he is actively involved in the research education aspects of the Council's work. He has also worked in the field of graduate education at both faculty and university levels at the University of Leeds, and now at Staffordshire. He is committed to the professional development of colleagues and their students, and has been responsible for the introduction of both research methods training and research supervisor training. Professor Green is currently Chair of the UK Council for Graduate Education and it is in this capacity that we have invited him to Adelaide to speak on the quality agenda of the UK experience.

Thanks very much for those kind words, and the invitation to come and speak at this conference. It does appear to be particularly interesting because of the international flavour, as you noted Chair, and I'm sure I'm certainly going to learn a lot as we go through the days' presentations.

Before I start I'd like to make one or two caveats. First of all, in forty minutes it's very difficult to go through the entire agenda for the postgraduate work in the UK, so I'm going to skim over quite a number of things. Secondly, from time to time I'm going to generalise between postgraduate taught (PGT) and postgraduate research (PGR), although the emphasis will be on postgraduate research, I think. It's important to recognise that the scene is moving very quickly too, and that what comments or conclusions I make today, I'm not quite sure whether they will be the same ones tomorrow. I think these are important caveats because of the generalisations I will make.

A couple of other things I would like to say. Because we're talking about the quality agenda in the UK, we should worry a little bit about the UK and what is the UK; I'm not sure that we can generalise about the UK any more. Devolution in Scotland and changes in Wales have meant that the agendas in those two countries are diverging from those of England itself so that, again, we do need to worry about this nationality or country basis.

And then finally, what is the agenda? I don't think I'm going to define what the agenda is, and I'm certainly not going to define what quality is, because I think that would probably take us the next couple of hours. But I think in terms of mentioning or giving some insights into the agenda, they really revolve around some of the notions that have come out of the recent research assessment exercise in the UK where we very proudly announced that our research was of international status. And I think the quality agenda in many courses for research training and postgraduate research students in the UK is to maintain that international status, and therefore to enhance, if you like, the international market or the place of the UK in the international market for research and research students.

But the situation in the UK is very, very diverse and I think we do need to worry about that diversity and ensure that quality applies to all and not to subgroups, and therefore to take into account the diverse situation that we're in.

Okay, so that's by way of caveat. What I want to do slightly depends on time. I really want to do three things. One is to look at where we've come from and make one or two comments about the last ten years and some of the issues and some of the pressures of the last ten years that have caused the quality agenda to move in the direction it has. Secondly, to talk about some aspects of quality—the kinds of things that are going on within that agenda. And then, if we've got time, I'll talk briefly about the UKCG largely because of its role in enhancing quality and the quality agenda in the UK.

INTRODUCTION

The past 10 or so years have seen significant changes in higher education in the United Kingdom. The growth in the number of undergraduate students and the move towards a mass higher education system supported by the promotion of the polytechnics to university status frequently dominates the analysis of this change. For those who have been involved in the postgraduate side of the sector, change has been equally if not more dramatic and rapid, overshadowed only by the sheer volume of undergraduate student numbers.

In addressing the quality agenda, the paper will consider three broad themes. It will review where we have come from over the last 10 years and identify some of the key elements of change before addressing some of the quality challenges for the next years. Finally it will describe the role of the UK Council for Graduate Education (UKCGE) in this period in the enhancement of the quality of postgraduate delivery.

The paper will of necessity be partial and will only skim the surface of many aspects of postgraduate education. It will also generalise across provision and will only infrequently differentiate between postgraduate taught and postgraduate research programmes. In drawing the material together it will conclude by suggesting that whilst major advances have been made, we remain some distance from realising the considerable potential of postgraduate education for the nation as a whole.

What is the quality agenda? The recent Research Assessment Exercise has highlighted the international excellence of UK research. However, the academic sector is increasingly competing globally for students and funding. To maintain this position, we have to ensure that the research degree is world-class in all its aspects. Equally, the market for research awards is changing within the UK as we will see. We need, therefore, to ensure quality for all the stakeholders.

THE LAST TEN YEARS - A PERIOD OF DRAMATIC CHANGE

THE GROWTH OF STUDENT NUMBERS

The growth in the postgraduate population has created a sector which is out of all recognition to that of the 1960's when the Robbins Report, the first major study of postgraduate education in the UK noted a population in 1961/62 of 19,400 full-time and 6,300 part-time students. By 1994/95 at the time of the Harris report, there were 128,300 full-time and 187,100 part-time postgraduate students. The relative position of PG similarly changed during this period, from 13% in 1979, (100,900 PG in a total population of 787,000). In 1994/95 the comparable figure was 21% (315,400 out of a population of 1,528,600). A similarly dramatic statistic is highlighted in the period 1982/83 - 1992/93 in which the PG population grew by 1125% (from 102,000 - 220,000) compared with 70% for UGs. (UKCGE, 1995a). By 1999/00, the latest date for which full information is available, the total population was 151,330 full-time and 257,290 part-time, (HESA, 2001).
Similar structural changes were observed in the mode of programmes with a growth in the number of part-time students, and equalisation of the gender balance and more recently a significant growth in the numbers of overseas students. In 1992/93 there were 25,100 international postgraduate students in HEIs in the UK, 8% from the EU 92% from the rest of the world. By 1997/98 this figure had risen to 81,000 of which now 33% were from the EU and 67% from the rest of the world, theoretically at least making a major impact on the

funding of programmes. The global market, and in particular the UK's position in that market, has been a key factor in the discussion of quality (Spagnold, 1994).

If we look at doctoral awards, the importance of this change is further emphasised. For example, 13,670 doctorates were awarded by 129 Higher Education Institutions in 2000. Table 1 illustrates the trend since the mid '90's.

Table 1 Total Number of Doctorates Awarded by UK HEIs, 1996-2000

Year	Total	Annual Growth(%)
1996	10,800	
1997	11,860	9.8
1998	12,660	6.7
1999	13,140	3.8
2000	13,670	4.0

Source: Millichope, 2001

The distribution of the awards is highly skewed across institutions as can be seen in Table 2. Five institutions, the Universities of Cambridge, Oxford, Birmingham, Manchester and University College London, all located in England, accounted for 25% of the total awards.

Table 2 The Distribution of Doctorates Awarded by Institution (2000)

Quartile	Number of Institutions
Upper	5
Second	9
Third	18
Lower	97

Source: Millicope, 2001

If we add to this list of characteristics of awards, the gender, ethnicity and country of domicile, we can begin to see a very diverse array of awards challenging a common quality agenda.

QUALITY

The growth in numbers potentially has an impact on the quality of the provision - whether it be infrastructure such as accommodation, library facilities and openings, or academic support and supervisory standards. In 1996 the UKCGE noted that *doctoral education was frequently regarded as a cottage industry, a prestigious yet somehow fringe activity in higher education*. (UKCGE, 1996). The movement from a cottage industry to one which provides excellence in an increasingly mass production environment continues to challenge institutions and their regulators. From the ESRC review of social science completion rates in the late 1980's to the QAA's various codes of practice including the code of practice for postgraduate research (QAA, 1999) various aspects of quality have been under scrutiny. Implicitly at least must be the assumption that the increased numbers of postgraduate students were presenting a real challenge to the continued enhancement of delivery.

THE HARRIS REPORT - 1996

The Harris Report deserves a separate mention. 1996 marked an important landmark in the development of postgraduate education, particularly in England and Wales, and by the extension throughout the UK, with the publication of the Harris report. The report known formally as the Review of Postgraduate Education was

originally suggested by the Higher Education Funding Council for England (HEFCE) to review its funding method for postgraduate work, following the rapidly increasing size of the sector. The significance of the review, the first national review of postgraduate education since the Robbins Report in 1963, (Robbins, 1963), led to the Committee of Vice Chancellors and Principles (CVCP, now Universities, UK) and the Standing Conference of Principals (SCOP) becoming co sponsors. This is not the place to describe in detail the contents of the report other than to emphasise that the scope of the work widened to include most aspects of PGR and PGT. The conclusions and recommendations are however of major significance for the sector and what follows is a brief review of the key elements.

The growth in the sector had led to concerns that without an appropriate and separate funding stream, post-graduate development might take place to the detriment of the undergraduate sector. As was already the case with postgraduate research students, it was recommended that funding should be separated from undergraduates. The report resisted the setting of student number maxima (as was the case for undergraduates until this year, with the abolition of the Maximum Aggregate Student Number (MASN)) as it was felt this would stifle innovations.

The report noted the considerable confusion which existed in understanding the increasing diversity of post-graduate provision, and the various titles adopted for courses and programmes. It suggested that as a minimum the sector adopt a common set of descriptors, which could form the basis of a directory. Within this framework, it was suggested that common nomenclature be adopted which would for example allow differentiation between programmes which were postgraduate in time but not in level and vice versa and hence address the level problem associated with the so called conversion masters courses.

The report noted the need for consistent quality assurance and recommended that a quality assurance agency (subsequently the Quality Assurance Agency (QAA)), which would also deal with undergraduate programme, should have this responsibility.

The report differentiated between PGT and PGR in its recommendations. It made several important, and differentiated recommendations all of which relate to quality. These include:

- A clear statement of expectation of both student and institution.
- A code of practice requiring institutions to have in place appropriate facilities and supervision.
- The linking of PGR funding to the quality of the research environment and the Research Assessment Exercise.

The significance of the Harris report is best demonstrated by the fact that many of its recommendations have already been implemented. Among the key recommendations already implemented, or in the process of implementation, some of which will be discussed below and include:

- QAA qualifications framework.
- Codes of practice for PGT.
- Codes of practice for PGR.
- Nomenclature of awards.
- Funding of PGR through the research funding model.
- Directory of PGT and PGR (CSU Prospects Directory).

THE DEVELOPMENT OF THE QUALITY AGENDA

The following section identifies some of the key changes in the development of quality during the period post Harris. In some cases some pre-Harris background is given to illustrate context.

RESEARCH TRAINING

The quality and appropriateness of many of the research degree programmes particularly as far as they provided the UK with trained researchers continues to be a theme. In 1991, the ESRC addressed the issue, in part to improve completion rates amongst its sponsored student population with the introduction of their Training Guidelines of which the third edition has recently been published (ESRC 2001).

The 1993 White Paper *Realising Our Potential* (HMSO, 1993) placed considerable emphasis on the capacity of research to contribute to the national economy emphasising the need for appropriately trained researchers.

In 1994, following the theme of the White Paper, the Office of Science and Technology (OST) published a paper outlining a recommended structure for a new one-year Research Masters (MRes) degree, which would include both taught and research components. This degree is intended as a foundation either for a doctorate or for a research career in industry or the public sector. The OST proposed: firstly, a significant research component (60% of the 42-week postgraduate year); secondly, the provision of a grounding in research techniques relevant to a range of disciplines as well as the development of specialist knowledge; and thirdly, the inclusion of modules intended to broaden the students' experience and to equip them with transferable skills in management, communication, commercial understanding, the exploitation of research, and team-working. This latter requirement continues to be a dominant, if not universally accepted, theme in research training.

The MRes initiative has been adopted by several universities and supported by four research councils - the Biotechnology and Biological Sciences Research Council (BBSRC), the Engineering and Physical Sciences Research Council (EPSRC), the Medical Research Council (MRC) and the Natural Environment Research Council (NERC). In 1997 the OST issued an interim report on the first two years of the pilot MRes scheme. This document comments on statistics relating to the programmes, on monitoring visits to participating universities and on questionnaires completed by students at the beginning and the end of their courses. The OST emphasises the high demand for MRes courses - three out of the four research councils have had 100% take up on places offered. It reports high levels of student satisfaction with courses, and states that student concerns over the worth of such a newly established qualification are diminishing as the reputation of the Research Masters is consolidated. Included in the report are figures indicating that the proportion of MRes students holding first class degrees compares favourably with the proportion among students opting for traditional MSc programmes.

The Economic and Social Sciences Research Council (ESRC) has re-emphasised the need for research training for the PhD students which it supports for over a decade and produces training guidelines to support its requirements. The recently published third edition of the guidelines further develops the approach with a one plus three year model - the first year being devoted to research training and the subsequent three, the PhD, a model not dissimilar from the MRes, (ESRC, 2001). There remains some confusion over the role of the MRes however as we have noted elsewhere (Green, Shaw & Hammill, 2001).

The quality and appropriateness of research training has been highlighted again in the last two years. The UKCGE has published two important reports on the provision of training for both the Arts and Humanities (UKCGE, 1999) and the Creative and Performing Arts and Design (UKCGE, 2001). Both reports identify the need for specific as well as generic training for these groups of students.

The Joint Research Councils and AHRB statement (Research Councils/AHRB, 2001) offers further evidence of the training agenda. It proposes seven broad areas of training which a PhD researcher would be expected to receive:

(i) research skills and techniques

(ii) research environment

(iii) research management

(iv) personal effectiveness

(v) communication skills

(vi) networking and team working skills; and

(vii) career management.

The inclusion of these areas will introduce considerable difficulties for many PhD programmes already struggling to complete within a four-year time frame, let alone the three years for which the Funding Councils fund institutions at present. They may be better provided as part of the MRes - pre-PhD programme. In this case, many of the MRes programmes will need significant revision to incorporate all these elements.

FUNDING

One dilemma, which has faced all those involved in the recruitment of research students and hence the future of research capacity in the UK, has been the level of stipends. Traditionally, research students supported by institutions or research councils have received a tax-free bursary to cover living expenses. During the late 1990's, several disciplines found it increasingly difficult to recruit students, in part it was suggested because of the competitive salaries available to new graduates in the labour market in general. This was particularly the case in some of the sciences and economics (UKCGE, December 1998b). Following a review by the Office of Science and Technology stipends are increasing significantly rising to £9,000 at 2000 prices over a three-year period beginning in 2001/2002.

Another initiative, which in part responds to the stipend problems, is the Doctoral Training Account being introduced by the EPSRC. Rather than allocating a fixed amount for each student stipend, the Doctoral Account will allocate institutions a global sum to cover the entire PhD programme. Institutions will then be able to respond to market and other imperatives in the determination of the level of payment to students.

The provision of adequate funding for students leaving their undergraduate programmes with significant debt, and entering a competitive national economy where starting high salaries for many are a major attraction, continues to be a concern, highlighted again by Professor Bennett in his report for The British Academy, (2001) and the Roberts Inquiry, (Roberts 2001).

NEW AWARDS

In the earlier discussion of the increased emphasis on research training within doctoral programmes, note was made of the MRes. This is but one of several new awards to be developed during the period. Of particular importance is the new group of doctoral awards, which have been developed since the early 1990's. Response to the research demands of the professions and professional practice, the professional doctorate, (also referred to inappropriately as the taught doctorate) has become increasingly popular. First introduced in Bristol University in the form of an EdD, and by SERC (now EPSRC) in their EngD in 1992, the award has developed rapidly. Currently there are over 109 professional doctorates offered in UK universities in Education, Engineering, Medicine, Psychology, Business Administration and Health Sciences (UKCGE, 2002).

The PhD itself has come under increasing scrutiny and with the support of the HEFCE, ten UK universities have embarked on a pilot programme for a 'new route' PhD which will incorporate taught elements similar to those of the American PhD. The new model which began in September 2001 includes assessed taught units that may involve teaching skills, group work, technology transfer, enterprise skills languages and research skills. This initiative is part of a wider attempt to fight off competition from US institutions in the market for international students (THES, 2001). Both these awards create problems for the quality agenda, particularly in assuring they are understood by all stakeholders and that standards of 'doctorateness' are maintained (Shaw & Green, 2002). We will need to ensure that we do not introduce the confusion over nomenclature which the Harris Report fought against and began to resolve.

ORGANISATIONAL CHANGE

Attention now turns to the way in which institutional organisation has responded. In this context the graduate school has become the dominant model in the UK following the experience of many institutions in the US (UKCGE, 1995a). Defined by the UKCGE as 'a distinct organisation concerned with the promotion of high quality graduate education and the administration of graduate education within institutions or across a number of institutions', their number has grown from 33 in 1995 (UKCGE, 1995a) to over 60 in 1998 (UKCGE, 1998a) and over 100 today. Initially, graduate schools were more typical of the 'older' university sector. 'New' universities have now caught up and the model is common across the sector as a whole. That is not to say that all institutions have adopted the same model for their graduate school. Circumstances and needs vary between institutions leading to a variety of models and responsibilities, all however with a common goal - to enhance the quality of institutional postgraduate provision.

The development of graduate schools has also seen a shift in institutional responsibilities for quality assurance. In a recent survey of all HEIs in the UK, the significance of the organisational change was evidenced by the shift in regulatory responsibility. 93% of all respondents now have a Code of Practice. The rest are in the process of producing such a code. Initial audit and annual review of practice is also increasingly visible.

THE NATIONAL QUALIFICATIONS FRAMEWORK

The Framework was finally published by the Quality Assurance Agency in January 2001, (QAA, 2001) after a long and difficult development process. The Framework builds on the work of both Harris and Dearing in providing a structure for all postgraduate awards, both undergraduate and postgraduate. At postgraduate level the Framework stipulates two levels, Masters and Doctoral, and presents descriptors for outcomes at these levels. It remains for institutions to interpret these descriptors for programmes they offer. The doctoral descriptors are particularly interesting as they challenge the sector to better define the expected outcomes of the PhD and as a consequence develop more robust approaches to the PhD itself. They also provide the basis for judging equivalence across all doctoral programmes including the professional and practice-based doctorate. Relatively straightforward for Masters awards, the approach, specification and assessment implications for the PhD are more problematic (Shaw & Green, 2002).

CURRENT CHALLENGES

Discussion of the current work on quality issues by the four funding agencies in the UK brings the agenda to the present as far as research degree provision is concerned.

In England, the Fundamental Review of Research Policy (HEFCE, 2000; HEFCE, 2001) made several recommendations related to postgraduate research training. It proposed that:

- Research training should be the subject of a separate, but linked, assessment process to the RAE.
- Funding provided by the HEFCE for the training of research students should be calculated and identified separately from the funding provided for research.
- The HEFCE, together with the Research Councils and other stakeholders such as industry and charities, should develop minimum requirements which departments would need to satisfy in order to be eligible for the HEFCE funding for postgraduate research student training. The research assessment process should be extended to establish whether departments comply with these minimum standards.
- Collaborative arrangements should be established to enable units to meet all aspects of the postgraduate research training requirements, where they might not be able to do so alone.

In the subsequent consultation the majority of the sector was positively disposed to the proposals, although there was little appetite for yet another assessment process.

Following this review, initially the HEFCE, and subsequently all four funding agencies, commissioned a study to recommend an approval to 'Improving Standards in Postgraduate Research Awards'. It was asked to comment specifically on:

- Delivering improvement in provision.
- Compatibility with the sustainability of the research base.
- Providing information for potential students.
- Providing sufficient flexibility to allow HEIs to innovate.
- Minimising burden.

The project is being undertaken by Janet Metcalfe Associates, in collaboration with UKCGE. Although, in the pre-consultative stage, the project is likely to propose the following measures.

A framework of quality standards for all aspects of research degree programmes. The framework builds on the QAA framework and begins by identifying eight key aspects of provision:

(i) institutional arrangements for research degree programmes (RDP)

(ii) research environment

(iii) selection, admission, enrolment and induction of students

(iv) supervisory arrangements

(v) development of research and other skills

(vi) initial review and subsequent progression

(vii) feedback mechanisms

(viii) appeals and complaints procedures.

Each of these eight aspects is subdivided into four areas:

Academic standards

Standards for supervisors

Standards for student/institution relations

Administrative processes.

In this way, the proposals attempt to identify areas of responsibility.

Within each of these areas threshold standards are identified which all institutions must comply with.

Table 3 gives an idea of the approach currently being developed, using aspect 4, supervision arrangements, as the example.

There are other Government policies and initiatives that, while not specifically focused on research awards, are likely to impact upon them. Among these we would draw attention particularly to the following:

- The target of a 50 per cent participation rate for post-compulsory education and the knock-on effect for research awards.
- The drive towards access and widening participation.
- The emphasis on continuous professional development and lifelong learning.
- The likelihood of the above pressures moving the base qualification for career professionals from the honours degree to the masters level.

Table 3

4. Supervisory arrangements			
Academic standards	**Standards for supervisors**	**Standards for student/institution relations**	**Administrative process standards**
Supervisory team to consist of at least two, one of whom should be designated as the 'main' supervisor with overall responsibility for the student. For interdisciplinary, collaborative or externally/industrially supervised projects, there should be a 'third party' in the supervisory team to provide the student with access to an independent view. **Threshold standard: at least [2] members of the 'supervisory team' should be demonstrably research active academics with relevant knowledge and skills to supervise and with defined roles.** **Threshold standard: at least [1] member of the supervisory team to be from a minimum [3a] RAE rated department.**	The 'main' supervisor to have had experience of at least one successful supervision within a supervisory team. All supervisors, whatever their level of experience should have regular training. **Threshold standard: 'main' supervisor should only take prime responsibility for a maximum [8] students.** **Threshold standard: training should be compulsory for [new] supervisors.**	Student to have an identified contact (mentor/advisor) to whom they could go for confidential advice and support outside the immediate supervisory team. This person to have proactive periodic contact with the student.	Guidelines for supervisors and for students setting out their respective responsibilities, with the arrangements to be embodied in institutional procedures. Institution to manage the workload associated with supervision; this should involve transparent procedures for allocating time to the supervision of students. Periodic independent institutional review of the arrangements for research supervision and support, with the outcomes used to adjust supervising responsibilities. **Threshold standard: minimum [annual] monitoring and review.** **Threshold standard: individual supervisor performance to be reviewed [annually] as part of the academic staff appraisal process.**

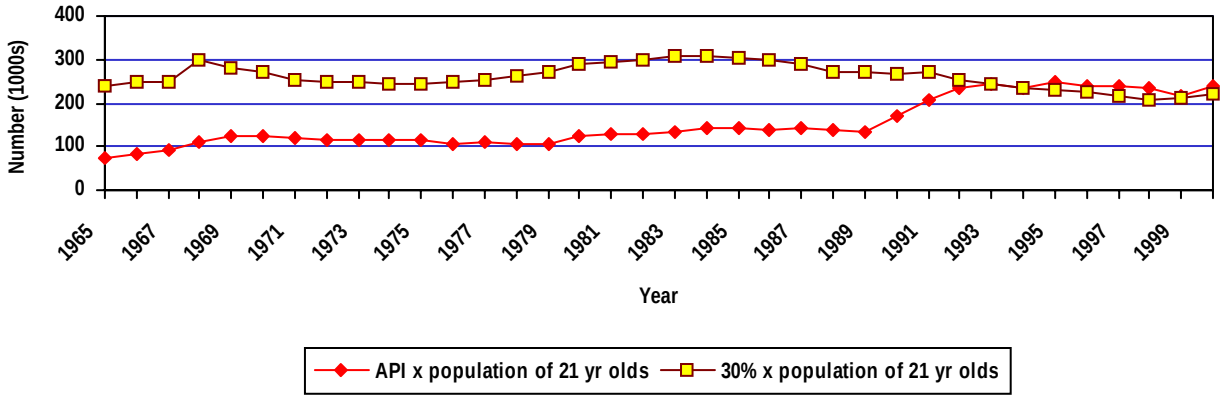
The Dearing report highlighted the importance of Lifelong Learning to society at large and to institutions. Harris noted the importance of vocational courses particularly in education and business and management and the increasing numbers coming to postgraduate work as mature students. The Lifelong Learning agenda will however demand new forms of delivery, distributed or at a distance, or increasingly work based. It will also demand quality delivery.

The Enterprise and Lifelong Learning Committee of the Scottish Parliament emphasised this in their recent interim report on the Lifelong Learning Inquiry stating, *Any lifelong learning system for the future must have quality as a key element. The Committee recognises that much of the learning taking place in Scotland today does so in the context of high quality system. However, there are concerns both about the consistency of quality provision and the effective use of resources intended to promote and enhance such provision*. (The Scottish Parliament, 2002).
The client group will certainly be different both in terms of expectation and capability. Much of the work of the Graduate School movement has been to create a climate more sympathetic to the needs of mature students, those with full-time jobs and those with families. Access to institutional facilities can no longer be weekday based. Delivery in blocks of time, over weekends and holiday periods is increasingly demanded

Perhaps the major challenge in this context is accessing those potential postgraduates who because of lower participation rates in the 1970's and 1980's undertook their training on the job, but who would in today's climate be well qualified for undergraduate programmes. Figure 1 highlights the importance of this group by extrapolating current age participation rates back to the 1960s.

For this group, entry qualifications to postgraduate programmes need to be re-examined and familiarisation programmes developed to introduce them to university life. APEL (Accreditation of Experiential Learning) will in many cases form alternative evidence of capability to benefit from postgraduate learning. Failure to address this problem will both disadvantage a significant group of mid career clients and cause institutions to miss a considerable potential market.

Figure 1 Age Participation and Non-Participation 1965-2000



THE UK COUNCIL FOR GRADUATE EDUCATION

The UKCGE was set up in 1994 by Professor Bob Burgess and a small group of likeminded colleagues to provide a forum for discussion and debate about the many changes that were taking place at that time in postgraduate education. Its mission was, and continues to be, the promotion of:

- The interests of postgraduate education in all disciplines.
- A distinct identity for graduate education and research in higher education.
- The development of quality and quality measures for graduate education and research conducted in higher education institutions.
- The effective leadership and management of postgraduate students.
- The status, education and training of postgraduate students.
- Effective infrastructural provisions for graduate education, including appropriate funding.
- Equal opportunities for students in graduate education.
- The professional development and status of staff and supervisors in HEIs.

The Council helps its members contribute to the development of the UK's graduate education culture by systematic enquiry into, creative thought about, and critical analysis of, education and other issues. Council events and publications support this mission while membership offers people involved in postgraduate education, whether they be administrators, academics or managers, regular opportunities to meet others in the field and participate in specialist networks.

The Council is managed by an Executive Committee elected by the member institutions. Membership is open to all HEIs with fifty or more postgraduate FTEs. Associate membership is available for institutions and organisations, which have an interest in postgraduate activity. Currently there are 126 full institutional members, the majority of UK HEIs. Reciprocal relationships are retained with some specific national institutions.

The Council's work is conducted through several different channels. The two annual conferences, one in winter the other in summer, provide the focus for major presentations, discussion and networking. Bringing together a cross section of the postgraduate community the conferences attract over 120 delegates each year. With a variety of formats, ranging from self-help groups to plenary presentations the conferences have provided the sector with an impressive range of ideas and information.

Workshops are the forum in which good (not so good) and best practice is presented. Normally the Council runs three workshops each year at different venues throughout the UK; topics included in recent workshops are research degree examining, appeals and appeals procedure, intellectual property issues and the postgraduate.

The working groups of the Council continue to provide expert overviews of particular aspects of postgraduate education. Made up of colleagues with a specialist interest in the particular subject being researched, eight working groups have so far reported on the following topics:

- Graduate School (1995).
- The Award of PhD on the Basis of Published Work (1996).
- Quality and Standards of Postgraduate Research Degrees (1996).
- Practice-Based Doctorates in the Creative and Performing Arts and Design (1997).
- The Status of Published Work in the Submission for Doctoral Degrees in European Universities (1998).
- Preparing Postgraduates to Teach in Higher Education (1999).
- The International Postgraduate: Challenges to British Higher Education (1999).
- Research Training for Humanities Postgraduate Students (2000).
- Research Training for Performing and Creative Arts and Design (2001).
- Professional Doctorates (2002).

CONCLUSION

Reflecting on the changes which have taken place in higher education as a whole, those of the postgraduate sector have perhaps attracted less attention. They have nevertheless been of enormous significance to the way in which UK institutions of higher education conduct their business and ensure quality. And there is much remaining to be done.

Perhaps I can end this paper with one final challenge, which reflects an area in which the postgraduate sector still lags behind the undergraduate—and that is in the way we expect students to demonstrate their competences and learning achievements. At the undergraduate level—and for the majority—but not all institutions, this has changed beyond all recognition to the traditions of the 1960's and 70's. Not so with the postgraduate sector in which the thesis still dominates thinking. Perhaps the newly emerging awards, the MRes and Professional doctorate, the skills requirements of the Joint Research Councils and AHRB, and the learning outcomes implicit in the QAA's framework will challenge the effectiveness of the thesis in assessing the research capability of our aspiring researchers.

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POST-PRESENTATION RESPONDENT

Leisa Ridges
President
Council of Australian Postgraduate Associations

I have five minutes and I think there are just a plethora of points that I would just love to expand on, but I'm going to try and just pick three or four. The first one that I think we need to have a look at is this mentioning from the UK of diversity, and diversity in this pool of postgraduate students that we have. Well, exactly the same thing happening in Australia. We have a very diverse pool of students and we need to think about how we are catering to the fact that we have such diversity.

Now, Professor Green put up three things under the heading of 'Postgraduate Research'. He said quality, institutional structures, and funding. Well, funnily enough, I would like to just reverse that for a second and go funding, institutional structures, quality. Now, the thing that comes in here with funding is flexibility. I think if we have a diverse pool of students, then we need to be flexible in the policies that we are writing for higher education for these students. Something that comes to mind here is we were talking about funding for the particular students and funding for the institutions. So let's start with the particular students, and Professor Green talked about bursaries and are they adequate, saying that there was an increase in the UK last year to nine thousand pounds. Now, I think that that would account to about twenty-five thousand dollars. In Australia, the Australian Postgraduate Awards (APA) are less than twenty thousand dollars.

Now, what we need perhaps while we're thinking about a review of the system this year—the Federal Minister has flagged that—these are things that we need to consider. Is that adequate support to students? Not only is that adequate support in terms of the sum—amount—but the way that it is delivered, i.e. the way that people undertake their postgraduate degrees these days. So what we're seeing in the UK is that there were actually more part-time students than there were full-time students. And I think you will see that that is also happening in Australia. Back in 1993, part-time students were comprising approximately forty per cent of all postgraduate students. Goodness knows what those numbers are now, but my guess would be that it is increasing. So when we look at funding support for students, there we need to look at perhaps the delivery of our APAs, i.e. should we start making them part-time and more of them available part-time, and if so, should they not be tax exempt? Just things to think about.

Let's now talk about the Research Training Scheme. This conference is all about integrating perspectives, so let's take key perspectives that came out in Professor Green's paper. The first is what is driving research training policy? It is the endpoint of the research degree that we have trained researchers. I'll come back to that. What does a research degree currently comprise of, is the other perspective.

So let's link those two and then let's link it to the Research Training Scheme. What they're looking at there is trained researchers. That means a student who has undertaken training and who has undertaken research. Two components there. Now, in Australia we know that the perspective is—hence, Research Training Scheme—that a postgraduate research degree is all about training. Wrong. It's not. It's not all about training because these students are doing research and contributing to the research output of their degrees. When we think about policy changes in a reform package that's coming up in the next year, I think that's the first perspective shift that we need to see happen, which is that research students are conducting research and we need to consider the postgraduate education experience, not the training experience.

Having said that, we need to have a look at the quality of that experience. So, what's important is that the two things are linked. Training is essential for research. If you have researchers, like any job that you do, you need to have training to ensure that you do that job well and that the quality of that job can continue to improve. So we need to train postgraduate students.

According to the Research Training Scheme, these are the facets of the research degree at risk of being lost from the research degree because funding is now linked to completions. So we don't want anything that's going to get students away from doing their degree and getting completed on time. Okay, but what about the training aspects? Now, the other little thing that links into that, and it's like a double-edged sword, is that training may actually assist students in completing in a timely fashion. So we need to consider how we're going to incorporate training into our postgraduate research degrees which we now want to complete in a shorter timeframe. The model that's being used in the UK is one that I think we should at least consider and put on the table here in Australia, and that is to have perhaps a one-year training course or subject where we learn all of those skills and then that can prepare us for our research phase which is the PhD, and of course that's only going to enhance the quality of the research that comes out from that PhD.

There's just one thing that I do want to mention, and it was one statement that was made by Professor Green which said *So far, we're not sure about the impact of student debt on the aspiration of students to undertake postgraduate degrees*. Well, I reckon I could propose the impact of student debts on the aspirations of students to undertake postgraduate degrees. Two things come into my mind.

First, let's see what the driving forces are for students to come along and do a postgraduate degree. If it's a career change, if it's an improvement in your career, then you've got to consider how much deferred debt am I going to have, compared to how much greater income am I going to start receiving because I've now got an extra degree? And I doubt they're going to come out even, especially when you start paying back that debt at a low threshold of about twenty-three and a half thousand dollars, not to mention that you're going into your postgraduate degree and you've already got a bunch of debt from your undergraduate degree.

The second part to that, if we're talking about the impact from student debt, is let's talk about quality in the widest extent. Why limit ourselves? So let's talk about quality of life. If we're talking about the impact of student debt, you walk away from this wonderful experience of having postgraduate research degrees and having that behind you. You can improve in your career, however the extra income is just being used to pay your debt. And then you say, *Okay, I want to improve the quality of my life; I want to take out a home loan; I want to buy that home and do those things*, and you go to the bank and you say *Oh, I've got fifty thousand dollars debt on my bank account; can I still take out a loan?*. These are the things that we need to consider. It's a whole picture; it's holistic. All of the things are interactive and we need to take them all on board when we think about policy changes in Australia.

POST-PRESENTATION RESPONDENT

Allan Lawson
Dean of Graduate Studies
University of Queensland

I did just want to make a couple of brief comparisons since Howard put up a number of statistics there, just to see if we can find a way of comparing the two systems. On Howard's figures there were in, I think the year 2000, thirteen thousand six hundred and seventy doctorates awarded in the UK. A comparable figure for Australia is three thousand eight hundred and seven. And so, do the sums yourself. The concentration of the awarding of doctorates follows a similar pattern. Thirty per cent of the doctorates awarded in Australia in 1999 were granted by three institutions, and fifty per cent of the PhDs awarded in Australia in that year were granted by a grand total of six institutions.

One of the other things I wanted to comment on in a comparative framework was the dramatic increase in the stipends offered to graduate students in the UK. That's not going to happen in Australia. It's not. There's a confident prediction for you. It's not going to happen in Australia for the fairly obvious reason that stipends here are indexed. I think the issue that we would more profitably take up in Australia is the grand total—the number

of stipends, and there's been no increase in the number of Australian postgraduate awards in living memory and that's the issue that we should pursue.

The point is though, and this is a serious point, we know—and there is lots of international data and there's lots of Australian data to prove it—that we could improve completion rates and times in Australia quite dramatically if we increase the number of stipends available to students to do their degrees properly. That's pretty straightforward. Like Leisa, I'm pretty interested in the idea of the MRes, the genuine research training part of the programme. And like Leisa, I've been one of the people who's complained long and hard about the slippage in our vocabulary in Australia—to talk about the PhD as a research training degree. I was present in a medium-size group in which a former very senior official of the Department of Education, Training and Youth Affairs said, *If the PhD is only a research training degree, why does that have to be three years?* Several people stuttered and tried to make explanations that the PhD wasn't just a research training degree, but by then he'd moved on.

But the reason that we would find it difficult, even though it would be extremely attractive to introduce the MRes in Australia, is the absurdly rigid distinction between the way in which postgraduate coursework (taught degrees) and postgraduate research degrees are funded in the Australian higher education system. That would be a major obstacle, a policy obstacle, for us to overcome, though I think we should certainly try.

Leisa's already mentioned the Research Training Scheme, and it seems to me that the Research Training Scheme was quality assurance by stealth. The Research Training Scheme had, as one of its major objectives, the remedying of perceived inequalities of quality deficits in the practices of all parties in the research higher degree process. That is, institutions, supervisors and students. It was an attempt to assure quality by bureaucratisation that was based on the discourse of waste. We had, we were told, far too many research higher degree students in Australia. Too many of those students were in the wrong disciplines. Too many were in the wrong universities. Too many dropped out. Too many were unemployable when they finished. And all of them took too long.

Something, we were told, clearly needed to be done. The wastage could be eliminated quite simply if we managed students much more closely and much more precisely. Now it seems to me that the clear and present danger here is that we're implicitly and explicitly encouraged to manage our students' lives and works in ways that are undesirable and, anyway, impossible. Research higher degree students are our partners in research and the RTS is a threat to that. We've completely concurrent interests in trying to achieve quality outcomes, and we should put those quality outcomes ahead of the mad dash for numbers of completions, and it's about time we were able to make that an essential part of the quality debate in this country again.

I just want to say one thing in the eight seconds remaining about quality assurance. I was reminded of this by a colleague who just came back from a large and powerful country that's concerned about terrorism at the moment. And I was reminded of some of my international travels, as well, and it struck me that quality assurance is a bit like airport security. We're all prepared to put up with it. We all actually like the desired outcomes of airport security, but we get extremely irked by airport security when it takes six hours and it's ineffective anyway. It seems to me that the Australian higher education system, and postgraduate education system in particular, would be prepared to go all the way to strip-searching as long as we really did end up with a much better higher education system in the end. We're not opposed. We can't be opposed. We shouldn't be opposed to the attainment of quality, but we can and should, I think, vigorously engage in some debates with the various agencies that are trying to assure quality in this country. We should be engaged in debates about what quality actually means. There are far too many free-floating signifiers in this debate. There are far too many loose and clumsy surrogates for what quality might be. And it seems to me that completion rate and completion time may, in themselves, be fairly loose surrogates for quality. I'm not saying those things are unimportant, but I'm saying they're not, in themselves, very precise measures of quality at all. So I look forward to real debates about quality assurance in Australian universities.

POST-PRESENTATION QUESTIONS

QUESTION 1

I was quite amazed with the box that you put up showing the institutions' approaches to supervisory practice. It could have been identical to the sort of things that we see if you just took out the word 'main' supervisor and replace it with 'principal'. So I think we're heading in very much the same direction. I would be interested to see that one of the items was that the institution is to manage the workload associated with supervision, but there were no thresholds following that. In your experience, have you ever seen this sort of system at all?

Howard Green
There were no figures there simply because the point where we are with that report is in interim, and there will, I think, probably be figures there eventually. There are some. Practice currently varies significantly between institutions, but it is a real problem and it is a real problem which reflects both on the supervisors and on the students. Some institutions have gone down the road of setting norms, of setting criteria, of setting numbers of hours. It varies very much in terms of the way in which individual institutions manage the allocation of their staff resources. You've got to remember that in some British institutions, academic staff are tied down by the hour to what they do within a particular contract. In others, it's much more flexible and therefore the movement towards an allocation would be influenced by that level of diversity across the sector. But it is crucially important, and it is something for which there may well not be numbers, but there will be something which will talk about some threshold level.

QUESTION 2

Did you look at the correlation between teaching loads and research supervision? One of the problems we have here is that we also have very high teaching loads in undergraduate courses.

Howard Green
We didn't look at it in the sense that we've done no analysis of relationships or any kind of causal analysis between teaching loads and 'completion rates'. So I couldn't make any direct comment there. I think it's very rare for people in the UK to be solely supervising research students. They would have a portfolio of teaching and other activity. Depending on the institutional structures, that portfolio would be negotiated, or not, with, again, using the word in a very cautious way, their managers. So it varies significantly across the sector. I mean, there are cases where the majority of a colleague's time is spent supervising students and he does no classroom teaching. The problem areas, I think, are where supervision is an add-on to either teaching or to research, because fundamentally supervision isn't an add-on to anything. It's a fundamental part of one's portfolio. So whether it be teaching or research – and there are examples of supervision which goes wrong because the colleague who is doing the supervision is spending all his time doing the research not supervising in exactly the same way as spending all their time doing their teaching. So I think what we need to be looking at is not simply the teaching. It's the balance in the portfolio of activity.

QUESTION 3

Could you describe for us the line of responsibility of the Council for Graduate Education? The second question is about the qualifications framework, and I wonder if you could make a comment on the PhD and benchmarking?

Howard Green
The UK Council of Graduate Education—I was going to give you a flippant comment and say it has no responsibility to anybody. It has responsibility to its members. It's a completely autonomous organisation. It has charitable status and has no connection with government at all. It was set up in 1994 by Bob Burgess who is now VC in Leicester University, really as a means of sharing good practice amongst institutions who were beginning to recognise some of the problems that had been arising in the early 1990s with change. So, in a sense, it was established from the grassroots. On the other hand, it does an enormous amount of work in developing and spreading good practice. (See the UKCG website http://www.wlv.ac.uk/ukcge/ and you'll see everything that we do there.)

The 'National Qualifications Framework' and PhDs, yes. This is a fascinating one. I would simply ask you as a response, is the PhD internationally benchmarked? As part of the general harmonisation of the programme across Europe as a whole there has recently been the so-called Bolonga Agreement, which has been looking at the harmonisation of higher education. What that has shown quite clearly is that, throughout the European Union, the notion of a firmly benchmarked PhD does not exist. So I think benchmarking is a fundamental challenge for us, and I hinted at this in my talk. There are assumptions that it is already so, but I'm absolutely confident that it isn't. I'm not sure that we've got to the point yet of even understanding or appreciating that it isn't so before we can move on to whether it is.

If I can simply add to that a colleague and I, in an article which will come out in the *Journal of Quality Assurance* fairly soon, pose some of the questions which benchmarking PhDs against a qualification framework pose; and they're pretty tricky in places. But the major one is the acceptance that it isn't adequately benchmarked in the first place. I don't think we've even got to that point.

QUESTION 4

There used to be the problem are of insufficient staff to supervise, but there are some staff we don't want to have as supervisors.

Howard Green
Don't we all? To be honest, I think that there's no simple answer to the question. We've made a massive stride forward in even recognising that it's a problem. I think that's the first thing. There are all sorts of things around PhDs and research training which we haven't yet brought out into the open. One is benchmarking. One is competence of supervisors. One is training. One is the point that the colleague was making earlier when he questioned whether it was a training or a research problem? You know, a whole series of things that really haven't yet come out of the woodwork.

If I can just digress for a second. It's something I was going to say when I was talking about assessment but didn't. It always strikes me as strange that—whenever it was, thirty years ago—when I did my undergraduate degree, I sat in the Examination Hall and wrote ten papers in a week. I then did a PhD and I produced three and a half kilos of text. If you look at the average undergraduate and their assessment now, they don't sit in a room for nine days doing nine papers. But for the PhD we still ask postgrads to produce three and a half kilos of text. That tells me there's some problem about the way in which we assess. It tells me that we aren't really willing to challenge the notion of PhDs, research, and how we assess and validate it. So I think there are some fundamental issues which we haven't yet unpacked.

The issue around supervisor training is that we need to grasp the nettle and at least be clear that, yes, it's very easy to do it for new members of staff. Interestingly, the new members of staff are probably the people who least need it because they're nearest to the process. But if we argue that they're nearest to the process, it does beg the question, was the process that they went through good, bad or indifferent? As far as experienced members of staff are concerned as academics we're very happy to tell everyone else that they need training. In fact, that's what we do all the time. But we're not very happy about doing it ourselves.

I think it's very much a culture change that we need to come to. In the UK you've probably heard that we now have the Institute of Learning and Teaching, which is the organisation which validates professional competence in learning and teaching. They haven't yet come to the point of formally including supervisory training into their accredited programmes for learning and teaching, but they're very keen to do so. This would lead to a much more flexible and more accepted view about the need for training.

Just anecdotally one way of encouraging more experienced members of staff to get involved is to get them involved in delivery. In my previous institution we had an accredited training course for supervisors for ten years. We involved senior staff in the delivery of the program and persuaded others to attend. This had a major impact on the diffusion of the idea across the institution. If senior colleagues could be persuaded to come, then okay, it was all right. And I think that's something that you need to work on.

INTERNATIONAL POSTGRADUATE STUDY : WHAT IS GAINED/EXPECTED? A PERSONAL VIEW

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SPEAKER PROFILE: *Introduced by* PROFESSOR CHRIS MARLIN

Quite appropriately, the principal focus of a conference such as this is on the quality of the experience and outcomes for the individual postgraduate research student. Within this focus of the individual student, there are very similar issues, I think, for both international and domestic students in a particular country of study, whatever that country might be. And there are also some special issues for those international students within that community of postgraduate research students. In the case of international students though, there are also some broader issues in terms of what is going to be gained as an outcome of the study by the country of origin of the student. Consideration of those broader issues leads to a number of consequences, I think, for the conduct and supervision of those international students by host countries.

These are some of the sorts of issues that are going to be explored this morning by Professor Vicharn of the Thailand Research Fund. Professor Vicharn is a Special Advisor to the Thailand Research Fund and has a long and distinguished career in medicine, in research and in higher education. He has held several senior positions in Thailand universities, including the Membership of the Councils of several Thailand universities. He has also experienced the life of an international postgraduate student at the University of Michigan in the United States in the 1960s.

Following Professor Vicharn's presentation we will hear two brief presentations giving the perspective of an international student and the supervisor of international students respectively.

Distinguished participants, ladies and gentlemen.

First of all, I would like to thank the organisers of this meeting for inviting me to participate in this very important meeting. It is really an honour and privilege to address this meeting from my humble standpoint of non-expert opinion.

Let me emphasise that what I am going to express is my personal view without objective supporting data. I cannot claim or guarantee that my view is representative of my colleagues back in Thailand. My 24 Thai colleagues who attend this meeting might have different or additional views. I cannot claim that it will represent views from other low-middle income countries like Thailand.

'Postgraduate study' in this presentation deals almost exclusively with research-based postgraduate study.

I was asked to express my view on 5 questions:

1. What do countries such as Thailand hope to gain by the exchange of postgraduate research students?
2. What are the advantages and disadvantages of foreign vs. in-country postgraduate education?
3. Are we satisfied with the results of international postgraduate programs?
4. How will the current situation be changing in the future?
5. How is Thailand affected by the current focus on quality assurance in the UK, Australia, NZ, etc.?

I will focus on answering the first question and hope that the other questions will be mostly covered automatically.

EXPECTATION

SIX CATEGORIES OF IMPACT

In sending students for postgraduate study abroad countries like Thailand should aim at six categories of impact; national or societal development, research system development, higher education system development, institutional development, individual development of prospective researcher or academician, and the development of international relations in various aspects.

EXPECTATION ON THE NATIONAL/ SOCIETAL LEVEL

Countries like Thailand have to shift the means of wealth creation from accumulation to innovation creation to address the era of the knowledge-based economy and society. Under innovation creation policy we need strong knowledge-bases, research-bases and science-bases. We need to improve our capability for self-reliance in various aspects. For self-reliance we do not mean complete self-reliance or isolation. But we mean inter-dependence or exchanges with partners. Under self-reliance capacity building we have to do more collaboration and networking, both in-country and abroad.

Thailand is now aiming at building capacity of self-reliance, employing postgraduate study as a tool. The aim is not only self-reliance of higher education, but also in science and technology development, and research development and innovation.

To achieve a certain degree of self-reliance, our people and nation need self-confidence in our brain capacity. In postgraduate study we would like to have activities that create skills in Thai students to use their brains to the full potential as well as creating a feeling of self-confidence.

RESEARCH SYSTEM DEVELOPMENT

We would like to strengthen our nation's research system. Effective research system should be complex and adaptive, or in another term chaordic. It should be both demand-pull and supply-push. It should cover the whole spectrum of Newtonian (blue sky basic research), Baconian (R&D type) and Jeffersonian (civic or demand-pull) research. This would mean that we want our PhD graduates to go back to build up and work in this complex research system. So, diversity of postgraduate research experience is needed. Postgraduate research should not be solely based in university laboratories. Some students might have industry-based postgraduate research. Some might do community-based research. If possible, we would like our students to have exposure to the environment of doing research in various types of research bases.

HIGHER EDUCATION SYSTEM DEVELOPMENT

During the last 20 years Thailand has transformed her higher education from an elitist one into higher education for the mass with enrolment of 20% of 18-24 age group. Now the main objective is to develop a group of higher education institutions into research universities building up a certain degree of self-reliance in higher education system. To achieve the goal our prospective academic staff who are in postgraduate study abroad programs should learn the principle and practice of research culture. Postgraduate study should give our students an understanding of the dynamism of academic disciplines and the opportunity and challenge to create innovation in the system.

We want our higher education system not to be an isolated ivory tower but to have active linkage to the society and community. It would be helpful if our postgraduate students abroad have experience in how this linkage is being exercised during their postgraduate student life.

INSTITUTIONAL DEVELOPMENT

Each higher education institution has to survive by quality, efficiency and effectiveness. The society everywhere, including Thailand, is willing to pay less while demanding more from universities. It is a global trend that universities will have to earn, not to ask for public money. One way of earning more money is to do research and to serve the society by being the powerhouse of a knowledge-based economy and society. In order to perform this function universities have to adopt a networking culture. These networking activities are not confined within one country but must include international linkages. We would like our international postgraduate students to learn this networking skill and to maintain networking relationships with their former supervisors and universities.

During their postgraduate years it would be helpful if supervisors took care of mentoring in the academic life and of how to exercise responsibility in developing one's own institution in various ways.

INDIVIDUAL DEVELOPMENT

I see postgraduate study as personal development of learning, how to learn by knowledge creation or research. The student should learn the ability to focus attention on only one main subject for 3-4 years, the training for a long attention span. This ability is very important to future academic and working life.

Most of the Thai postgraduate students will go back to serve academic duties and a good proportion will have to be postgraduate research supervisors. The experience of enjoyment and tension during their postgraduate study will enable them to better understand the psychology of their future postgraduate students.

The most important development should be of the imagination and creativity skills. People might not be borne equal in this respect. But it will be very valuable for the postgraduate life if this precious quality can be further nurtured, not destroyed.

We do not want our postgraduate students just to work for the PhD, but to socialise and absorb the academic culture from departmental activities as well as wider university scholarly activities and research societies.

Attitudes

There are many relevant attitudes for being a good academician or good researcher that we would like our postgraduate students to develop, such as being challenges-takers or having entrepreneurship. The attitude of knowledge producer more than being a knowledge consumer; the attitude of outbreeding of ideas more than inbreeding; being outward- and forward-looking more than inward-looking; the attitude for excellence, not mediocrity; the attitude of being society-oriented or problem oriented more than being discipline-oriented or technique-oriented in doing research.

Skills

We hope that during their postgraduate study our students will have the opportunity to learn or be trained in many skills important for their scholarly lives. To me the most important skill should be the research question development skill. It is how to transform a problem or an opportunity into a research question. Other skills are on research methodology, analysis and synthesis skills, skills on information search and making critical appraisal of the information. In Thailand academicians are good at analysis but weak in synthesis. We are comparatively good at information searching while weak in critical appraisal. It would be very helpful to our research base and knowledge base if our new blood are more strongly trained in the skills in which we are inherently weak. Other skills or experience are conference presentation, manuscript preparation, manuscript review, research proposal writing and review, writing for the press and abstract writing. By abstract I mean to abstract part of a paper. I have found that too many Thai researchers do not know how to write a good abstract or what a good abstract is.

Another important skill is research ethics. Real-life daily ethical issues are very important to developing the value system of a good researcher. We would be very grateful if supervisors of our postgraduate students mention or dialogue important ethical issues in daily academic life.

Knowledge and Experience

Knowledge gain is usually central in postgraduate study. We hope our postgraduate students will learn not only the core subject matter in the discipline of study but also learn some little bits of related disciplines. We not only need the depth but also the breadth of knowledge. To be prepared for future scholarly life the postgraduate student should learn to know people in the field and related fields. They should know academic institutions, journals and databases, and granting agencies. Knowledge of the 'demand side' of knowledge creation will equip postgraduate students with the attitude and capability to work with research 'users'. Thailand has too few researchers who have the attitude and courage to work with the demand side.

Longterm Relationship

Longterm relationship with postgraduate supervisors and institution should be instrumental to the long-term individual development of researcher. This longterm relationship should be made explicit between the four parties involved; the sending institution, the host institution, the student and the supervisor.

Life Experience

What is gained from international postgraduate study should not be confined only to academic or scholarly activities, but to include life experience in a different culture. It would be more beneficial if the environment is multi-cultural. Our world is turning into multi-cultural global villages.

Working for a PhD is not easy. The experience of stress during the period should help cultivate coping skills.

Postgraduate research work experience should help cultivate work relationship skills as well as inter-personal relationship skills.

THE DEVELOPMENT OF INTERNATIONAL RELATIONS

In a more globalised world everything is changing rapidly, including international relations. Everything is more knowledge-based, including international relations. This knowledge base is becoming a more important instrument for international relations. Knowledge-based international relations aim at mutual benefit of co-development into a knowledge-based economy and society. It centers around the dynamism of more equal relationships in a complex-adaptive regional and global system.

HOW ?

The organiser of the conference has asked me to express my view on what are expected out of international postgraduate study, and I have tried my best. Now we should go a bit further to try to answer the question of how. Actually some points of how have already been mentioned. But let me summarise the points.

1. **Prior agreement**
   Before the start of postgraduate study there should be agreement between the student, the institutions on both sides, and the supervisor on:
   - work of the student after completing PhD
   - knowledge and experience to be gained
   - area of postgraduate research.

2. **Orientation of postgraduate research topic**
   The balance between being student-oriented and supervisor-oriented should be considered.

3. **Time spent**
   Every party involved expects postgraduate study to be completed in a reasonable or scheduled time. Unusually long times should be explained. Intentional delay by the supervisor for the purpose of research labour is not acceptable.

4. **Supervisor - student relationship**
   An evolving relationship is expected. More help and guidance at the beginning, changing to more autonomy of the student at the end. But this relationship will vary and be individualised.

5. **Academic and research atmosphere**
   An atmosphere of dedication to, and enjoyment of academic or research activities is desirable. We would like our postgraduate students to absorb the habit of working hard while enjoying the scholarly life. Cross-disciplinary experience would help when they go back home and have to work in a multi-disciplinary team.

6. **Good attitude to the motherland world**
   Reminders and advice from the supervisor of how to work and be successful in scholarly life in the motherland where facilities and problems are different will help postgraduate students' re-integration into the homeland situation after finishing postgraduate study. Exposure to relevant experiences in various ways will be even more helpful.

SUMMARY

In summary, I have answered the question *What is gained or expected from international postgraduate study*? by giving six whats and six hows. The six 'whats' are the society, research system, higher education system, the institution, the individual and the international relations.

The six 'hows' are the agreement, the more student-oriented postgraduate research, the time spent, the relationship, the atmosphere and the preparation to work in the motherland.

FOREIGN VS. IN-COUNTRY POSTGRADUATE EDUCATION

This is not a matter of either-or, but both-and. We need both. A balance between the two to have a certain degree of self-reliance in higher education. To prosper in a knowledge-based era, a country has to have exchanges and networking in many systems, including postgraduate education, with foreign countries.

SATISFACTION WITH INTERNATIONAL POSTGRADUATE EDUCATION PROGRAMS

We are largely satisfied. But there is room for improving, the details of which have been partly mentioned. We should have a more balanced linkage in term of country. We should have more diversified countries for the exchange. In terms of quality we want better capability of the research question development and critical appraisal. More ability and willingness to work in the local atmosphere and facilities is required.

FUTURE SITUATION

We expect a more balanced exchange both in terms of country distribution and in terms of the real meaning of two-way exchange. We hope to do much more exchange with our neighbours and countries in Asia-Pacific Region. More diversified postgraduate research is expected.

QUALITY ASSURANCE

We like to have quality assurance. We would like to upgrade the quality of our higher education and postgraduate research. That is the philosophy behind The Thailand Research Fund (TRF)'s RGJ (Royal Golden Jubilee) PhD Program in which 25,000 PhDs are expected to be produced in 25 years with high or international standard quality. We have put many QA mechanisms into the program. For example, before graduation the student must

have published at least one paper in an international journal. Another QA mechanism is to have foreign co-supervisors. The third mechanism is to provide support for the student to go abroad to do research with the co-supervisor for about a year. There are many other quality assurance mechanisms in this scheme which I will not go into in detail. But I would like to mention that among the 35 countries of the co-supervisors, Australia ranks third, next to USA and Japan. One hundred and fifty seven out of 1,270 students have Australian co-supervisors. I would like to invite more Australian professors to participate.

CONCLUSION

Postgraduate research is a tool of learning how to learn by knowledge creation. It is the heart and brain of a knowledge-based economy and society. In order for postgraduate education of any country to compete in a complex adaptive world of higher education it must have active international exchanges.

POST-PRESENTATION RESPONDENT

Steve Warren
Council of Australian Postgraduate Associations
University of Western Sydney

Sawadee Khrap. Kob Khun Kraph (Greetings and thank you.) Thank you for your helpful insights on Thailand's quality expectations and need for postgraduate research, and needs of students studying overseas. May I offer a few comments on the needs of international students studying in Australia? Much of what I have to say comes from experience both as a student being involved with student committees at my own institution at the University of Western Sydney, and through some years of involvement with CAPA, the national body of postgraduate students where we've identified a number of issues concerning international students. Hopefully some of these points that I raise will be points that are easily understood by all of you, or are things that you have already put into your considerations when accepting international students.

We need clear information on what Australia and what our institutions are offering. We need to match what the expectations are of students when they arrive in Australia. I would add, that cross-cultural training is paramount for better understanding and quality of supervision. Communication between students and supervisors and with student peers can be hindered or enhanced depending on our understandings of cultural issues. Clear agreements need to be reached, as Professor Vicharn mentioned. Those agreements should be signed off at the beginning of a student's placement at the university, and should cover all those issues about communication and understandings of access to resources, etcetera.

Even issues such as plagiarism, which some of us may have a reasonable understanding of in Australia, can have very different meanings in different cultural settings. We need to also be mindful of the needs of access to health, public transport issues, and income support for international students. These can be very difficult issues for students when studying in Australia. Isolation from home culture can be very daunting. We need to link students in with university and student-run activities. We need good orientation programmes, including access or information on international clubs and societies from their own cultural background, or international students in general. Even information on what's available in the community. Many ethnic organisations in our multicultural country have organisations in our community that we can tap into. Having events on campus to also highlight our cultural diversity, both within Australia and from overseas, can be very, very helpful. Things like food fairs or something like we have at the University of Western Sydney called 'Unity Week' where we try to highlight each year the focus and importance of multiculturalism in Australia.

We need to somehow, with the funding pressures, avoid seeing international students as cash cows. This is not only a source of income for Australia, but, which I'll cover later, there are more important international relation issues about our interaction with international students. The international benefits both from within Australia and for relations across international regions, for better understandings, break down barriers and misunderstandings. It also of course has economic and cultural benefits, and social benefits. As Professor Vicharn mentioned, one of the skills for students is being outward and forward looking. We need to embrace that attitude to our interactions in sharing with research knowledge within Australia and with international students and in international interactions.

POST-PRESENTATION RESPONDENT

Dean Forbes
Pro Vice-Chancellor (International)
Flinders University

Firstly, I'd like to thank Professor Vicharn for his stimulating speech. When I read an earlier draft, it immediately set me off thinking about my own experiences and of course that's the purpose of these sorts of presentations. They do stimulate a lot of ideas and reflections on our own experience. I, in fact, have supervised twenty-one PhD research students, I realised when I counted them up. Not all at the same time of course, although at times it felt like that. But it wasn't. So my comments are going to be both those of a supervisor and from a personal point of view.

I agree with Professor Vicharn in his point about the importance of the diversity of nationality of students—research students in particular. When I think back over the twenty-one students who I have worked with, they are a very diverse group. Five from Indonesia, three from Australia, three from China/ Hong Kong, three from Malaysia, two each from Thailand and Japan, one from France, one from Korea and one from the UK.

Now, I guess there are two aspects of this which are important. One is the multicultural skills, or the skills that we as supervisors need to deal with this, and that shouldn't be underestimated. But the other issue that I really wanted to stress is that I very much believe in the idea of productive diversity in research because it seems to me that, by virtue of that diversity, we are much more creative and stimulated in our environment, and so I am very much a great believer in the productive outcomes of that diversity. Also, from our students' point of view, it really replicates the environments that they're going to experience through their careers, whether those careers are in academia as researchers or in other parts of the workforce. Whatever they are, the research networks which they will continue to operate within, of course will be extremely multicultural. They'll be spread across the world.

The second point I want to make is that I agree also with Professor Vicharn's strong emphasis in his paper on the need through postgraduate supervision to foster both, on the one hand, the creative and critical skills of postgraduate students, and on the other to inculcate the discipline of concentrating on an exhaustive study of a singular research problem. We need to recognise the broader education role of supervisors thought this does load up supervisors with a more substantial range of roles and responsibilities than they might otherwise have. I also strongly support his endorsement of the need for diverse kinds of research; that is, we shouldn't be focusing on just one kind of research. We should embrace research whether it's purely theoretical or practical, or whether it's university-based or based in other institutions such as research institutions.

The third issue is a related one. As a supervisor, I always feel that I confront a dilemma with any new PhD student. To what extent do I go about guiding that student towards a research question in which I feel I have a high level of expertise, or a sufficient level of expertise? Or to what extent do I allow the student to develop their own interests, even if that risks them getting into areas where I become much less confident and less certain of the outcome? Now, this seems to me to be particularly exacerbated with international students, and that's not a problem but it's an issue that needs to be dealt with. In the end, it seems to me the supervisor's judgment about what's in the best interest of the student and what the student really wants to do needs to be balanced. We have to be aware, of course, that

within our research institutions in the universities and within the Commonwealth government, for instance, there is a desire to focus research more and more, and to a certain extent this does make this dilemma more apparent. That is, this tension between the student wanting to go in a particular direction and our need to provide some sort of group focus to much of our new research.

The fourth point I want to make is that, as Professor Vicharn said, most postgraduate research students in my experience will go on to careers in academia. For instance, of the twenty-one students I've been involved with, fifteen were either academics or went on to be academics and researchers. Therefore, I very much endorse the view that part of the supervisor's responsibility is drawing of students into both the postgraduate culture and the research culture, and help them to develop the set of networks which is going to support them in their post-postgraduate career. We do take on a responsibility to equip those students to develop their own institutions when they return to them. However, of course this again puts pressure on the supervisor because it's an extra role to play.

The fifth and final issue I want to comment on conerns the time spent by the student in postgraduate research. Professor Vicharn mentioned this and I think it's a very important point. The PhD degree for instance is, in theory, there to be completed in three years, and there's no reason why it shouldn't be completed in three years if the actual research project is designed correctly or designed in an appropriate way. However, if we are to always achieve the broader range of goals implicit in Professor Vicharn's argument, that is fostering creativity, creative diversity and so on, then it does make it more doubtful whether we're always going to be able to stick to those time limits. Now, I think this is another tension which is continuing to build up, because we must appreciate that greater creativity actually does take longer, almost invariably. It's unpredictable, but it almost always takes longer. But on the other hand, there is always the pressure through funding agencies to maintain or to stick to the minimum time or the appropriate time for the degree.

POST-PRESENTATION QUESTIONS

QUESTION 1

Professor Vicharn mentioned the multilateral cooperation between Thailand and Australian, and some other countries in terms of research and development. It seems to me that the outflow of research students is from Thailand to countries other than Thailand. I was wondering if there's any attempt from the Thai government to promote Thailand as a hub for research in a specific area, therefore we could be able to learn the research culture from international students from other countries?

Professor Vicharn
Thank you very much for the very good question. The direct answer is no, we still don't have that kind of arrangement. But the Thailand Research Fund and a government department, the Department of Technical and Economic Cooperation (DETC), has agreed upon a special arrangement to support students from our neighbouring countries like Laos or Cambodia, Vietnam, Myanmar, to have graduate studies in Thailand. DTEC will support the Master's students, and those Master's students, if they are good, they will be further supported by TRF for their PhD. We hope to create bilateral collaboration as you mentioned, but this will be a long-term aim. You have to go back and work on this.

QUESTION 2

I'd like to appeal to Australian institutions to taking a more active role in response to your interest in collaborative research projects. I wondered if you'd like to say a little bit about how those foreign links were established, and developed?

Professor Vicharn

Thank you very much for these helpful questions. The way we manage this special 'Royal Golden Jubilee PhD Programme' is upside down in terms of the Thai way of doing things. We first approve the curriculum. The curriculum must be strongly research based. And then with the curriculum, we approve the Thai supervisor. They must be strong researchers with a good number of international publications. And then we give the scholarship or the grant to the Thai supervisor. The Thai supervisors themselves find the foreign co-supervisor. And then the Thai supervisors also find the students by themselves, but with guidelines from the TRF. In order to attract very good students, the Thai supervisor with a very good foreign co-supervisor will be advantageous in attracting good students.

So the role of the TRF or myself is matchmaker. We try to match you and the Thai. Actually, before the conference I visited Adelaide University to try to understand what's going on there and what the professors are doing and to get information in order to tell our supervisors back in Thailand so that they can communicate. So that's the way we do the matchmaking.

QUESTION 3

In Australia there are Split Programs where the student actually spends time in Australia with their Australian supervisor as an Australian student virtually, and then goes back and spends half their time in Thailand. I was wondering whether you'd actually considered a double-badged degree so that you'd actually come out with a degree from both universities.

Professor Vicharn

This Royal Golden Jubilee PhD Programme doesn't have that arrangement. But there are some universities in Thailand who have agreements with universities abroad for the student to get a degree from both universities, Thailand and abroad. And the Thai universities try to convince the TRF to support part of that. We agree. But the university and the student must find some extra support to pay the tuition fee or extra payment for the programme. So it's a possibility. It's a flexibility that we can build into the system, but that Thai university must find extra support from somewhere else.

Respondent

Just following up that last question, I understand that my University has just signed an agreement with a Thai University for a PhD student, in the particular research area of rainforest ecology. It's based on a long-term research collaboration between the researchers at both institutions. The arrangement involves the Thai student attending Griffiths as an international fee-paying student for the first semester and the last semester of the programme, and undertaking the rest of their research in Thailand. I think this is a model that Australian institutions are in position to develop, so that's a wonderful indication of collaboration.

THE COMMONWEALTH'S ROLE IN ASSURING QUALITY IN POSTGRADUATE RESEARCH EDUCATION

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SPEAKER PROFILE: *Introduced by* PROFESSOR TERRY EVANS

Dr Evan Arthur is the Assistant Secretary of the Innovation and Quality Branch of the Higher Education Division of the Department of Education, Science and Training.

The Branch provides policy advice on research issues in the specific context of higher education and in the broad context of national research and development; develops initiatives and provides policy advice on a range of strategic issues and international trends affecting higher education; manages the National Office of Overseas Skills Recognition; promotes the Australian quality assurance framework and provides advice and assistance in relation to the recognition of qualifications acquired from overseas.

Firstly, I wish to apologise to you that Dr Carol Nicoll, who was to speak to you today, is unable to be here. I'm afraid that you will have to do with me instead.

Let me first say that the Commonwealth recognises and values the importance of research education in universities. All of Australia's universities currently engage in research education, and universities are the principle sites for developing and training the nation's research workforce. The presence of large numbers of research students and postdoctoral candidates associated with our universities is a feature that helps to distinguish our universities from other research enterprises.

Many research students undertake a significant portion of research degrees in a non-university setting – such as public research agencies, including CSIRO, as well as with Cooperative Research Centres and industry. This trend is to be encouraged as it provides students with first hand research experience in a non-academic setting. Nevertheless, although many students take this opportunity, the monopoly of higher education institutions in accrediting and awarding degrees ensures that our universities will continue to retain a leading role in research education.

Over the past decade, research student enrolments in our universities grew strongly, particularly in relation to doctoral programmes, from around 16,330 students in 1990 to 37,370 in 2000, or an increase of almost 130 per cent. Much of this growth occurred in the first half of the decade as institutions responded to the challenges flowing from the Dawkins reforms of the late 1980s. These reforms saw the number of universities – each of which was expected to engage in research and research training – virtually double. A significant number of staff also took the opportunity to upgrade their own qualifications.

The large numbers of research students in our universities contribute in significant way to research output of the sector. According to Australian Bureau of Statistics (ABS) data, by 2000, 70 per cent of Australia's researchers in the higher education sector were postgraduate researchers, up from 62% in 1990. While this is not to say that research students are responsible for anything like 70 per cent of the sector's research outputs, they clearly play a vital and increasingly important role in Australia's higher education research system.

Research students also play an important role in the diffusion of knowledge between universities and other components of the innovation system. As students complete their research qualifications, they commonly move to other institutions, research organisations or industry, within Australia or overseas, in order to pursue their careers. This pattern of movement helps to establish and sustain professional networks, diffuse knowledge and skills, and is an important mechanism for promoting innovation.

The main focus of my address to you today is the Research Training Scheme, or the RTS as it is known, in particular, and the Commonwealth's role in assuring quality in postgraduate research education, more broadly. As you will be aware, the introduction of the RTS was one of the reforms outlined in the White Paper, *Knowledge and Innovation*, which was released at the end of 1999. These reforms have now been fully implemented, and are being bolstered by the additional funding announced in *Backing Australia's Ability*, released early in 2001.

In developing the RTS, the Government took account of widespread concerns expressed by students and employers regarding the quality and effectiveness of Australia's research training system. In the preceding years, there had been considerable discussion concerning the value and relevance of the traditional model of the university research degree. Some industry representatives commented on the relative narrow range of skills acquired by research graduates.

Many graduates themselves also voiced their dissatisfaction with the quality of their experience. Their disillusionment was reflected in high drop out rates and long completion times. To the Government, this represented a significant waste of both talent and money.

An evaluation of the completion rates of postgraduate students who commenced their studies in 1992, demonstrated that fewer than 30 per cent of Masters and PhD students who were enrolled in law, business and economics, architecture and building, education and arts, humanities and social sciences, had finished their degrees within five years. While there were a number of anomalies with the data, such as difficulties with tracking students who defer or transfer, which may have exaggerated the seriousness of the problem, this study confirmed that completion rates for research degrees were problematic.

In addition to concerns with the perceived narrowness of the traditional form of research degrees and problems with retention and completion rates, other weaknesses identified in certain parts of the sector, either on the basis of empirical observation or anecdote, included:

- poor environments associated with poor supervision, lack of departmental support and impoverished infrastructure;
- a mismatch between institutional research priorities and student interest; and
- limited opportunities for students to gain experience in appropriate research environments, creating a gap between academic researchers and industry.

The RTS is intended to:

- enhance the quality of research education provision;
- improve the responsiveness of institutions to the needs of their students;
- encourage institutions to develop their own research education profiles;
- ensure the relevance of research degree programmes to labour market requirements;
- improve the efficiency and effectiveness of research education.

It is designed to achieve these objectives by providing strong incentives for universities to take care in selecting their research students, and for providing their students with a highly supportive and stimulating research environment, which enables students to complete their qualifications in a timely manner.

This contrasts with the former funding framework for research training, which many of you will recall provided few, if any, direct incentives for institutions to improve the quality or relevance of research training.

The Commonwealth consulted with the sector during 2000 and 2001 to fine-tune the detailed implementation arrangements for these new schemes which are being fully implemented this year. However, transitional arrangements apply until 2004, to cushion the impacts on institutions that lose funding and have to make adjustments.

The Commonwealth will monitor the progress and outcomes to see whether the reforms to research and research training are having a positive impact. However, we also recognise that, even before the new funding framework was in place, many universities were committed to improving the research education experiences of their students.

For example, some universities have developed a range of new training options, including professional doctorates and other postgraduate qualifications. Short courses are being delivered to students on specific topics, such as project management, written communication, and intellectual property management to enable them to acquire a wider range of skills and knowledge.

Some universities have established graduate schools in the style of the North American 'whole of university' graduate school, while others now include rewards within their internal funding mechanisms for quality research outputs. Under such arrangements, Faculties and Departments, and the individuals within them, can secure for themselves an increasing share of research funding and places for research students through effective performance.

The Commonwealth considers these to be positive developments, which are likely to become more widespread through the higher education sector. Conferences such as the one you are attending today provide a vital role in promoting the exchange of ideas and diffusion of best practice.

However, I would like to add a note of caution – the formulae for distributing RTS funding across the sector has never been intended to serve as the sole basis for allocating funds within institutions. I believe that it is in the long-term interests of universities to be strategic in their internal funding decisions and to take account of their specific needs and circumstances, as well as the performance of their researchers.

The Commonwealth will also be monitoring other issues which have arisen as possible areas for concern. Some institutions appear to be withdrawing HECS exemptions before students' entitlements have been exhausted. This disadvantages students as well as the institution because it, in effect, creates separations which results in the funding for those separations being returned to the funding pool and away from the institution.

Student entitlements are being monitored through the higher education student collection. Compliance with the new entitlements is essential to ensure the desired impact of the research training arrangements.

Another area of concern for the Commonwealth is the level of fee-paying and fee-waiver research students, particularly if growth in these numbers impacts on the overall quality of research training. We do not want to return to the situation where universities' own aspirations run ahead of their capacity to deliver quality research training experiences and outcomes, thus undermining the original intent of the RTS.

A number of institutions have raised issues concerning the regional protection impacts of the RTS. As many of you are aware, a three year adjustment package, comprising capping and regional protection, has been put in place to allow institutions a period of time to adapt to the changes in funding. Some regional institutions have expressed concern that once the safety net provisions afforded by the transitional arrangements come to an end, their capacity to provide a high quality research training environment may be compromised. Other institutions (including some regionals) claim that the five per cent capping limit constrains their ability to grow in line with their performance.

We will monitor these impacts and see how they develop.

Finally, there are also concerns about the integrity of student data submitted by institutions. Where the data impacts on the allocation of funds, it is imperative that the Commonwealth has confidence in the data's accuracy, in the interests of public accountability. To provide the Commonwealth with the necessary level of confidence, independent audits (paid for by the Commonwealth) of student data for research schemes will be undertaken. We expect these audits to be conducted over the next few months and they will focus on the accuracy of the data provided and institutions' processes for collecting, storing and providing data to the Department. The audit process will be ongoing with a cross-section of institutions being selected each year.

The data issue is important for a number of reasons, not the least of which is because of the apparent shifts between high and low cost places within individual institutions. These shifts can have a detrimental effect on an institution's future funding level under the RTS. Under this scheme, each institution is allocated funding for a certain number of places in line with the data provided by the institution about the number of students enrolled in high and low cost places. If the balance between high and low cost courses is later found to be inaccurate - for example, if the institution subsequently revises the data and shows that it enrolled fewer students in high cost places and more students in low cost places - the institution's future funding will be adjusted accordingly. It is therefore imperative for university to provide accurate data to ensure the right funding is allocated.

RESEARCH AND RESEARCH TRAINING MANAGEMENT REPORTS (RRTMRs)

Knowledge and Innovation also instituted a planning and reporting process that would provide for an on-going dialogue between the Commonwealth and institutions on accountability of public funds. I am of course referring to the Research and Research Training Management Reports which universities are required to provide to the Commonwealth in order to be eligible for funding under the Research Training Scheme.

These reports are designed to provide a public snapshot of the way each institution directs its research efforts, its areas of research strength, and how it performs in those areas. They provide an overview of each university's distinctive contribution to the national research and innovation systems and inform prospective students, collaborative research partners and industry, as to the way each institution has chosen to direct its research and research training activities.

These reports are about achieving transparency in the way each institution sets its goals for research and research training and making institutions publicly accountable for their use of public funding. As you are probably aware, the reports will be published this year – on both the web and in hard copy, and we intend to include a chapter of analysis which will provide a more detailed overview of any sector developments and trends that have emerged from this second year of reporting.

The reports also provide a benchmark for the external verification and assurance of the quality of research and research training at the national level as the Australian Universities Quality Agency (AUQA) will seek to verify the claims made in the reports during the regular audit process. As you are probably aware, the quality audits to be conducted by AUQA will be starting this year and are based on a self-assessment and a site visit. AUQA will investigate the extent to which institutions are achieving their missions and objectives and assess the adequacy of the institution's quality assurance arrangements in the key areas of teaching and learning, research and management, including the institution's overseas activities.

During the 2001 profiles round, there were three areas of particular interest in relation to the Research and Research Training Management Reports: areas of research strength; postgraduate student attributes; and commercialisation and management of intellectual property.

Most universities wrestled successfully with identifying their areas of research strength, which have now generally been bedded down in most institutions. Some of you may have been engaged in considerable debate within your institutions about how to identify these areas of strength. In line with the principle of institutional autonomy, the Commonwealth has never intended that such reports prescribe how universities should identify their areas of research strength. Rather each institution has been encouraged to arrive at its own approach to identifying these areas – mindful of the particular mission, context, resources etc of each institution.

The Research and Research Training Management Reports have also required institutions to identify the attributes that they expect of postgraduate students. These attributes should be explicitly presented and qualitatively different from those for undergraduate students. The point is that the postgraduate research training experience should be about 'value-adding' for the student – and students are entitled to have an expectation that this is spelt out by the institution. It is also a way of publicly acknowledging something that many institutions have realised and acted upon – that the research training experience should be richer than the completion of research and writing up of a thesis.

Involvement in professional development opportunities in areas such as project management, management of intellectual property, and leadership skills should also be part of the experience. But just as the movement to embed graduate attributes in curriculum across the sector has taken some time, I imagine it will take some further time before these other generic skills are embedded in the research education experience of the majority of students. It will require a particular focus during supervisor training – so that supervisors come to understand how they will integrate generic skills development in the research training process.

The third area on which the Research and Research Training Management Reports focussed was in relation to the management of universities' intellectual property (IP) – including the identification and protection of IP - and to the timely and effective commercialisation of research. Future reports will, require institutions to provide more information regarding these activities.

Despite recent improvements in this area, Australian universities still lag behind international best practice in relation to the rates of patenting ideas and inventions, and in generating licences and spin-off companies. There is a push in some Government circles for the adoption of a 'use it or lose it' model of ownership of intellectual property, somewhat similar to the Bayh-Dohl in the United States, as a means of improving our performance in these areas. Under the US 'Bayh-Dohl' model, institutions that fail to take action to protect and commercialise intellectual property arising from federally funded research could lose ownership of the IP to the funding body. In Australia, both the Australian Research Council and the National Health and Medical Research Council have made it clear that they are not interested in claiming an interest in the intellectual property generated from research funded by them. An alternative 'use it or lose it model' could see ownership revert to the researcher if the university failed to take appropriate action in a timely manner.

While it is yet to be seen whether the Government will implement a new IP framework of this nature, it is nevertheless clear that the Government will retain a strong interest in encouraging improved performance by universities in commercialising the outcomes of their research. As a result, the Government interest in commercialisation issues in Research and Research Training Management Reports can be expected to increase. In summary, Research and Research Training Management Reports are now key drivers of transparency and accountability within the higher education research framework. As I said earlier, to enhance accountability, the AUQA will verify the claims made in the reports during their regular audit process.

BACKING AUSTRALIA'S ABILITY

Backing Australia's Ability is the largest commitment to science, research and innovation by any Australian Government, and funding has already begun to flow through – over two-thirds of which will be administered by the Education, Science and Training portfolio. These measures have the potential to deliver significant social and economic benefits to the Australian community.

The funding boost provided by these initiatives, worth $3 billion over five years, will substantially benefit the teaching and research environment in universities. Research students and postdoctoral candidates, in particular, can expect to benefit from the additional funding provided for ARC competitive grants, including postdoctoral fellowships, for research infrastructure, and for the Cooperative Research Centres programme.

The new Centres of Excellence in biotechnology and ICT will also provide outstanding training environments for research students. This will also be the case for students associated with the new Linkage Priority Centres of Excellence in the ARC's four priority research areas of genome/phenome research, complex/intelligent systems, photon science and technology, and nano- and bio-materials identified by the government earlier this year.

Finally, the Postgraduate Education Loans Scheme, PELS, will also encourage and support individuals wishing to undertake postgraduate non-research courses as a means of upgrading or acquiring new skills. Although this initiative will not directly assist research students, the program will be of major benefit to your colleagues pursuing higher degrees by coursework.

CONCLUSION

The Commonwealth recognises that its investment in research is a long-term one and that it is best served by an advanced research planning capacity by universities. As a result of the *Knowledge and Innovation* reforms, this planning is now being sustained by a clear accountability and quality assurance process.

It is perhaps worth noting here that the latest Australian Bureau of Statistics figures released last Friday, show that higher education expenditure on research and development has risen from$2555.1 million in 1998 to $2774.6 million in 2000 (in current prices). This represents an increase of 9 per cent and is positive news indeed particularly since it predates the substantial funding increases that the Government has provided since the 1999/2000 Budget, such as the $614 million boost to medical research, and more recently the *Backing Australia's Ability* initiatives.

However, the period of wider higher education reform is not yet over – as most of you will be aware from the media, Dr Brendan Nelson, the new Minister for Education, Science and Training has indicated that a wide ranging review of the sector will be undertaken this year. The full scope of this review, including the extent to which it might include research issues or not, is yet to be announced.

With regard to the RTS, the Commonwealth is now concerned at monitoring progress to ensure that the *Knowledge and Innovation* reforms are working.

POST-PRESENTATION RESPONDENT

Mark Finnane
Dean of Graduate Studies
Griffith University

Universities had responded to the introduction of the RTS and other changes associated with the Green and White Papers in a number of ways. They included:

1. Policy changes - the RTS was driving universities to look at their policy frameworks for research higher degree studies, especially with a view to ensuring better quality control and securing best outcomes, including timely completions.
2. The focus on completions and other components of the RTS and IGS funding formulae, rather than on enrolled load, was leading universities to look at what instruments they had to deal with poor performance within institutions. There was a danger however that poor performance would be defined too narrowly and that the diversity of the national research system could suffer.
3. As had been noted in the presentation by Howard Green from the UK GCE, there was a notable growth in the number of Graduate Schools in Australia as a response to the increasing emphasis on research and postgraduate education. Such elements, or their proxies, were now in place in a majority of Australian universities.

Noting such evidence of the impact of the RTS, we might also draw attention to questions about the quality of research training that would result from the policy and funding changes. Questions about quality for example might be raised in the following ways:

a) Was the introduction of the RTS likely to produce a convergence of research programs in Australia, a concentration of research in areas with best perceived financial returns? Would the diversity and quality of the Australian system in fact suffer through the overwhelming emphasis on completions? This was a particular concern in relation to the place of social science and humanities research and research in new and emerging disciplines.

b) Was the introduction into the annual planning process of the Research and Research Training Management Reports supportive of quality improvement, or would it result simply in the refinement of an administrative discourse that aimed to present the best possible picture of an institution's performance? What use was really being made of such Reports? It was noted that the recent Higher Education Report (DEST 2002) did not seem able to draw anything useful from this large exercise in reporting.

c) An abiding issue was the matter of research investment in Australia. In spite of some improvements in government funding levels recently, there remain questions - e.g. are student stipends and other supports sufficient to guarantee a sufficient supply of researchers for the future? There are already signs of significant shortages emerging in international research fields that are likely to be replicated in Australia. How adequate is investment in research infrastructure if Australia really wants to be internationally competitive? Also, how satisfactory is the government's commitment to developing a research capacity when a significant component (PELS) of the *Backing Australia's Ability* package was in fact consumer financed anyway?

Questions such as these required continuing attention if Australia was to develop its research potential.

POST-PRESENTATION RESPONDENT

Leisa Ridges
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Interestingly, throughout Evan Arthur's presentation, he kept referring to the undertaking of a research postgraduate degree as research training yet he himself admitted that 70% of Australia's researchers were postgraduate students – I think this highlights that postgraduate students are indeed researchers as opposed to research trainees. It would be very welcome if DEST could begin to consider postgraduate students as researchers rather than trainees in all future reference and when formulating policy.

It is interesting that Arthur included in the list of reasons for why the RTS was formulated, that it was established that weaknesses within the sector included:

- Poor environments associated with poor supervision, lack of departmental support and impoverished infrastructure as well as;
- A mismatch between institutional research priorities and student interest.

Let's deal with the first point. If the RTS was to address the problem of impoverished infrastructure – how did it plan to achieve this? The RTS formula now gives 40% of funds on the basis of university research income. While this may encourage universities to increase their research income levels, they are also being forced to do so by the fact that public funding has been diminishing over recent years. Therefore the increase in research funding acquired by Universities is currently only just replacing the public funding that has been withdrawn rather than being in addition to such public funds. This means that at best universities are only able to sustain the current levels of research infrastructure rather than improve it and as it was pointed out such infrastructure was deemed impoverished! At worst, it means that current levels of infrastructure cannot continue to be, or are not being, maintained and are thus declining. Whichever the scenario – things are not improving under the current funding model. At least not fairly across all research areas within the universities.

The second basis for implementing the RTS, according to Evan, is the mismatch between institutional research priorities and student interest.

Tell me Dr Arthur, how is the RTS designed to 're-match' universities research priorities with student interest? I do not see a mechanism in the current funding model but would be pleased for you to point that out. You did make it clear though that the research and research training management reports were never intended to be used by the Commonwealth to prescribe how universities should identify their areas of research strength. You stated: *Rather, each institution has been encouraged to arrive at its own approach to identifying these areas – mindful of the particular mission, context, resources etc of each institution*.

However I bring to your attention that under a period of drastically reduced public funding to Universities, they are left with little choice but to specialise in areas of research which can generate the most private investment, industry investment and funding from competitive grants. The Government has indeed prescribed to Universities areas of research priority by allocating 33% of ARC funds to four specific areas of scientific research in: Nano and Bio-materials, Genome/Phenome Research, Complex/Intelligent Systems and Photon Science and Technology. Again I do not see that under these funding environments that universities have been able to address the matching of their research priorities to the interests of students.

In reference to the research and research training management reports you note, Evan, that they are a means for universities to publicly acknowledge *that the research training experience should be richer than the completion of*

research and writing up a thesis – involvement in you said *professional development opportunities in areas such as project management, management of intellectual property, and leadership skills should also be part of the experience*. I agree – but is this promoted by the RTS? Unfortunately no. In fact, at many institutions students are discouraged and often disallowed to undertake teaching, for example, whilst undertaking a research postgraduate degree because of the great emphasis that has been placed on completion times for these degrees. My concern is that DEST has equated quality with completions which I do not believe is correct and has consequently compromised the overall experience and skills gained from a research postgraduate degree rather than enhancing such skill acquisition.

Finally, in reference to the importance of accurate data collection from universities due to the importance of the data now being used for universities research funding, I suggest to you, that the accuracy of data collection is something that DEST itself may wish to review in their own research endeavours. There does not appear to be a quality framework by which DEST operates in terms of its own research and data interpretation, which I feel needs to be addressed. Perhaps a quality audit of DEST would not be such a bad thing?

POST-PRESENTATION RESPONDENT

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Today I have been asked to comment of the impact of DEST policies and procedures on day-to-day supervisory practice at the level of Departments and Schools.

To put my perspective in context, I am a Postgraduate Coordinator in the Department of Mechanical Engineering at Adelaide University, and also at the same time an engineer, so I am used to analysing and managing risk.

I apologise in advance if the following analysis sounds rather mercenary. In my department there are currently 12 full time academic staff, approximately 400 undergraduate students and 40 postgraduate students. Over recent years undergraduate numbers have risen while academic numbers have fallen, and as a result we have found that our research output is diminishing. To address this we have decided to try to attract more postgraduate students, with the objective of reinvigorating our research. There has recently been a dramatic change in who bears the risk in this process, based on the incentives offered as part of the Research Training Scheme.

Under the previous funding arrangements, my department was able to offer a number of departmental postgraduate scholarships to the capable students that had missed out on APA scholarships. As long as the faculty passed on the allocated funding associated with that student, and the student published a couple of refereed journal publications, the scheme was effectively cost neutral. The department did not benefit financially, but we had provided the opportunity of higher degree research to a student and we had increased our research output.

The risk that the student would not complete, and its financial implications, was shared between the government, the university and the department. Under the RTS the risk is now wholly on the department – no completion, no money. So after three to four years of providing supervision, research and perhaps scholarship support for a student, a department may find itself seriously out-of-pocket.

Note that many of the reasons for non-completions, intermissions and extended completion times are beyond the control of the department that bears the risk. These include work experience in industry, consulting activities, taking up prestigious scholarships elsewhere, or being poached by employers. There is also the Pandora's box of pregnancies and the associated equity issues.

Supervision has become a risky business. Now when supervisors assess prospective students they may be less inclined to take on 'risky' postgraduate students. This may result in more unconventional students or projects not being accepted, which may in turn limit the amount of truly groundbreaking research being conducted in this country.

Another aspect of supervisory practice that may change is the blend of Masters and PhD students. In the RTS formula, the weighting for a PhD completion is twice that of a Masters completion, whereas all separations are weighted an equal amount. All other things being equal, it is preferable to have students in PhD programs. Hence we may see less of the applied research characteristically undertaken by Masters students.

So far I have presented mostly conjecture, what may happen. Now I turn to actions that have taken place at a local level as a result of DEST's policies. From DEST's web site I extracted *the government's objectives for higher education include: quality assurance, improvement of universities' responsiveness to students and industrial requirements and the advancement of Australia's knowledge base and contribution to national and global innovation*.

I agree with DEST's objective to improve responsiveness to students. As a department we have been guilty in the past – one student took 18 years to complete a PhD. However, contrary to DEST's intentions to provide students with more workplace skills during their higher degrees, my department has found it necessary to cut back those areas. For example, postgraduate students are no longer allowed to teach undergraduate courses. They may still undertake laboratory demonstrating and tutoring, but they are no longer allowed to lecture undergraduate courses. Postgraduate students are also discouraged from doing consulting work. Even though we regard both of these activities as educationally beneficial to the student, we realise that students cannot do consulting, teaching and complete their degree in three years. It is simply not possible for students to fit it all in under the current rules.

In conclusion, I would say that I am in general in favor of the ideals driving DEST's policy in higher education, but feel that there is still need for significant fine tuning of the implementation of that policy. This is particularly true in the area of calculation of completion times. I think there is scope for incorporating a concept of valid or endorsed intermissions for a range of activities that are of educational benefit, such as consulting, not to mention some of those equity issues associated with pregnancies.

QUALITY ASSURANCE IN POSTGRADUATE RESEARCH ACCORDING TO THE THAI GSA

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The Deans of Graduate Schools of Public Universities of Thailand agreed to setup a common quality assurance system focussing on graduate studies that can be used in all Thai public universities. The system is named the GSA or the Graduate Studies Quality Development and Assurance System which covers not only the control, evaluation and auditing aspect but also the support and enhancement of continuing improvement of each graduate program.

The GSA standard requirements have been drawn up to serve as a guideline to be used by the organizations (Faculty or Department), by the program directors, by the teachers, mentors and examiners and also by the students for the teaching-learning and researching processes in the graduate programs. There are 14 basic requirements and 3 progressive requirements.

Basic requirements which shall be established by the program includes:

1. Philosophy, objectives and policy of the program
2. Program management and administration system
3. Curriculum development, evaluation and revision
4. Resources management
5. Human resources management
6. Environmental management and securities
7. Information system
8. Recruitment and enrolment
9. Promotion of students development during studying
10. Development in teaching/ learning/ research
11. Enhancement of learning atmosphere
12. Quality assurance in thesis
13. Evaluation system for the graduates and other outcomes and follow-up system
14. Quality process in general.

The progressive requirements includes:

1. International cooperation
2. Interdisciplinary and Multidisciplinary approach
3. Integration and application of the teaching/ research for societal development.

Focussing at the basic requirement in thesis quality, every graduate program shall establish the system for the following:

1. **Quality of the contents of the thesis**
   - 1.1 shall match the specification of that program
   - 1.2 shall fulfill the requirements of research questions
   - 1.3 shall be up-to-date
   - 1.4 shall be practicable

1.5 shall not violate ethical, health and safety consequences
1.6 shall meet international standards in such area.

2. Quality of the research process shall:
2.1 formulate a plan to monitor research strictly according to the proper and accepted research methodology and based on ethical principles and research etiquette.
2.2 state the expected time frame for the whole (post)graduate research.
2.3 evaluate the research potential of the graduate students before starting the research.
2.4 state the qualifications and expertise of the advisors.
2.5 provide adequate resources for the promotion of research by seeking funding from both public and private sectors.
2.6 indicate the steps and duration of each step during processing the research:
2.6.1 formulate the topic/ theme/ conceptual framework
2.6.2 prepare the proposal and process for approval
2.6.3 procure funding, equipments and personnel
2.6.4 establish the methods and security measures to be applied during research
2.6.5 undertake the main survey/ experiment
2.6.6 data analysis
2.6.7 prepare the first draft of thesis
2.6.8 revision and submission of the thesis for examination
2.6.9 thesis defense and thesis approval
2.6.10 submission of the bound copy of thesis.
2.7 shall establish the supporting system for dissemination and/ or publication.

3. Quality of the research management:
3.1 organization shall formulate a policy and plan of action to support and promote (post)graduate research in order to increase the body of knowledge as well as to develop teaching-learning activities.
3.2 shall set up the distinct system to control and audit each step of research and thesis performing as indicated in 2.6.
3.3 shall provide current databases sufficient enough for the research.
3.4 shall have a plan for preparing the graduate students to be capable for carrying out their thesis and for using their experience to conduct the research and development in their workplace after graduation.
3.5 shall develop databases for research, which can be propagated and transmitted to society. The research findings shall be disseminated through the channels accepted both locally and abroad. It should have a system for dispensing new knowledge to support the economic and social develop ment of the country.
3.6 shall oversee its intellectual property.

Each graduate program is requested to do the self-assessment report on such requirements to the graduate school. The graduate school board will evaluate their performance and analyse the strength, weakness, threats and problems and also the opportunities for development so that they can be supported to make continuing development.

MARKETING AUSTRALIAN HIGHER EDUCATION TO THAILAND: THE INFLUENCE OF REFERENCE GROUPS ON STUDENTS' CHOICES OF INTERNATIONAL EDUCATION

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This paper examines the relationships between influencing factors and choices of international education of Thai undergraduate and postgraduate students in Australia. The research focuses on how normative referents influence Thai students' choice of international education. The study design follows a multi-stage methodology, and employs both qualitative and quantitative methods to identify the research problems. Unstructured personal and focus group interview (η=50) were conducted to examine the influences from normative referents on Thai students' choices of international education, and to identify what criteria they used to judge the quality of international education. The results from the main study, with Thai students (η=813) in the Australian higher education sector, revealed the significant differences ($p < .01$) and similarities in susceptibility to interpersonal influence on students' choice of international education. The results indicate that different influencing factors (finance, information, encouragement, and expectation) from three groups of normative referents (family, peers, and international student recruitment agencies) have various impacts on students' choice-making process (choice to study abroad, choice of country, city, academic course, and university). The results suggest that international student from various level of education and socio-economic backgrounds were influenced differently with regard to their choices of international education. This study can be used for the effective segmentation of international education market.

ACADEMIC DEGREE SYSTEM AND GRADUATE EDUCATION IN CHINA

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The presentation will cover the following issues on graduate education in China:

1. THE ASSOCIATION OF CHINESE GRADUATE SCHOOL (ACGS)

ACGS was founded and approved by the Ministry of Educationor China in 1999. Now it consists of 33 members. All of them belong to the most distinguised, key Chinese State Universities. To become a graduate school graduate Schools go through a complicated process and a strict assessment. Now, we are glad to see that 22 more Chinese Universities have passed through the assessment for establishing their Graduate Schools in 2001.

2. EVOLUTION AND CHARACTERISTICS OF CHINESE ACADEMIC DEGREES SYSTEM AND GRADUATE EDUCATION

The modern Chinese academic degree system developed as a result of the mutual influence and adaptation of western higher education and traditional Chinese education systems. It stipulates academic standards for a three-riered degree system - bachelor's, master's and doctor's degrees. According to the regulations and other decrees in implementation, a three-tiered mechanism has been put in place which includese the state, provinces and degree-conferring institutions.

3. DEVELOPMENT OF THE CHINESE ACADEMIC DEGREES SYSTEM AND GRADUATE SYSTEM AND GRADUATE EDUCATION IN THE LAST 20 YEARS AND ISSUES OF CONCERN

We re-started to enrol graduate students in 1978 and founded the academic degree system in 1980. So far, the academic degrees system and graduate education has made great progress in China. A comprehensive, category-award system has been established; the elementary stystem of graduate education has been formed; and some experience about category development and the education of high level talent has been obtained. However, how should we adapt our graduate education to the development of society and economy in the 21st century? At present, what we are most concerned about is the quality of graduate education.

4. INTERNATIONAL COMMUNICATION AND CO-OPERATION OF CHNESE ACADEMIC DEGREES SYSTEM AND GRADUATE EDUCATION

The objectives of ACGS are to:

- promote the construction and administration of graduate schools, especially for the purpose of enhancing the quality of graduate students,
- foster the common interests of graduate school deans, to advise the policy and strategy of graduate educa tion in China, and
- exchange information with foreign associations of graduate education.

ESTABLISHMENT OF AN INDEX SYSTEM TO APPRAISE DEPARTMENTS OFFERING MEDICAL DOCTORAL PROGRAMS IN CHINA

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Departments offering doctoral programs are considered the 'top' of the 'pyramid' in higher education. It is not only important but also urgent to make a systematic and scientific appraisal of departments offering medical doctoral programs in China. Using the principles of educational appraisal theory, an index system has been developed and applied to appraise departments offering medical doctoral programs. The index has been developed on the basis of a review of literature and application of documents such as the *Regulations of the People's Republic of China on Academic Degrees*, using methods of systematic and structure analysis, comparative study, and consultation with experts. The index includes five items in its first level, ten items in its second, and thirty-two items in its third level. Characteristics of the index are that it is scientific, directive, quantitative, comparative, simple and practical. It has been used to appraise 83 Chinese medical departments. The results have shown that the index system is not only scientific and feasible, but is more effective than other available methods in identifying outstanding departments, ensuring minimum quality standards are met, and identifying shortcomings to be addressed in future development activities.

IMPROVING QUALITY IN POSTGRADUATE STUDY: THE FIRST PHASE IN A SWEDISH UNIVERSITY PROJECT

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The absence of quality work in postgraduate education at Umeå University was pointed out as a shortcoming by the National Agency for Higher Education in an evaluation of Swedish universities in 1998. The critique was taken seriously and a new project was initiated. It was stressed that emphasis should be made to formulate and find out concrete projects and steps to be taken as well as to improve the influence for doctoral students. When asking the students in a references group, four areas were identified as especially important:

- Guidance and supervision
- Belonging to the departments
- Recruitment
- Information.

All four areas work together like a system of communicating vessels and make a pattern that looks alike for almost every student. The same four areas are pointed out as important according to the literature survey, based on reports from mainly Swedish universities, that were written within the project.

At this conference I will present the first phase in the quality project focusing on a literary survey and the reality for doctoral students and what could be done to improve their situation. One thing that is striking is that very many reforms have been decided by politicians without any deeper knowledge of either what the students actually think or the results of research.

RESEARCH CAPACITY BUILDING AT A HISTORICALLY DISADVANTAGED TERTIARY INSTITUTION IN SOUTH AFRICA

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In South Africa, historically disadvantaged tertiary institutions were primarily established as teaching institutions. As research was neither a focus nor a requirement for students or staff members, research development was deterred and research programmes were not founded or funded.

Technikon Northern Gauteng (TNG), situated in Soshanguve, Pretoria is a typical historically disadvantaged tertiary institution. However, to be in line with the policies of the Higher Education Plan of the Education Department, TNG has taken the initiative and embarked on three Research Capacity Building (RCB) programmes. These programmes aim to increase the culture of research at TNG; instill the idea that research is important to the academic development of students; emphasize that research is a necessary component for teaching and learning and that research sustains an institution in the academic field; build research capacity; increase research outputs; and build a core support base through the training of a new generation of academics.

This paper reports on a novel method followed for building research capacity within staff members utilizing one of the mentioned programmes: the Technical and Business Education Initiative in South Africa (Tabeisa) which is a consortium of four South African Technikons and two British Universities. The Tabeisa consortium is engaged in a project funded by the European Union under the European Programme for Reconstruction and Development. An element of this project is an instructional program that has as it's main objective research and entrepreneurial capacity building within the higher educational sector thus creating increased opportunities for economic and social development within the disadvantaged.

A QUINELLA FOR UWS IN 2001- INTEGRATION OF UWS AND IMPLEMENTATION OF THE *WHITE PAPER*

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In 2001 the University of Western Sydney (UWS) integrated three virtually autonomous members into one university. It was also the first year of implementation of the White Paper, which had a radical impact on higher degree education at UWS. Funded load is required to be reduced by nearly half within three years. This has serious implications for academic workloads and opportunities for research degree supervision. It has put pressure on administrators to improve monitoring and quality assurance. Student performance has become a predominate issue, we have a high load of part time mature aged enrollees, and we need to complete pre-2001 students and create an academic environment that will get students on track and focused early in their candidature.

UWS has introduced a suite of strategies to support staff and students, which include development programs e.g., workshops, training programs and compulsory registration of supervisors. First year students have three formal reporting milestones. Management structures have been pared back in total numbers of staff but the new positions have greater authority and streamlined reporting lines. The Research Office and Student Administration are working together with staff dedicated to higher degree administration. We are addressing the problem of few support staff and six campuses spread over Greater Western Sydney.

UWS is supplementing the reduced DEST load with local fee paying places and looking at fees for overtime students and UWS sponsored enrolments. The purpose is to maintain a critical research culture and to provide opportunities for academic staff as well as raise our completion rates. This paper outlines the problems and solutions we have encountered that could be useful to other universities confronting similar resourcing and quality assurance challenges.

THE IMPACT OF THE RESEARCH TRAINING SCHEME ON QUALITY, EQUITY AND DIVERSITY IN POSTGRADUATE RESEARCH EDUCATION

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The Council of Australian Postgraduate Associations (CAPA) believes that postgraduate research education in Australia should strive to achieve quality, equity and diversity. In the current policy environment, we have seen a renewed interest in quality, and quality assurance mechanisms, without an accompanying emphasis on equity and diversity. However, these values are intrinsically linked, and policy that is detrimental to equity and diversity will ultimately also reduce the quality of postgraduate research education.

The Research Training Scheme has serious implications for both equity and diversity. The introduction of competitive research funding with a formula allocating 50 per cent of funding on the basis of successful student completions, means that the selection of research students will be influenced by their likelihood of completing a PhD in fours years and a Research Masters in two years. This system inevitably disadvantages the equity groups which tend to have longer completion times, such as women whose study is interrupted for family reasons. At the same time, the reduction of gap places under the Research Training Scheme has been uneven, and has been at the greatest detriment to those universities that have traditionally catered to low socioeconomic status and regional students, such as the University of Western Sydney and Deakin University.

Candidates who wish to undertake more speculative research, with less guarantee of results within the four or two year time limit, will also be less attractive to universities, with a subsequent loss of innovative research. For the same reason, candidates in disciplines that require lengthy periods of data collection, such as the biological sciences, anthropology or astronomy, will also be disadvantaged. This reduces the diversity of postgraduate research - the diversity of disciplines in which postgraduate students can undertake research, the diversity of research within the discipline, and the diversity of the researchers themselves.

This paper will examine the impact of the RTS on equity of access to and participation in postgraduate research education, as well as on the diversity of postgraduate research. It will then evaluate the potential quality costs of this reduction of equity and diversity.

A STUDY OF ATTRITION RATES AND COMPLETION TIMES FOR DOCTOR OF PHILOSOPHY STUDENTS IN A FACULTY OF SCIENCE

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ABSTRACT

Attention has been focused by the White Paper on the apparently increasing level of postgraduate attrition and lengthening completion times of doctoral candidates in Australian universities. In order combat these problems, universities have instituted a range of processes and structures. To examine the effect of these measures within a science faculty, two studies were conducted on doctoral students: Study 1 from 1991 to 1998 surveyed a total of 279 student records and Study 2, from 1998 to 2002 (after the institution of these measures at QUT) surveyed 144 enrolments. The overall attrition rate in Study 1 was 14% and the average length of study prior to termination was 21 months; the 39 terminating students provided 17 types of reasons including personal, career, course related and institutional aspects. Some 70% of the reasons given related to personal or career decisions but only 12% were directly related to institutional issues. Attrition was lower in Study 2 (11.1%) and the mean time of study prior to termination was also shortened (18.4 months). The mean completion time for the 106 graduating students in Study 1 was 56.7 months (4.73 years) comprising 51.1 months from enrollment to thesis submission and 7.4 months for examination/correction. In Study 2, the mean completion time of 63 graduating students was 55.8 months (4.65 years) comprising 48.1 and 7.7 months for the two phases. Of concern was the finding that examiners required more than twice the allotted time to examine theses (4.4 months) and this time exceeded that taken by candidates to carry out corrections and present the final version of their thesis (3.3 months). The measures instituted at QUT and within the Faculty of Science appear to have had modest effects on attrition rate, the length of study prior to attrition and completion times. However, attrition within the Faculty is substantially lower than figures released in recent publications (18-40%) which may reflect, in part, differing practices in calculating attrition.

INTRODUCTION

Media reports in recent years have focused attention on the apparently increasing level of postgraduate attrition in Australian universities and the lengthening completion times of research degrees (Lawnham, 1999; Richardson, 2001). David Kemp, the Minister of Education, Training and Youth Affairs, in his Green Paper noted that the number of research students failing to complete their studies (34%) was considerably higher than for undergraduate (20%) or coursework postgraduate programs (25%) (Kemp, 1999a). Attrition was highest in agriculture (51%) and lowest in veterinary science (18%) with an overall mean of 34% (Kemp, 1999b) whilst unsubstantiated media reports put attrition even higher at 40% for 1997 (Gallagher, 1999). In the same Green Paper, Kemp also highlights the long completion time for postgraduate programs, *nearly six years for a PhD degree*, based on data from Morgan and Guthrie (1998). In order to combat these problems and to raise the quality of research postgraduate supervision and improve the whole postgraduate experience, most universities have instituted processes and structures devoted to research higher degree supervision and candidature. These include *inter alia*, appointment of directors or deans of postgraduate research programs at university and lower levels, institution of postgraduate supervisor training programs, introduction of 'learning agreements' and specifically at QUT, reorganization of admission procedures and the introduction of a comprehensive database which enables efficient

tracking of postgraduate progress. In order the examine the initial effects of such processes on the PhD program within the Faculty of Science at QUT, attrition and completion was recorded for two periods, Study 1, from 1991 (the inception of the doctoral program) until 1998 and Study 2, from 1999 (from when the processes were progressively introduced) to the present time. We present here the complete findings for Study 1 and interim data for Study 2.

METHODS

Definition of attrition. The definition of attrition used in this study is that it is *a process that results from a student leaving the course with no intention of completing it*. Based on the above definition, the attrition rate used in this study was calculated as the number of students terminating expressed as a percentage of the total number of students entering the program since its inception in 1991 up to 1998 and for the two years following for which data is available (1999 and 2000). (Note, however, that higher education attrition rates are usually calculated annually by universities on data available at an arbitrary census date which produces artefactually large swings due to small numbers of students leaving in individual years). 39 students were identified as having terminated their PhD program in Study 1 and 14 students in Study 2.

Reasons for Attrition. Information from official records and from supervisors produced seventeen types of reasons as to why students terminated. These clustered naturally into five groups which are listed in the Results (Table 3).

Completion time. Two periods have been calculated for the purposes of this study. Phase 1, the period from commencement of candidature to submission of the thesis for examination which is known as the *period of study* (QUT, 2001a) and indicated by CE → UE in Results section where CE is *currently enrolled* and UE, *under examination*. Phase 2 runs from the submission of thesis for examination to the approval of the degree by University Academic Board or its delegated officer, the point in time when *course completion* is achieved and which includes the period of examination, revision and final acceptance, (indicated by UE → CC in Results section where CC is *course completed*). Thus we report here three sets of figures: 1) Phase 1: time period of study (CE → UE); 2) Phase 2: the examination process (UE → CC); and 3) CE → CC, the total course completion time. In addition, for Study 2, the periods of examination and of corrections have been retrieved. The first period runs from receipt of the thesis by the Examinations Officer (date 1) to the date on which the examiners' reports are sent to the candidate (date 2) and the second period runs from date 2 to the receipt of the final thesis in bound form (date 3). The total of these two periods is referred to as the *examination period* equivalent to Phase 2 UE → CC in Study 1.

In calculating the time taken to complete the degree, adjustments were made for any leave of absence and any part-time study by converting to a full-time equivalent (FTE) time. Both studies were carried out by examining official University records (from individual student records and from the computer-based Student Information System, SIS) and where these were incomplete or not specific enough, by gathering information from staff who had supervised the students. A total of 106 student records were analysed for Study 1 based on the date of thesis submission for external examination (1991 to May 1999). Of these, 82 were course complete and 24 were under examination (UE). 63 student records were analysed for Study 2 and these included the 24 UE candidates from Study 1 and a further 39 who were course complete.

RESULTS

ATTRITION

The number of students in each enrolment classification and the attrition rate for Study 1 (1991-98) are summarised in Table 1. The overall attrition rate for the Faculty was 14% and there were no significant differences between Schools. Descriptive statistics associated with the terminations are summarised in Table 2. The

average length of study prior to termination was 21 months, with the period ranging from one month's enrolment to 96 months (eight years). The 39 students who terminated provided 17 different types of reasons and a total of 50 statements of reasons for termination, some providing multiple reasons. The frequency of occurrence of the reasons for termination are summarised in Table 3. Sixteen students were identified as terminating in Study 2 (1999-2001) out of a total doctoral enrolment of 144, which represents a mean attrition rate over the period of 11.1%. The length of study prior to termination ranged from 1 to 72 months (mean 18.4 months), with a median value of 12 months and modal value of 1 month. Results for individual Schools were not sufficiently large to warrant inclusion.

COMPLETION

The 106 students making up the enrolment classifications of *course completed* (CC), *graduated* (GR) and *under examination* (UE) formed the basis of Study 1. The numbers associated with each phase were different as at the time of recording, there were 24 theses undergoing examination, leaving a complete data set for 82 students out of the 106. The mean completion times for each School and for the Faculty as a whole are shown in Table 4. In order to eliminate possible discrepancies by having differing numbers of students in each phase, Study 2 was based solely on those students who have reach the *course complete* (CC) stage. The mean completion time for the Faculty in Study 1 (1991-98) was 56.7 months (4.73 years) made up of 51.1 months (4.26 years) for the period of study from enrollment to submission of thesis and 7.4 months for the examination/correction phase. The mean times in Study 2 (1999-2001) were 48.1 months (4.01 years) for the CE → UE period and 7.7 months for the UE → CC period, total 55.8 months (4.65 years). Times for the two phases of the examination process were also retrieved in Study 2. The first phase, the time taken by examiners, ranged from one month to 12 months (mean 4.41, median 4.25) and the period for corrections and final preparation of thesis ranged from 0.25 months, i.e. a week, to 11.25 months (mean 3.30, median 3.0). Thus the overall period of examination (UE → CC) ranged from 2 months to 23 months (mean 7.7 months, median 6.0).

Table 1 Study 1: Students in Each Enrolment Classification and Attrition Rate by School

School	ENROLMENT CLASSIFICATION								
	Course completed (CC)	Currently enrolled (CE)	Currently not Enrolled (CN)	Graduated (GR)	Under Examination (UE)	Leave of Absence (LA)	Terminated (TE)	Total [T]	Attrition Rate [TE/T]%
Life Sciences	7	43	1	36	11	2	17	117	14.5
Mathematical Sciences	4	19	0	9	4	2	7	45	15.6
Natural Resource Sciences	0	17	1	2	2	0	3	25	12.0
Physical Sciences	3	47	0	21	7	2	12	92	13.0
Faculty total	**14**	**126**	**2**	**68**	**24**	**6**	**39**	**279**	**14.0**

DISCUSSION

This project had three main aims, first, to provide collective and comparative quantitative data for use within the Faculty and in appropriate forums within QUT, second, to provide qualitative information that may inform policy decisions within the Faculty as to the establishment of appropriate mechanisms and processes to reduce attrition and third, the assess the extent to which these mechanisms and processes have led to improvement in attrition and completion rates.

Table 2 Study 1: Descriptive Statistics Associated with Terminating Students

		PERIOD OF STUDY (months)					
School	Number of students	Minimum	Maximum	Mean	Mode	Median	Skew
Life Sciences	17	1	96	21.7	7	16	2.4
Mathematical Sciences	7	2	20	13.6	20	18	-0.8
Natural Resource Sciences	3	9	60	27.3	N/A	13	1.7
Physical Sciences	12	8	81	22.7	27	19	2.7
Faculty total	**39**	**1**	**96**	**21.0**	**8**	**18**	**2.4**

ATTRITION STUDY

The overall Faculty attrition rate in Study 1 (1991-1998) was 14.0%, significantly below the figure for doctoral attrition across the whole university for the same period which ranged from 17.4% (1994) to 20.6% in 1995 (QUT 2001b). In Study 2 (1999-2001), attrition fell to 11.1% and this was partially mirrored by a fall across the whole university from 19% in 1998 to 16% in 2000. However, these figures are substantially less than those published by the Commonwealth (Martin et al, 2001) which indicate that the dropout rate was 27% for PhD students commencing in 1992 and surveyed in 1999. Completions totaled around 53% for all disciplines and Science completions were third highest at 59.1% behind Health (66.75) and Veterinary Science (64.6%). The lowest completion rate was for Architecture and Building (31.4%). Interestingly, Pitman (1998) cites national averages for doctoral attrition of 14.82% in 1994 to 12.65% in 1996. This discrepancy between figures for the Faculty of Science and some published figures is due, in part, to the process used by universities to calculate attrition rate. Whereas in this study we compared terminated enrolments (classified as TE) to the total number of students entering the program, official attrition typically also includes students who are on leave of absence (LA), under examination (UE) or not enrolled (CN), which may include students currently working towards their degree but who have failed to enroll correctly. Attrition is calculated by comparing the 'dropouts' (LA + UE + CN + TE) with the total. Consequently, the official attrition rates are skewed upward particularly by the inclusion of those students whose thesis is under examination. Clearly, this calculation does not reflect the true attrition of those students who *leave the course with no intention of completing it*. Other factors which might impact on apparent postgraduate attrition rates include the practice of including those students who upgrade from a Masters course to the PhD. These are obviously 'lost' to the Masters program but not lost to the institution.

The period over which students undergoing attrition studied prior to leaving the program is of greater concern than the actual number of terminating students. The results in Table 2 indicate that there is a considerable investment made in students who terminate given that the average FTE enrollment period of those who terminate is approaching two years. The level of human and material resources of the Faculty that are required to support that degree of investment is difficult to estimate but would be considerable. Chipman (1998) estimates the cost of enrolling a PhD student for 42 months to be approximately $135,000 based on notional international student fee recovery. From our own estimates, the cost of running an experimental PhD project amounts to at least $35,000 per year based on scholarship and consumable costs. From Table 2, the loss of 39 students at a mean time of 21 months, amounts to over 68 person-years, or in cash terms (using Chipman's annual cost calculation), $2.4 million.

Before discussing the results for termination (Table 3), it is pertinent to make some comments on the classification of these reasons. The information that produced this classification was either available in readily accessible official documents or from supervisors and consequently needs to be interpreted with some caution. For example, students with *inadequate skills for doctoral study* are not necessarily going to admit to this publicly and may opt instead to indicate that a research-oriented career is not for them (*career change/ clarification*). Indeed, the fact that certain personalities are better suited to research is well recognised (Madsen, 1983, Powles, 1989). The natural clustering is useful with regard to the desired outcome of the second aim of the study as it is the *QUT-related issues*and to a lesser extent *course-related issues* where realistically, the University could focus on improving policy and process decisions. Inadequate facilities and funding is possibly worthy of some consideration since it was significant that a number of supervisors made the unsolicited comment that attracting and retaining students, particularly those in senior positions in government facilities and industry where facilities were superior, was an ongoing problem. The relatively low but still important occurrence of the students' acknowledgment of inadequate skills for doctoral level study and loss of interest in the topic may indicate a need for better pre-PhD entry counselling and on-going mentoring.

The results in Table 3 indicate that the reasons student terminate from programs are varied, covering personal, career and course related issues as well as institutional aspects. More than two-thirds of the reasons in Study 1 (70%) given for termination relate to personal or career decisions, reasons over which an institution can exercise little influence. Interestingly, the proportion in Study 2 is similar (74%) albeit based on small numbers. A little over one tenth of the reasons (12%), a total of 6 instances, were directly related to QUT personnel and its facilities. Some of the course-related issues (14%) could be interpreted as being to some extent the responsibility of QUT. Again, in Study 2, these two categories totaled 26% identical with Study 1, although the figure for Study 2 is made up solely of course-related issues. Of interest, is the complete lack of responses to *QUT-related issues* as reasons for leaving in Study 2. As indicated earlier, *lost interest in topic* could well be *inadequate skills for doctoral study* in another guise. Interestingly, no students gave a lack of applicability of their PhD program to employment as a reason for leaving although it can safely be assumed that some students were offered highly paid positions for which a PhD was not required.

COMPLETION TIME STUDY

The mean total completion time across the Faculty for the two studies of 56.7 and 55.8 months compares favourably with the national average of 55.2 months (Baker et al. 1996) but is greater than the average of 3.4 years for APA (I) scholarship holders surveyed in 1995 (Powles, 1996). Only one other Australian higher education institution, the University of Western Australia, has published current completion times. The mean figures for science at UWA during the years 1999 to 2001 range from 51.7 to 52.8 months for the CE → UE period (M V Sargent, personal communication). Although figures are maintained relating to completion **rates**, completion **time** is a statistic that is not routinely calculated. Interestingly, the newer data of Morgan and Guthrie (1998) from the 1997 postgraduate destination survey indicates that the completion time for all modes of study is 5.7 years, suggesting a lengthening of completion periods. However, the most recent data from DETYA (Martin et al. 2001) which does not provide overall mean completion times, indicate that 30% of students complete in 4 to 5 years. The other point worthy of comment, is that completion times are very much discipline-dependent (Powles,

1989, Parry and Hayden, 1994) and of course, national and institutional figures will span a wide variety of disciplines. Indeed, there is a substantial literature on factors affecting time of completion which has been summarised by Seagram et al. (1998); these factors include discipline area, means of financial support and gender issues. The fact that women in general take longer to complete doctoral programs is due at least in part to the *accumulated microinequities* experienced by women. Important among many factors associated with both attrition and long completion for women is intellectual isolation and this is more likely to occur in arts faculties favoured by women where research is individual rather than collaborative (Conrad and Phillips, 1996).

Table 3 Frequency of Reasons for Termination of Doctoral Enrolment

REASON	STUDY 1 (1991-1998)		STUDY 2 (1999-2001)	
Personal issues				
Family related	7			
Medical grounds	5			
Financial problems	3		2	
Personal problems	2			
		15 (30%)		2 (11%)
Career/employment issues				
Relocation for employment	5		1	
Relocation for study	4		6	
Employment demands	4		4	
Career change/clarification	7		1	
		20 (40%)		12 (63%)
QUT-related issues				
Lack of appropriate supervisor	1			
Difficulties with supervisors	1			
Problems with facilities/organization	2			
Lack of research funding by QUT	2			
		6 (12%)		0
Course-related issues				
Inadequate skills for doctoral study	2			
Change of research topic	1			
Lost interest in topic	3		4	
Transfer to Masters degree	1		1	
		7 (14%)		5 (26%)
Other				
Enrolled but never started	2	2 (4%)		0

Table 4 Mean FTE Completion Times (months) by School (Studies 1 and 2)

School	Phase 1 [CE → UE]		Phase 2 [UE → CC]		Total [CE –> CC]	
	Number	Mean	Number	Mean	Number	Mean
Life Sciences						
Study 1	54	53.8	43	7.6	43	61.2
Study 2	21	48.0	21	6.6	21	54.5
Mathematical Sciences						
Study 1	17	48.8	13	6.9	13	53.2
Study 2	13	47.8	13	8.2	13	55.9
Natural Resource Sciences						
Study 1	4	55.1	2	8.0	2	46.0
Study 2	6	59.7	6	12.5	6	72.2
Physical Sciences						
Study 1	31	47.3	24	7.2	24	52.2
Study 2	23	50.9	23	8.2	23	59.1
Faculty total						
Study 1	**106**	**51.1**	**82**	7.4	**82**	**56.7**
Study 2	**63**	**48.1**	**63**	7.7	**63**	**55.8**

Even though the Faculty's figures mirror the national average, the data presented in this study indicate that completion time is too high, even using the lower Phase 1 figure of 48.1 months in Study 2. Based on comparable international figures such as the United Kingdom where the norm for a PhD is still regarded as three years, one must be led to believe that our PhD completion times are unacceptably long. This impacts adversely on financial support arrangements: postgraduate scholarships at QUT are available normally for 36 months with the possibility of a one-off extension of 6 months. Consequently there is a likelihood of, on average, a 6 to 9 month unfunded period. The four-year HECS exemption for full time doctoral students and the University's 8-year deadline for submission may also impact adversely on the candidates' desire to complete in three years. Although the two studies indicate that processes which have been progressively instituted may be bringing about a shortening of completion times, the data in the shorter Study 2 may be biased by the fact that it included only the 'faster finishers'.

The examination/correction period in excess of 7 months for both studies is 37% higher than that recorded in the 1990 DEETYA study (Baker et al. 1996). Indeed, the time taken by examiners is double that nominally allowed by the University. There is no doubt that examiners, in the main, perform this task diligently although the time taken to actually review the thesis is short. Kiley and Mullins (2001) suggest that most examiners whom they surveyed spent the equivalent of three or four days full-time over a period of two to three weeks. The figure of 4.4 months is, of course, based on the longest time taken by the three examiners and the average time taken for all three may have been appreciably less. It is regrettable, however, that examiners may sometimes decline to review a thesis some weeks into the process even though they may have agreed to do so at the outset.

Attrition rates and completion times are interrelated, possibly inversely. It could be inferred, for example, that the reasons given for leaving the PhD program could also be the reasons why completion time is relatively high, although there is no hard data to support this contention. However, Baker et al. (1996) found that nearly half the candidates who had experienced longer completion times cited personal problems as the cause whereas 27.1% cited a difficult project and only 21% referred to supervisor problems. Interestingly though, for Study 1, in the mainly field-based research areas where completion times are long (data not shown), attrition is low (3 out of 21, 14%) compared to the laboratory-based molecular biology research where completion is shorter but attrition is higher (13 out of 45, 29%). This effect may be related to the well-known tendency for attrition to be discipline-dependant (Powles, 1989). The potential dilemma is that in attempting to hasten completions, there is the possibility that attrition rate will rise. However, the project reported here would suggest that both attrition rate and completion time have been *decreased* by measures introduced to improve supervision etc. A further study over a longer period of time would remove any bias due to variations in finishing times and thus confirm these improvements.

CONCLUSIONS

This project assessed attrition and completion time of PhD students within the Faculty of Science which concorded with nationally available data. However, on the basis that *any* loss of students is a potentially significant problem in that the retention of doctoral students has important economic and professional consequences for the continuing development of the Faculty, the figures also indicate that there is no reason for indifference or complacency. Having said this, it would appear, on the basis of limited data, that the Faculty has achieved a reduction in completion times, attrition and the time of study prior to attrition.

Of some concern is the lengths of time students remain in the program before undergoing attrition, given the considerable costs associated with supporting students in the program. The wastage in the Faculty of Science alone would be sufficient to employ ten research assistants for 5 years! The simple guidelines for minimizing attrition suggested by Seagram et al. (1998) would be worth bearing in mind: meeting frequently with supervisors, collaborating with supervisors on publications, keeping to the original research topic and beginning the dissertation early in the program. It is in the interests of the Faculty either to provide appropriate support for students so that the human and material investment is not wasted or to counsel students to leave the program as soon as it becomes obvious that the support is not helping the student or the Faculty.

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POSTGRADUATE RESEARCH INDICATORS: A WORK IN PROGRESS AT THE SCHOOL OF EDUCATION, FLINDERS UNIVERSITY

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ABSTRACT

What does a postgraduate have to do to *effectively* complete their PhD? This paper discusses the proposal that postgraduate training includes structured components that encourage the development of self-directed learning in PhD students. The structured components are elements termed *Indicators of Success in Postgraduate Research*. They were created in the School of Education, Flinders University under the auspices of the Postgraduate Training Group with the intention of encouraging postgraduates to seek out opportunities to learn about significant components of the postgraduate process, while acting as a reference for the academic staff who were responsible for postgraduate training.

The rules of the current federal Liberal Government's Training Scheme for higher education requires postgraduate development activities to happen within a structure. At the School of Education it was considered that a structured approach was necessary to the completion of milestones in postgraduate candidature, while independent or self-directed learning was desirable as well. The *Indicators* were developed by two members of the Postgraduate Training Group and focus groups of staff and postgraduate students gave suggestions which were incorporated into the list of *Indicators*. The *Indicators* set out the skills, knowledge and attributes that PhD candidates are likely to need to complete their degree in terms of the activities and tasks they need to do.

The *Indicators* are presented as a framework of competency elements to guide postgraduate students, supervisors and the school. There are sixty-two activities grouped under the following indicator elements:

- Develop a research plan
- Collect, organise and analyse information
- Communicate ideas and information
- Use appropriate technology
- Plan and organise research activities
- Interact with others
- Prepare thesis/dissertation

INTRODUCTION

For many people, the chance to undertake their PhD is the chance to investigate an issue of personal and professional significance, and therefore a chance to generate something that represents their life work. The issue with this attitude is that a life's work can take some considerable time to complete, and may involve years of study.

The attitude that a PhD should constitute the culmination of a life's work is contrary to the assumptions underlying the current Federal Liberal Government's Research Training Scheme for higher education, where most PhD student places (for Australians) are funded for a maximum of four years only (DEST, 1999). For many students completing their PhD, the pressure is intensified by the issue of funding: most scholarships last for only three years, with the possibility of a six-month extension if it can be justified.

For some postgraduates[1], this stress is compounded by their entry from a non-traditional background, such as: international students, many from a non-English speaking background; mature women entering postgraduate study after a period as primary carer for children; and people who have had successful careers who decide to undertake postgraduate study after retrenchment, retirement or perhaps after a personal re-evaluation of their life's goals. It must be acknowledged that research postgraduates come from a wide range of backgrounds, and possess a diversity of experience. Many of these postgraduates, however, may not realise that their backgrounds and experience will not make their candidature any easier.

This situation, and the requirement under the Research Training Scheme (RTS) for planned training of research postgraduates, means that the training of research postgraduates can no longer be the *laissez-faire*, ad-hoc process that it has been in many academic departments to date. The Federal Government has the view that postgraduates are disillusioned with research training (Gordon, 2000), and they have acted upon this belief. Rather than allowing postgraduates to discover theories, methods and technologies for themselves as part of their candidature, universities must now facilitate a process whereby postgraduate learning is expedited by the most cost-effective means possible, without corrupting the pursuit of original knowledge that should be part of a PhD candidature (AQF Advisory Board, 1998).

An essential part of the process of acquiring a postgraduate research degree rests on the postgraduate being able to undertake self-directed learning. We argue that a desirable approach to postgraduate training would be one that enables a structured means of imparting research competence, while encouraging self-directed learning. The *Indicators for Success in Postgraduate Research* were created in the School of Education, Flinders University, under the auspices of the Postgraduate Training Group (PTG). The intention is to encourage postgraduates to seek out opportunities to learn about significant components of the postgraduate process, while acting as a reference for the academic staff who were responsible for postgraduate training.

The authors are both PhD candidates in the School of Education at Flinders University and members of the Postgraduate Training Group within the same School. Both authors have completed the research degree of Master of Arts before being awarded scholarships to undertake the degree of Doctor of Philosophy.

This paper sets out a discussion of self-directed learning and its importance in the postgraduate experience, how the *Indicators* were generated and our perceptions regarding their beneficial use and future in postgraduate research training.

POSTGRADUATE RESEARCH AS SELF-DIRECTED LEARNING

In this paper postgraduate research students are described as being engaged in self-directed learning. Hmelo and Lin (2000 in Evenson and Hmelo) described a model of self-directed learning as the process in which learners take the initiative for assessing their knowledge relevant to the problems being faced, formulate learning issues, develop and implement a plan to address the learning issues and use their new knowledge to work on solving the

problem. This process could also be seen in terms of diagnosing learning needs in terms of skills for working on problems, formulating goals, identifying resources, implementing the appropriate activities and evaluating the outcomes of their efforts. In principle, self-directed learning implies working on one's own agenda (Lester, 1998), which is part of being a postgraduate research student. At this point it is necessary to distinguish between self-directed learning and learner self-direction. Self-directed learning is the teaching and learning process involved in planning, implementing and evaluating learning activities where learners assume responsibility for the process. Learner self-direction, on the other hand, is about personality that may predispose students to take responsibility for their own learning endeavours. The former relates to skills that can be learnt, while the latter relates to innate personality traits.

Self-directed learning is needed as students seek to understand issues and to clarify their understanding of topics as they work to construct new knowledge. In a postgraduate degree the student controls the educational process to a large extent. This does not mean that the student will not need guidance in the process of being researcher. The student can be assisted to be a self-directed learner by being given strategies for setting goals for personal and instructional improvement and in planning ways to achieve goals. Barrell (1995) described the teacher's (supervisor's) role in assisting students to be self-directing in that they can help students to set goals, to monitor their progress and to engage in reflective thinking. An environment that values self-directed learning will have as much emphasis on the process of learning as the content. Barrell (1995) stated also that an educational approach emphasizing self-direction will teach and engage students in strategies that give them the chance to make decisions and solve problems rather than being told what to do.

POSTGRADUATE TRAINING - THE SITUATION IN THE PAST

Before the implementation of the RTS, School of Education postgraduates had access to a variety of training courses conducted by the University's staff development area and postgraduate association. There was the opportunity to audit degree and postgraduate degree courses related to theory and other topics in the School. There was, and still is, a very robust seminar series held by the Flinders University Institute of International Education that sometimes offered seminars in practical issues such available research software, research methods, publishing and so on. Clearly postgraduate development activities were happening, the RTS rules simply required that these activities happen in a planned way, so that any perceived gaps could be filled.

At Flinders University, this need for a planned approach to training is embraced in various ways at University, Faculty and School. At the University level, issues of funding were addressed. At a Faculty level, the imposition of specific 'milestones' to be completed as various points in the candidature has been implemented. However, at a School level, it was believed that more should be done. This led to the creation of the *Indicators for Success in Postgraduate Research*.

THE CREATION OF THE INDICATORS

The PTG was formed to improve and promote postgraduate training in the School of Education. The membership is comprised of both academics and postgraduates, of differing experiences, ages and gender. It was suggested that the School really needed a framework within which postgraduate training could be conducted, and it was agreed that a first draft of what was to become the *Indicators* would be generated by two members of the Group.

When the *Indicators* were first drafted, they were termed 'competencies' as it was considered an appropriate term for statements of tasks or activities that would describe the skills, knowledge and attributes required by successful PhD students. Competencies have been used in textbooks on research (Gay, 1992) and thus this was not a new idea. It is sensible at this point to acknowledge also that valuable work had already been completed on the issues surrounding how postgraduate researchers could successfully complete their degree. In particular, a study had been conducted at Flinders University by Russell, Lietz, and Hopkins (1995). Russell et al. (1995, p. 39) recom-

mended among other things the implementation of a *co-ordinated, structured, and systematic teaching and support program for research students*. The study had identified that there was a difference in the way supervisors and students viewed the tasks and strategies that a research student needed to carry out. The *Indicators* discussed in this paper could serve to clarify the skills needed to engage in the research degree and to facilitate communication between supervisor and student.

It was clear to the School of Education's PTG that the fledgling 'competencies' would be a tool that could be used by students and supervisors to provide a systematic framework in relation to the learning needed to successfully complete a research postgraduate degree.

A search of the widely used Internet search engines such as Google, Yahoo, Altavista, and Looksmart was undertaken, using the keywords of 'postgraduate research skills', 'postgraduate research training', 'postgraduate research competence', 'postgraduate research standards' and other combinations. These searches revealed some useful work by the Royal Society of Chemistry in Britain. The Society has created a Postgraduate Skills Record that forms part of their program for continuing professional development (Royal Society of Chemistry, n.d.). In this case the PhD is firmly tied to the vocational requirements of the scientific researcher in the field of chemistry.

In addition, the University of South Australia has created the Graduate Qualities (Flexible Learning Centre, 2001), which are more generically based, and, as the name suggests, focus more on personal qualities for all graduates.

After reviewing the work done by other universities and organizations, the *Indicators* were first drafted by asking the question *What does a postgraduate have to do to **effectively** complete their PhD?* This emphasis on effectiveness is deliberate. With the time constraints imposed by the government, it is surely sensible to ensure that postgraduates are using the tools that will enable them to complete a significant and original piece of work in a time- and cost- effective way. The answers to this question were then initially grouped by a member of the PTG under headings derived from the Mayer Key Competencies (DECS, 1997). As the elements of the *Indicators* were refined, so were the headings.

The following assumptions, which were formulated by a PTG member, also influenced the generation of the *Indicators*:

1. PhD students are self-directed learners who are jointly responsible for the progress of their degree with their supervisor;
2. The students have access to necessary technology to facilitate the progress of their degree;
3. The assessment of the degree is the examination of a significant body of work, usually a thesis; and
4. Part of the candidature progress is the publication of study results.

After feedback was incorporated from the PTG, two focus groups were held for the staff and postgraduates from the School of Education. Various suggestions were made which added value, and the most compelling feedback given at the sessions was the refusal by many of the postgraduates to return the *Indicators* document and requests by some students for additional or clean copies. Some students advised that the *Indicators* had prompted them to seek training in needed areas, and discussion of the *Indicators* brought to light resources of which the postgraduates present were unaware. This confirms that motivation can come from identifying what needs to be learnt, rather than from having carried out the learning process.

A question that arose during the creation of the *Indicators* was whether they could or should be tied in some way to vocational requirements.

THE RELATIONSHIP WITH VOCATIONAL REQUIREMENTS

The qualification of PhD is part of the Australian Qualifications Framework (AQF), which is a system of twelve qualifications that range from the Senior Secondary Certificate of Education to Doctoral Degrees. The AQF essentially unifies vocational and academic qualifications in a single system (AQF Advisory Board, 1998).

Considering that a PhD is part of the AQF, together with vocational qualifications, questions may be raised about (1) the advisability of trying to make the *Indicators* more vocationally relevant, and (2) the advisability of making the *Indicators* themselves similar to vocational competencies.

The notion of placing the *Indicators* in a vocational context was firmly rejected by the PTG for two reasons. Firstly, the School of Education enrols a range of students from primary and secondary teachers, to TAFE administrators and business consultants. To make the *Indicators* relevant to all these fields would have been to make them so generic as to be unusable.

Secondly, in the majority of Australian universities, there is no requirement for any form of ongoing assessment as part of the research postgraduate candidature. There is no comment from the supervisor or anybody else about how efficiently the postgraduate planned the work, conducted the work, or evaluated the work. The primary goal of a PhD candidate is, in the first instance, to produce a body of work that will be deemed worthy of the degree, and these *Indicators* are therefore firmly centred around this goal.

With regard to the advisability of making the *Indicators* similar to vocational competencies, these *Indicators* have essentially unit titles and elements of competency. They do not have performance criteria, evidence guides or range variables (ANTA, 2001). This again reflects the perceived need to keep effort focused firmly on the overall goal of the candidature, i.e. to produce a significant piece of work that will add to the body of knowledge. This piece of work will be examined and assessed on its merits. It is argued, therefore, that there is little point in having evidence guides and firm requirements to be met, which may in fact distract the students from the primary purpose of their candidature. It should also be noted that vocational competencies are based on occupations, and to create evidence guides, performance criteria and range variables would restrict the usefulness of the *Indicators* to a limited number of contexts.

It was found in the above mentioned focus groups that postgraduates associated with the VET sector found the similarities and differences to the vocational competencies confusing, and thus the PTG decided to change the name of the document from 'competencies' to *Indicators.*

USING THE INDICATORS

The *Indicators* may be used in several ways. For potential postgraduates, the *Indicators* go a long way in explaining the commitment ahead of them. It is suggested that even people who have undertaken an Honours degree may understate the amount of commitment and effort that a PhD requires, and the *Indicators* effectively outline the depth and breadth of knowledge and skills, and sheer hard work needed.

For current PhD students and their supervisors, the *Indicators* act as a development tool. The primary purpose of the *Indicators* is to enable the postgraduate and their supervisor to evaluate the level of knowledge and skills of the postgraduate, and plan for development in the areas that require developing. By self-assessing current skills against those set down in the *Indicators*, supervisors and students can formulate development plans to ensure that the students attain the skills and knowledge required. These development plans may encompass coursework, staff development courses provided by the University, a reading program, a computer tutorial or a chat with another staff member. The *Indicators* initially may also act as a prompt to investigate tools of which both parties are lacking in knowledge. An example of this would be investigating such bibliographic software as 'Endnote'.

It is suggested that, under the current system of postgraduate candidature, a self-assessment system is more practicable, more flexible and more effective, than trying to meet the cost of formal assessment processes that may be ineffective when dealing with the abstract notions that are endemic to research. It should be strongly emphasised that not all postgraduates will find all the elements applicable to their situation. Part-time students, in particular, may find some elements unnecessary and/or too arduous and this should be accepted and acknowledged.

For the School, the *Indicators* act as a benchmark against which current postgraduate development activities are assessed and can be used in the planning and allocation of resources.

THE FUTURE OF THE INDICATORS

The *Indicators* have been accepted by the School of Education Board as a useful and viable tool that will be introduced into the PhD process. Supervisors within the School will be coached in their use. Even more importantly, existing courses and resources can be checked against the *Indicators* so that deficiencies can be addressed, and the existence of this type of framework means that seminars, informal discussion groups and library resources can be seen to be part of the training experience.

We suggest that these *Indicators* gain value from a competency approach, where the underpinning skills, knowledge and attributes of competent PhD students completing their degree are reviewed; however maintaining a self-assessment method means that the tool has flexibility and wider application than just to mainstream fulltime PhD students. Postgraduates can objectively review the *Indicators* and not only assess their own knowledge and skills against a benchmark, but evaluate whether a particular element of the *Indicators* is applicable to their own situation. It should also be noted that part of the immediate value of the *Indicators* has been the discussion that has been generated and the recognition that effective postgraduate training must involve more than formal courses and seminars.

The *Indicators* are not a panacea for the ills of postgraduate study. They will not make up for poor supervision, although they may give the postgraduate much needed guidance. They will not make up for lack of resources, although we are finding that the *Indicators* have stimulated innovative strategies for obtaining missing resources. The *Indicators* are no more or less than a framework of competency elements to guide the student, supervisor and the School. The *Indicators* set out the skills, knowledge and attributes that a PhD candidate is likely to need to complete their degree in terms of the activities and tasks they need to do. In very real terms, they set a benchmark for PhD students and potential PhD students. MA and other students who undertake research will also find many elements of the document of value.

We believe that the *Indicators for Success in Postgraduate Research* could be easily adapted to most academic units. A copy of the *Indicators* is attached in the hope that other postgraduates and their supervisors will find them useful. We invite supervisors and postgraduate students from schools of education and other disciplines to consider which of the *Indicators* would apply to their fields. We believe that using the *Indicators* can assist postgraduate students to seek the tools they need to be successful in their research degree candidature.

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INDICATORS FOR SUCCESS IN POSTGRADUATE RESEARCH

The *Indicators for Success in Postgraduate Research* have been developed for the information and use of postgraduate research students in the School of Education. Each postgraduate research student needs to develop the skills, knowledge and attitudes to prepare and submit a body of work that complies with the standards of the School and the University. In order for this development to occur, students need to be self-directed learners, who take responsibility for their work.

These *Indicators* will help the postgraduate research student to prepare for and work towards the submission of a thesis. Each of the *Indicators* is activity-based. However, each of these activities presupposes underlying knowledge and skills that will help the student complete a thesis successfully.

It should be noted that not every student will, or should, choose to complete every activity. Rather, each postgraduate student should review these indicators in the light of their own circumstances, and in conjunction with their supervisor, to ascertain exactly what personal development is needed to promote the successful completion of their thesis. It should also be noted that the order of each *Indicator* does not necessarily indicate chronological order, or relative importance of the activity.

1. DEVELOP RESEARCH PLAN

1.1 Identify a topic to research.
1.2 Generate specific research questions.
1.3 Develop a research design that is consistent with research questions and achievable within specified timeframes that will produce conclusions that are strong and consistent.
1.4 Discover sources of research funding, resources and other opportunities that may impact upon your research.
1.5 Identify, evaluate and master sources of information for the literature review.
1.6 Specify and select sources of data/evidence, site and participants.
1.7 Select appropriate methods of treating data/evidence.
1.8 Indicate possible or likely conclusions that may be drawn from the analysis, if appropriate to research method selected.
1.9 Evaluate your research plan according to criteria that are ethical, coherent and meaningful
1.10 Prepare an argument that discusses the significance of your research and the contribution to knowledge that should occur.
1.11 Develop a research proposal as required by School.

2. COLLECT, ORGANISE AND ANALYSE INFORMATION

2.1 Search library catalogues and electronic databases for journals, topics, and authors for general and specific time periods.
2.2 Use search engines on World Wide Web to identify sources of information.
2.3 Maintain records of information sources.
2.4 Cite and reference all information sources in text.
2.5 Use references to support arguments.
2.6 Evaluate critically literature to guide and enrich argument.
2.7 Collect data from specified research site(s) adopting sound ethical procedures.
2.8 Collect data from specified research site(s) using sound sampling procedures that are appropriate for the research questions and methodology.
2.9 Analyse data in a way that generates or tests theory or hypothesis.
2.10 Draw conclusions that add to the body of existing knowledge in area of research questions.
2.11 Maintain all research data in a secure and readily accessible form according to University and School requirements.
2.12 Maintain records of analyses of data that include all the features of the analyses, and the relationship of analyses to overall research.
2.13 Draw strong, coherent and reasonable conclusions from the data analysis.

3. COMMUNICATE IDEAS AND INFORMATION

3.1 Generate a credible grant/scholarship application suitable to procure funding as required.
3.2 Present seminars to disseminate research to academic audience.
3.3 Discover, attend and present at conferences and other public forums
3.4 Listen to and evaluate objectively other people's feedback and suggestions.
3.5 Explain research methods succinctly to others as needed.
3.6 Provide constructive feedback and questions at other people's presentations or after reading other people's written work.
3.7 Participate in university and school committees to enrich the academic environment while learning on university setting.
3.8 Prepare papers describing research for academic and other journals in appropriate style.

4. USE APPROPRIATE TECHNOLOGY

4.1 Use an appropriate word processing package to take advantage of features that facilitate the production of thesis or dissertation.
4.2 Use appropriate applications and devices to capture, store, retrieve, sort, classify, and analyse data.
4.3 Use a bibliographic package to store, sort, and manipulate records of reference sources.
4.4 Use email and bulletin boards to network with colleagues in your own and related research areas.
4.5 Use the Internet to locate additional reference sources, appropriate academic forums, and to publicise own research.
4.6 Use presentation software to produce visual and multimedia aids to present research findings in academic and other forums.
4.7 Develop and adopt appropriate backup routines to protect research files.
4.8 Establish and maintain virus protection procedures.

5. PLAN AND ORGANISE RESEARCH ACTIVITIES

5.1 Identify and plan milestones during progress of thesis.
5.2 Plan daily, weekly and monthly activities.
5.3 Stay current in literature in area of research activity.
5.4 Keep up to date with regard to resources available in university and community related to research.
5.5 Organise, prepare for and attend regular meetings with supervisor(s).
5.6 Learn and comply with University policy on postgraduate research e.g. postgraduate handbook, ethics guidelines, DETYA data collection forms.
5.7 Submit required applications for ethics and other approvals in an accurate and timely manner.
5.8 Obtain, complete and submit relevant forms for annual review of progress, funding, DETYA collection, and any other documentation required for enrolment or to progress thesis.
5.9 Organise required resources for research activities, e.g. recording equipment, questionnaires.
5.10 Review thesis/dissertation progress regularly and plan skills development.

6. INTERACT WITH OTHERS

6.1 Negotiate and manage relationship with supervisor(s).
6.2 Attend research seminars and other research training activities regularly.
6.3 Participate in School, Centre and Institute research-related activities.
6.4 Network with subject librarian, School Office, and other relevant University personnel to ascertain their roles and functions as relevant to need.
6.5 Seek out external agencies and individuals to elicit their involvement where needed.
6.6 Seek and utilise opportunities to learn about general academic and specific university contexts.
6.7 Discuss research with other research postgraduate students and academic staff and fellow researchers.

7. PREPARE THESIS/ DISSERTATION

7.1 Plan the layout and content of thesis.
7.2 Adopt academic conventions of report writing.
7.3 Apply criteria to evaluate your thesis writing.
7.4 Produce a thesis related to research questions in an appropriate academic style and within the word limits required by the University.
7.5 Prepare and present thesis on-line.

[1] For simplicity, when the term 'postgraduate' is used, it will be taken to mean research postgraduate.

CHANGING CANDIDATURE APPROVAL PROCESSES: A REVIEW OF THE RMIT BUSINESS PANEL REVIEW OF CANDIDATURE PROCESS

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ABSTRACT

This paper outlines findings from a study reviewing the responses of staff and research students in the Faculty of Business at RMIT regarding a change in the candidature approval process from a paper based to an oral based approval system. Such changes were driven by concerns on improving the quality of the research student processes as part of both internal RMIT University quality initiatives and the increasing changes in the tertiary sector, particularly the concerns outlined by the government in their White paper on research.

This study was in three parts. The first considered a direct comparison of the two systems considering advantages and disadvantages of the two systems. Given that research students' experiences do not occur in isolation, the second part considered the impact on the students' experiences of other elements of the research environment as identified in previous research. Finally, the third part considered what areas still needed to be improved in the new system. Overall it would seem that the change from a paper based to an oral based approval system of candidature has been a positive change for both staff and students.

INTRODUCTION

The tertiary market is becoming increasingly more competitive globally and technology has improved the access and demand for knowledge (Devonshire & Crocker, 1999). In a number of countries, governments are constantly reducing funding and requiring more and more accountability from universities (Poole & Spear, 1997). The sector is in a position of reviewing strategies and procedures in an effort to meet the pressures they are facing, so that they can be more competitive both locally and globally. The government released a White paper on research that was the result of a review of national strategies on research. Part of this document expressed the government's desire for educational institutes to improve the quality of research training (DETYA, 1999). In line with these changes RMIT began reviewing strategies and procedures within the research area. The aim of such changes was to improve the quality within the research domain. This matches a number of other initiatives that RMIT has instituted, over the past few years in an effort to improve the quality of the service being offered. These include, Projects of Quality Assurance, Business Process Re-Engineering, and the work of the faculty Director Of Teaching Quality. As Martin Epper (1999) states, … *focusing internally on process improvement is the first step toward achieving greater competitive advantage* (p. 26). One of the areas reviewed was the policies and processes involving Research Students – those students studying PhDs and Masters by Research. From this review a number of changes were made within the university.

One research student training process that was altered at RMIT, was the process research students follow to gain approval for their candidature. In the past the University has required students to submit a written proposal outlining their proposed research and any ethical requirements that need to be addressed (RMIT Higher Degrees by Research Information Booklet, May, 1998, p. 42). This proposal was then approved by a series of committees (Faculty Higher Degrees Committee, Faculty Board, University Higher Degrees Committee). This process was very bureaucratic often slowing down the process of approval over small administrative matters. In an effort to provide a more relevant and immediate experience for Research Students, this approval process was altered by the faculty so that proposals were presented orally to a panel consisting of a member from the faculty level, the research coordinator within the school and the supervisors. A written document was provided to panel members one week prior to the review to supplement this oral presentation. This move to oral presentations helps to build skills for research students which ACNielsen Research Services (2000) found were considered by the business community to be one of the top three skill deficiencies in graduates. Further, by increasing the responsiveness to the business community, RMIT addresses concerns regarding the preparedness of research degree graduates for employment, a key concern outlined in the 1999 White paper on research

Such a change provided an opportunity for RMIT Business to review processes at a point in a student's candidature when the university can influence a student's experience of their research degree. As Phillips (1994, p. 125) states, *there are these specific points at which work can be influenced and the quality improved*. This point in a student's candidature is doubly important considering findings that a student's experience in their first year is the most crucial (Wright & Cochrane, 2000). Additionally, as this process involves other stakeholders in the research student's experience, it was possible to take the opportunity to gain feedback from other stakeholders, in particular panel members.

Having established the context of the changes to the research student candidature approval process, the factors in the research environment influencing research student's experiences, from previous studies, will be considered. Following this, the methodology will be presented, including information about the sample selection, data collection, the instruments used and the data analysis conducted. The results are presented in four sections, the details of the sample, the comparison between the two systems, the impact of the research environment and the suggested areas for improvement. These results are briefly discussed and conclusions drawn.

THE RESEARCH ENVIRONMENT

Any given aspect of a research student's experience is best understood in the context of their entire research experience – the research environment. For example, poor supervision or poor facilities are likely to create a negative experience for research students that would increase the negativity of the panel review experience. Consequently it is necessary to identify other key areas within the research student experience so that the context of reported perceptions can be taken into account. As Calder (1995) states, *information on issues related to student progress and outcomes of study will also need to form part of the evaluation activities* (p. 91). Other factors that have been identified as influencing the research students' experience include: supervision (Nyquist et al, 1999; de Valero, 2001; Holdaway, 1997; Whittle, 1992), support services and facilities (Britt & Hirt, 1999; Nyquist et al, 1999; Dinham & Scott, 1999; Devonshire & Crocker, 1999; de Valero, 2001; Elton & Pope, 1992), quality of methodology training (Wright, 1992; MacKechnie & MacKechnie, 1999; Wright & Cochrane, 2000, de Valero, 2001), student expectations (Kam, 1997; Nyquist et. al, 1999; Illing, 2000), relevance to the workplace (Cryer, 1998), the balance between work and home life (Nyquist, et. al, 1999), financial support (Wright & Cochrane, 2000; de Valero, 2001) and intrinsic student characteristics (Wright & Cochrane, 2000; de Valero, 2001).

Supervision is a key aspect of the research environment for research students. A research student's major connection to a university is through their supervisor. In particular a supervisor provides research students with critical feedback on the direction and progress of their work (Campbell, 2000). However different advising styles are appropriate for different types of students (Kam, 1997). Some students require a great deal of guidance and

support from their supervisor, while others require only minimal guidance and support. Consequently, supervision issues may impact on some research students' experiences more than others. This suggests that questions should be broad enough to allow the student's perceptions of the importance of supervisors in the panel review process to emerge.

There has been interest in the effect of support services and facilities provided by universities on the research student experience (Dinham & Scott, 1999, Elton & Pope, 1992). De Valero (2001) reports on a study that found that a supportive environment led to more integrated students who were more persistent. Consequently the success of students (timely completion) was increased. Devonshire and Crocker (1999) reported that postgraduate distance students faced isolation that, they suggested, increased the need for appropriate support systems to facilitate retention and quality of learning outcomes. This debate has also arisen in a discipline context. Due to the nature of the natural sciences, research students in the natural sciences have frequently had access to services and facilities that research students in the social sciences have not. This is important as completion levels are lower in the social science disciplines compared with the natural science disciplines (Dunkerley & Weeks, 1994). Thus, as RMIT Business students are social science students it is important to assess the services and facilities provided to them.

It has been identified that research students require grounding in research techniques in order to conduct their research (de Valero, 2001; Wright & Cochrane, 2000). De Valero (2001) found that research students from departments which featured coursework oriented to developing research skills in their research degrees, had higher completion rates in a shorter amount of time than departments that did not. However, Wright (1992) found a number of problems with many research methodology training programs suggesting that research training needed to be relevant to be effective. Consequently, it would seem that it is not only the existence of research methodology training, but also the quality of that training which is important to research student success.

The expectations research students have of the research student experience effects the success of that experience. In particular research student's expectations have been shown to effect both their supervision and learning experiences (Nyquist, et al. 1999; Kam, 1997). When students' expectations match the academic environment students would seem to have a very positive and rewarding experience (Nyquist, et al. 1999; Kam, 1997). There can be problems however, if students' expectations do not match their experience. This could be exacerbated if students are studying in social science discipline areas as expectations may be based on a natural sciences model. More specifically within the business discipline, students that have come from an industry background may have expectations of resources based on their experiences of the resources available to them in their industry setting. As universities do not have the same funds at their disposal, the resources provided may seem poor in comparison.

There are a number of pressures on universities to increase the relevance to the workplace of the training they offer to students. As the government changes funding to try and encourage the financial participation of industry in the university sector there is an increasing interest in directing research towards the sorts of issues of interest to attract industry groups. Additionally, there have been reports investigating how well universities are equipping students for the workplace (AC Nielson Research Services, 2000) and the agreement or disagreement between academics and industry leaders on the perceptions of the skills required from a graduate (Nicholson & Cushman, 2000). While arguably research degrees are not always desired to be of relevance to industry, as some students may be studying to explore a particular area of interest, and not to gain workplace training, it is of concern that *students find considerable difficulty in identifying and articulating the skills that they possess* (Cryer, 1998, p. 214).

Just as the research environment factors within the university impact on the positiveness of research students' experiences there are factors outside of the university that also influence research students' experiences. While employees struggle with how to balance work and family commitments, the research student has an additional commitment, study. While Bourner and Race (1995) suggest that undergraduate part-time students can help themselves to succeed by going to classes and building contacts with the other students, research students do not

really have classes to attend, thus increasing the difficulties for them to balance all their commitments. Saltzstein, Ting and Saltzstein (2001) found that organisational understanding (how supportive the organisation culture was of work-family concerns) and working part time had a significantly positive impact on employee's satisfaction with work-family balance. This suggests that institutional support not only help to build a desirable research environment, but helps students to balance their study with work and family commitments. Further, it suggests that part time study options are important to providing research students with the flexibility to work out a balance of their own.

Financial support for research students while studying a research degree have been found to be associated with a higher rate of successful completion (de Valero, 2001, Wright & Cochrane, 2000). Wright and Cochrane's British study of factors influencing successful submission of PhD theses, found that, among other factors, possession of research council funding was associated with successful completion of PhDs. Similarly de Valero (2001) reports on studies in the U.S.A. that have found not only that financial support influences successful research degree completion, but that different types of financial aid have different levels of influence. The three types outlined were research assistantships, university-funded fellowships and teaching assistantships. Teaching assistantships were reported to be associated with higher PhD completion rates, particularly for social science and humanities students (de Valero, 2001). Given that funding for research degrees differs from country to country, these reports must be taken within the context of particular funding environments.

Finally, there are intrinsic student factors that affect research students' successful completion of their research degrees. These factors are a mixture of demographics and internal mental states such as motivation, and ability (de Valero, 2001). It has been found that *personal factors alone are not sufficient to explain or predict graduate student success* (de Valero, 2001, p. 342). From an institutional perspective these characteristics are important in so far as they can be influenced (positively) to aid successful completion. While institutions could influence these characteristics to some degree, it would be difficult to argue that they are the sole influence as such factors may also be influenced by past experience with research, home and work situations, as well as an individual's general attitudes. They do offer some insight however into the reactions of research students to the research environment. Consequently, taking into account all the elements that have been suggested to influence the success of research students it was considered important to incorporate these elements in reviewing students' experiences of the panel review candidature approval process.

METHODOLOGY

A survey design was used which included both quantitative and qualitative elements. The study was predominantly qualitative so as to let responses emerge unprompted, and because the sample size was so small that quantitative analysis was limited. Self-directed surveys were used to allow for the confidentiality required in obtaining useful student feedback. To improve the accuracy of data through data triangulation, two surveys were developed; one for panel members and one for students. A reminder letter was sent out approximately one to two weeks after the original collection to improve response rates (Hoinville, Jowell and Associates, 1989).

SAMPLE

There were two sample groups. The first sample group consisted of staff involved in the panel review, that is supervisors, and school representatives. The faculty representative was not included due to involvement in this research study. The second sample consisted of research students enrolled in either a PhD or a Masters by Research in the Faculty of Business at RMIT University after January 1 2000, and any students transferring from a Masters by Research to a PhD after that date who had completed the oral based candidature review panel process.

DATA COLLECTION

The student data were collected in four collection periods so that sufficient data could be accumulated for analysis. Data from staff were collected only once, to coincide with the first collection period and to avoid duplication. The first set of surveys was sent out in October 2000, the second in March 2001, the third in early September 2001 and the final in late November 2001.

INSTRUMENTS

SURVEY

Two self-directed surveys were used which had mostly open-ended questions with a few rating scales to collect data. As these surveys were designed for a specific context, items were largely generated specifically for this study. Consequently, no reliability or validity statistics exist for the items.

Questions for the student survey were broken into 3 categories, personal details to provide demographics, preparation questions to assess the process before actual presentation to the panel, and questions regarding the panel review presentation itself. Generally, questions were designed to be as open as possible to allow responses to emerge unprompted from the data.

The staff survey consisted of four sections, personal details, comparison of two systems, administration and general. In the personal details section items were designed to establish details about level of involvement at RMIT Business with research students. The comparison of the two systems section consisted of seven open ended questions designed to identify the perceived advantages and disadvantages of the two systems. The administration section was designed to focus on the oral based panel review process more specifically, and the general section consisted of two general open ended questions designed to give participants an opportunity to identify anything that was relevant that had not previously been covered.

DATA ANALYSIS

As there was both qualitative and quantitative data, two types of data analysis were used. For the qualitative data the editing style of content analysis as described by King (1994) was used. Comments were sorted under question headings then comments of a similar theme were grouped together. A count was made of how many times that theme of comment was made. For the quantitative data, chi-square tests of independence were conducted for the rating scales provided because of the small sample size. Pairwise deletion was used for missing data so sample sizes for different categories vary depending on how many participants responded to that item.

RESULTS

RESULTS OF QUANTITATIVE ANALYSIS

The results of the chi-square tests of independence analysis did not show any significant differences between items. In two categories, ratings of the library and confidence levels, the chi-square test could not be conducted, as there were insufficient responses in some cells.

SAMPLE DETAILS

The first sample group consisted of nine staff involved in the panel review. As 26 staff were invited to participate, this represents a response rate of 35%. Of these nine staff, five were female and four were male. They had worked at RMIT for a range of seven months to nineteen years. Six of them had completed a PhD, two were working on their PhDs and one had completed a Masters degree. There was some confusion from staff about how many panels they had been involved in and what the details of the students were (whether they were part time or full time). This seemed to be due to confusion between the progress review process (which had also been changed from a paper based system to a panel review system) and the candidature review process.

The student group consisted of 37 research students. As 74 students were invited to participate, this is a response rate of 50%. Students' ages ranged from 23 to 62 years old. There were 20 full time and 16 part time students. The majority of participants were Australian or New Zealand citizens or permanent residents 83% (30 out of 36),

while 18% of students (6 out of 36) were international students. Slightly more of the participants were enrolled in the Masters by Research (19 out of 37). There were fifteen participants enrolled in the PhD program and two students who were transferring from a Masters to a PhD. There were slightly more male respondents (54%) than females (46%).

The majority of participants (31%) were from the School of Management. The school with the next most frequent number of respondents was the School of Business Information Technology (23%), closely followed by the School of Accounting and Law (20%). There were slightly less respondents from the School of Economics and Finance (17%) and only a small number of respondents from the School of Marketing (9%). There were no respondents from the Transport Research Centre.

To check the representativeness of the sample, the sample statistics were compared against the population statistics. The sample was remarkably similar to the populations with one minor exception. The distribution across status, whether the participants were part time or full time, was less even than in the population, showing a slight over representation of full time students.

HOW DOES THE NEW ORAL BASED APPROVAL SYSTEM COMPARE WITH THE PREVIOUS PAPER BASED APPROVAL SYSTEM?

To compare the previous paper based approval system with the new oral based approval system comments were grouped into perceived advantages and disadvantages of each system. As most students did not participate in the previous system the comments regarding this system were compiled from the transfer students and the staff comments. The advantages and disadvantages of the new oral based approval system came from all students and staff.

Participants were generally more positive about the new oral based approval system than the previous paper based approval system. Participants did think that the paper based approval system had the advantage of offering an opportunity for building cross-school research standards. Further it was commented that the paper based system posed no difficulties for candidates who were nervous performers. In contrast the disadvantages of the previous paper based system stemmed around administrative difficulties, as participants were concerned about time delays holding up research and the inappropriateness of assessors and forms for assessing research proposals. This is illustrated by the comment that with the new system, *students could begin on real work not dumbing down forms*.

The key advantages of the new oral based approval system centred around better communication as candidates had the opportunity to interact with staff and gain immediate feedback, as well as give feedback. One respondent summed this up in their comment that the panel review was an *opportunity for students to talk about their work and consequently feel less isolated*. The panel reviews were viewed as supportive and motivating. Further, they were thought to be quicker and more efficient (by those who had participated in both systems) and allowed for the University to check the quality of candidates research.

Disadvantages mentioned were concerned with confusion during the panel review, and administrative difficulties. Such confusion concerned the unclear agenda of the meeting; (*Lack of clarity about requirements, was not really aware session was a 'go/no-go' meeting!*) the behaviour of the panel; (*They disagreed amongst themselves – left me uncertain as to what solution/direction was*) and how candidates were rated (*The lack of clarity about whose opinion was to be put there – student, chair, supervisor?*). The administrative difficulties revealed concerns about difficulties in scheduling, equipment problems and finding the room.

In regards to the administrative elements of the panel review, the time length of the review and the appropriateness of the venue and facilities responses were mostly favourable. These were reflected in the ratings of administration where most respondents indicated that access to administration was very good, or good. A small number of respondents commented that the panel review was too short, but most commented that the length was appropri-

ate. Most respondents commented the venue was good, however there were a few comments indicating problems with equipment, the location of the room and the quality of the room.

Participants were asked to rate how easily they could obtain information on what was expected of them in the panel review. Most respondents had found some information on what was expected. While a large number of respondents found information reasonable or easily obtainable, there were still quite a lot of respondents who found information brief or minimal. This was echoed in comments that indicated lack of clarity about the agenda of the meeting and in comments that clearer guidelines could be provided.

WHAT WAS THE IMPACT OF THE RESEARCH ENVIRONMENT ON THE RESPONDENT'S EXPERIENCE OF THE PANEL REVIEW PROCESS?

A number of elements of the research environment were considered in order to identify anything that might be a problem to students thus influencing their experience of the panel review process. There were two main resources that respondents indicated as helpful in preparing for their panel review; their supervisors and the research training provided. A smaller number of respondents drew on their personal experience, on other students or material provided either by the research development unit, or workshops they had attended.

Given the importance of appropriate research training, respondents were asked how the research training provided helped them with their panel review. Responses were divided between comments that the research training was helpful, and on how it was not. Additionally, there were more positive than negative responses. Respondents indicated that the research training provided information about proposals and research skills. One respondent commented that the subject was *helpful with formats, design and presentation lit review methods, opps available – methods were exposed*. Respondents commented that the research subject provided them with an opportunity to practice the process, which as one staff member commented *student was very well prepared due in part to the practice provided in the research methods subject*. A smaller number of respondents commented that they found the subject helped their motivation, and offered an opportunity to socialise. Problems with the research training were largely problems with the content as one respondent commented *I found that some of the content was misleading*. A smaller number of comments suggested that there were too many lectures, that there was confusion due to differing views between the lecturer and the panel, and a staff member still felt that candidates had not adequately addressed methodology issues, commenting that *candidates on the whole badly prepared for methodological and research design factors*.

Rather than just obtaining a broad overview of research students' perceptions of supervision, questions were directed specifically towards their involvement in preparation for the panel review. The first question concerned the senior supervisor and the other the student's second supervisor. From the students' responses comments could be placed on a continuum from no involvement, very little involvement, reviewed and commented on draft and very involved. As was expected, senior supervisors were indicated to be much more involved in preparation than the second supervisor.

Most participants reported that the panel review process did not seem to particularly impact on their expectations on studying a research degree. However, there were some respondents that suggested that the process provided them with goals, as one responded *It enabled myself to set clear objectives as to what is required in the interim term (6 months) to complete the degree in the long term*. Further, some respondents offered an emotional response as how the panel review process impacted on their expectations. One respondent commented *It was a positive, reinforcing experience*. In contrast with the general lack of impact reported, respondents rated their confidence in studying a research degree to be very confident or reasonably confident. A very small number were unsure, but no respondents indicated that they were not very or not at all confident.
Many respondents commented that the panel review process did not have much relevance to their work skills. Some commented that it provided presentation experience and some indicated that it encouraged their research progress.

Roughly half the respondents had difficulty in balancing home, work and family commitments. Of those respondents who did not find it difficult to balance, who gave a reason why, they indicated that interim deadlines and the research training provided had helped them to progress. Others indicated that they did not have many other commitments to try and balance as they were full-time students and had no family or work commitments. Alternately, those respondents who faced difficulties in balancing their commitments suggested that there were not enough deadlines to guide them through. They indicated that they faced parallel adjustment issues, such as international relocation. They commented that they had high work and family demands, illustrated by one comment *I have [a] full time job plus family including demanding six year old*. Further, some were also doing some coursework, which they found difficult to balance with their research.

To gain a picture of respondents' financial support it was considered what their working arrangements were, as well as their rating of funding provided by the university. There were four types of working arrangements respondents indicated. There were quite a few respondents who indicated that they were students only. There were a similar number of respondents who indicated that they worked full-time in the university system. Slightly less respondents indicated that they had a full-time career type working arrangement, as one commented that they were a *full-time general manager*. The least frequent job type indicated was that of part time/casual work. In rating the funding, most indicated that they did not use or it was not applicable to them at this stage of their research. Discounting those respondents, funding was generally rated as very good.

A further three aspects of the research environment were rated, the respondents environment (study room, desk space), equipment (computer facilities) and the library. With environment and equipment there were a number of respondents who indicated that they didn't use the study room or computer facilities provided. Of those who did use the facilities, respondents indicated that the environment was very good. They were somewhat less positive regarding the equipment with the most frequent response that the equipment was good, rather than very good. Most people had used the library and generally rated it as good, or satisfactory.

AREAS INDICATED FOR IMPROVEMENT

There were two questions asking for respondents to indicate areas for improvement, one asking what improvements could be made to help prepare candidates, and one on how the panel review process could be improved in general. Responses to these were pooled to indicate areas to be improved. The most frequently mentioned area that needed improvement was clearer instructions for students. As one respondent commented *More detailed description of what is required eg. How much detail to go into, what type of presentation is expected*. The next most frequently commented area for improvement was clearer instructions for staff, *ensure supervisors understand it properly*. Closely following this in frequency, was the need to build a research environment, as one respondent commented *We need to be involved in a truly research environment not only with our uni mates but having the opportunity to see what the faculty members **do** in research*. There were also half a dozen other areas indicated for improvement, that were suggested as needing improvement, however these were not mentioned very frequently. Respondents equally frequently suggested that the panel review should contain more discussion, that the audience could be widened to include other students and clarify the process of providing feedback at the end of the review. One commented that they *prefer written assessment after the event with constructive advice*. Following these comments were two areas that were also equally frequently commented on. Respondents suggested that the booking of equipment be scheduled at the time of the scheduling of the review, and that the scheduling of the reviews be carefully spaced to reflect the heavy demands on some staff's time, and the need for students to fit work commitments around their review. The final suggestion was that the research training needed to be improved.

DISCUSSION

It would seem that the findings support the change in processes as criticisms of the paper based system echo the reasons for abandoning it, the slow administrative intensive processes. The emphasis on feedback as an advantage of the new system reinforces Campbell's (2000) assertion on the needs of postgraduate students for feedback.

Further, this feedback is generally sought from supervisors, however the results of this study suggest that other processes can be used (such as the panel approval process) to supplement the students sources of feedback. While candidates seemed to be happy that there was a greater opportunity for communication, the comments about confusion suggest that this opportunity for greater communication is not as effective as it could be. This was further reinforced by the comments concerning the briefness of information available about the panel review.

While the administration was generally commented to be positive, there were some concerns with scheduling which may portend future difficulties. However, some of the difficulties with scheduling, and equipment may be more indicative of initial implementation problems.

It seemed that the area within the research environment that had the biggest impact on the experiences of the panel review process was the research training. Such findings agree with Wright's (1992) comments that the quality of research training is important to student's success. It would seem that respondents were largely full time students that were reasonably confident about what they needed to do. In summary, it would seem that the elements of the research environment examined, with the possible exception of the research training, did not particularly impact on respondents' experience of the new panel review process.

LIMITATIONS

There are some limitations of this study that need to be considered. While the response rate was reasonably good, the size of the sample was still small, limiting the kinds of analysis available. However, quantitative ratings tended to support the qualitative comments, reinforcing the findings.

Additionally, this was not the only change made to the research degree at the time of data collection. The progress review process was changed to an oral based process, and the research facilities at RMIT Business were centralised and upgraded. Consequently it may be difficult to isolate changes inherent to the candidature approval process.

CONCLUSION

Overall it would seem that the change from a paper based approval of candidature system to an oral based system has been a positive change for both staff and students. Of course as with any new system there are matters still to be addressed. However, it is very encouraging to report such positive support for RMIT Business' new research student candidature approval processes.

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DETECTING AND DEALING WITH EARLY WARNING SIGNS IN POSTGRADUATE RESEARCH EDUCATION: A WORK-IN-PROGRESS

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ABSTRACT

Recent changes to the Research Training Scheme and the release of DETYA data on completion rates for research higher degree students have sharpened universities' focus on the quality of their students' research education experience. A number of studies have sought to highlight the factors that predict research students' timely completion of their studies. Other studies have suggested taking a risk analysis approach to selecting students. This is highly problematic because the reasons why research students' complete their studies in a timely way are complex and ambiguous. Assessing the risk factors of selecting certain students could also lead to massive generalisations about students, impacting particularly on equity groups' access to research education. Instead, this paper reflects on the beginnings of a study into how expert supervisors detect and deal with early warning signs that their research students are experiencing difficulty. In particular, this paper aims to synthesize the substantial literature on the student-supervisor relationship; other dimensions impacting on research education, such as access to a research culture; factors associated with timely completions in research education; and frameworks applied to undergraduate student completions. This will assist in creating a clearer understanding of how expert supervisors detect the signs that their students are experiencing particular types of difficulties and the ways in which they develop strategies to ameliorate these difficulties.

INTRODUCTION

The recent introduction of the Research Training Scheme and the release of DETYA (now DEST) data on research students' completion rates for research higher degree students have sharpened Australian universities' pre-existing focus on the quality of their students' research education experience and on timely completion rates. Globally, universities, governments, and international organisations, such as the OECD (1987), have attempted to enhance their understanding of the factors involved in timely completions in order to improve both the overall rate of completion and shorten the time to completion (or, in US studies, the time to degree). A number of studies, particularly Latona and Browne (2001) in the Australian context, have sought to highlight the factors that predict research students' timely completion of their studies. There have been calls by many groups including DEST to improve timely completion rates by introducing more comprehensive supervisor 'training' or staff development and by improving postgraduate students' inclusion in research cultures within university research centres and schools (Deem & Brehony, 2000). Many universities have sought to tighten their selection processes as a way of improving completion rates (Lovitts, 2001), even verging on adopting a risk analysis approach to selecting students. This approach is highly problematic because the reasons why research students' complete their studies in a timely way are complex and ambiguous. This paper provides a synthesis of the literature in order to provide a rational for a proposed new study seeking to understand more about these reasons. This study will explore how expert supervisors detect and deal with early warning signs that their research students are experiencing difficulty. It will also feature a model of research education that seeks to incorporate all of the dimensions of research education not only the supervisory relationship. This study, therefore, will take a preventative, interven-

tionist approach to improving timely completion rates rather than an approach that seeks to raise the barrier at the point of selection, assessing the risks of admitting some students as if they were business propositions. It will also avoid taking a reactive approach that focuses only on the latter stages of candidature. It will be based on integrating multiple theoretical perspectives as well as those of supervisors, students and support staff.

EXPLORING THE FACTORS THAT PREDICT TIMELY COMPLETIONS

Since the 1970s, university and governmental concerns about the declining rates of timely completions among research higher degree students (especially doctoral students) have generated many studies into the factors predicting successful and timely completions. The one common finding in almost all of these studies completed in many countries, including Australia, UK, USA, Canada, Sweden, France, and Norway (OECD, 1987), was that the reasons why research students complete are complex and intertwined. As one academic exclaimed, 'it's always a constellation of reasons' (Lovitts 2000, p. 24). The OECD report (1987) identified two sets of issues affecting completions: student factors, including their characteristics and situation, and university factors, including the quality of both the research climate and supervision.

More recently, Latona and Browne (2001) constructed a useful synthesis of UK, US and Australian studies and developed a framework of three groups of influences that predict timely completions: institutional or environmental factors, individual supervision arrangements, and student cohorts and characteristics. Frameworks exploring undergraduate attrition rates can also be usefully applied to research education. Morgan and Tam (1999) developed a framework of four groups of reasons why undergraduate distance education students did not complete their studies: situational (students' life circumstances), dispositional (students' characteristics), institutional (problems students experience navigating university systems), and epistemological (difficulties students experience with the disciplinary content and context). Only the last group of reasons described by Morgan and Tam has less relevance for research students because it would be expected that they had already come to terms with their own disciplinary discourses. Reversing the order of Latona and Browne's framework, I will explore the major approaches that have been suggested to address each of these issues and how some of these approaches fall into the risk analysis category, while others can be usefully explored as sites of potential early warning signs that students are experiencing difficulties.

STUDENT COHORTS AND CHARACTERISTICS

I will explore student cohorts and characteristics (which combine Morgan and Tam's situational and dispositional factors) first because it encompasses groups of factors that are the most removed from my approach to ensuring timely completion rates and the most likely to lead to a potential risk analysis approach. Latona and Browne (2001) include in this category factors such as disciplinary differences, where around the world studies have indicated that science students are more likely to complete faster and more often than social science and humanities students (Martin et al. 1999; Seagram et al. 1998; Becher et al. 1994; Burgess & Band, 1998; Wright & Cochrane, 2000; Bowen & Rudenstine, 1992; Lovitts, 2001). They also refer to studies that suggest that earlier findings in the USA, Sweden (OECD, 1987) and Australia (Moses, 1994) that women took longer to complete their research higher degree studies have now been overturned, with no significant difference between the completion rates or the time to completion between genders (Wright & Cochrane, 2000; Martin et al. 1999). A number of qualitative studies have, however, demonstrated the fact that students experience research education very differently according to both gender and ethnicity. These issues will be explored in greater detail when I examine the varying access students have to their disciplines' research cultures.

Looking at admission and prior qualification issues, Latona and Browne (2001) have indicated that a number of Australian and UK studies have shown that students who have completed an honours program prior to their research higher degree studies are more likely to complete in a timely fashion. Most studies also indicate that financially supported students have a higher rate of timely completions. While Latona and Browne (2001) highlighted Australian studies that indicated no significant difference between completion times for part-time

students in full-time employment than for full-time students and Wright and Cochrane's (2000) study at the University of Birmingham found that part-time students were more likely to complete within the equivalent of 4 years, other studies (Martin et al. 1999; US National Centre for Education Statistics quoted in Latona & Browne, 2000; Seagram et al. 1998) showed that full-time students were more likely to complete and in a shorter timeframe. The amorphous area of students' psychological and behavioural characteristics as predictors of successful and timely completions was explored in a Swedish study (in OECD, 1987, p. 50); and in a US study (Johnson et al, 2000) that recommended the use of a Procrastination Inventory. A number of studies have tried to establish whether age was a factor in predicting timely completions. While the Australian DETYA study (Martin et al. 1999) found that students in the 25-29 age group had the lowest probability of completing, other studies in the UK (Wright & Cochrane, 2000) have found no significant difference between completion rates for students of various age groups completing within 4 years.

SELECTIVE ADMISSIONS MYTH

While exploring these factors is important in trying to predict timely completions of research higher degree study, focusing on them can run the risk of supporting the selective admissions myth. Benkin (in Lovitts, 2001) was the first to identify this 'selective admissions myth', which postulates that strict admissions procedures identify the most able students and that those who, despite being *chosen*, fail to complete their studies do so only as a matter of choice. As Lovitts (2001, p. 21) explains, this idea has developed from the theory that *talent is a scarcer commodity than it actually is and that selecting for it, rather than seeking to develop it, is [an academic's] main job*. By reacting to increasing non-completion rates and lengthy times to degrees by tightening selection procedures, universities emphasise the fact that they believe that all of the problems lie within the students rather than within their research cultures or institutional structures (Lovitts, 2001). This approach draws on liberal ideologies that suggest that the individual makes their own experience in the world and ignores structural issues such as discrimination and other systemic problems. Indeed, as Ibarra (quoted in Lovitts, 2001) indicates even policies that are attempting to respond to higher non-completion rates for ethnic minorities in the US, including providing additional financial, academic and cultural support, assume that the problem lies within the student and not in the system.

This is not to suggest that admission procedures are not important or that research higher degree study is for everyone. Rather, developing a set of student characteristics that could statistically predict non-completion or taking a lengthy time to complete could lead to massive generalisations about students that would particularly disadvantage equity groups, who already find access to research education problematic enough. This approach would be equivalent to taking a risk assessment of each applicant to see if they fell into a high-risk category, as if they were business propositions. It also ignores the evidence from around the world that indicates that the reasons for non-completion are complex and intertwined. Such an approach tells us very little about how expert supervisors detect and deal with early warning signs that students are experiencing difficulties and will, therefore, not form part of my planned study.

SUPERVISION

A great deal of work has been done on exploring the student-supervisor relationship, which continues to be central particularly to UK, Canadian and Australian research education programs, and on identifying the characteristics of effective supervision. Quality supervision is also regarded as vital to achieving timely completion rates (Seagram et al. 1998; Lovitts, 2001; Dinham & Scott, 1999). In a useful synthesis of the literature, Latona & Browne (2001, pp. 6-7) identify the following issues as important in relation to good supervisory practice:

- targeted and timely feedback
- frequent meetings with students
- open and dynamic negotiation of mutual expectations and responsibilities

- supportive and collegial relationships with students
- encouraging students to start early on their topics
- encouraging students not to change topics
- continuity in supervision.

While all of these issues are vital to effective supervision, they only focus on what Smith (2001, p 26) calls the 'administrative framing' of supervision that emphasises supervisors' and students' roles and responsibilities. These explorations of postgraduate supervision are situated within liberal discourses about research education which ignore issues of power and control; do not acknowledge the pedagogical aspects of supervision; construct both the student and supervisor as white, Anglo-Celtic, male and rational; and do not explore the role of emotion, affect, irrationality, the body and desire in supervision. Part of the reason for the prevalence of the administrative model of supervision lies in the continuing belief that research supervision is merely an extension of academics' research functions and not a form of teaching. Connell (1985), Green and Lee (1995), and Smith (2001) use a pedagogical framework to explore postgraduate supervision, unearthing issues of power and control in educational settings, knowledge production and identity transformation and questioning implicit assumptions about supervisory practices.

In problematising the familiar, these postmodernist explorations of supervision have uncovered the hidden construction of both supervisors and students as white, Anglo-Celtic, male, rational, autonomous, disembodied beings. This construction is heavily embedded in the traditional master/apprentice model of supervision. This traditional model is based on a transmissive approach to education, where, as Grant (2001) emphasises, students want to be filled up with their supervisor's knowledge. Students or 'scholarly disciples' in this traditional model must possess enough 'genius' to absorb the supervisor's knowledge and skill (Yeatman, 1995, p. 9). Naturally, these implicit assumptions and approaches create problems for students from 'other' non-dominant groups, *who have not been invited to imagine themselves as subjects of genius* (Yeatman, 1995, p. 9); that is all women, and men and women from working class or non-Anglo-Celtic backgrounds. They also create difficulties for supervisors from non-dominant groups, especially women who have traditionally been constructed in higher education (and in most public spaces) as either *the desexualised mother or the dangerous seductress* (Threadgold, 1995, p. 46).

Furthermore, the goal that the PhD student will become an independent, autonomous scholar contains inherent and greater difficulties for female students, as Lee and Williams (1999) point out. Traditionally in liberal discourses, rationality and autonomy have been characterised as male attributes, while the opposite, irrationality and dependence, have been perceived as feminine. In becoming a rational, autonomous scholar, women not only have to put themselves in opposition to what society regards as female characteristics but they also have to overcome their own notions of 'bad girlness' and 'good girlness'. As Lee and Williams (1999, p. 15) found, in their research with a group of highly successful academics, that the women in the study had internalised society's definitions of the 'good girl' as someone who was 'compliant and deferential' and the 'bad girl' as someone who was 'confident and assertive'. In order to become independent, rational scholars, they experienced an ongoing sense of ambivalence and 'hideous self-doubt' that continued to impact on their supervisory and professional practices.

One of the ways in which these liberal tacit assumptions have so successfully remained hidden from view is the belief that both students and supervisors are *disembodied scholars …unlocated in the specific historical experience and social position of a sexed, classed or racially marked body* (Waldby quoted in Bartlett and Mercer, 2001, p. 10). Indeed, as Peseta (2001) powerfully illustrates, it is possible for male, English speaking, able bodied, local, full-time students to perceive themselves as disembodied because they do not challenge implicit notions about which 'bodies' can legitimately be PhD students. As a female, Samoan, part-time student, her body was marked by others as different and therefore visible. Having had a pregnant body as a PhD student, I can also attest to the fact that this made me bodily constituted and visible.

Apart from issues of gender, class and race and how they impact on postgraduate supervision, the notion of the scholar as an individualised mind living outside or even inspire of an irrational, marked body, has created very little space to explore the role of emotion and desire or pleasure in research education. The most prominent motif of PhD study that enters this dangerous, 'dirty' territory (Grant, 2001) is one of trauma and anguish (Frow, 1988; Lee & Williams, 1999; Styles & Radloff, 2000; Parsons, 2001). Rather than sanitising these intense, negative emotions from research on supervision, it is important to explore how they impact on students' completion rates and the role a supervisor can play in understanding these emotions and helping students deal with them. The intense feelings of joy and pleasure that are inherent in doing a PhD have also been expunged from research into postgraduate supervision until recently. Indeed, any indications of joy and pleasure in PhD study have been frowned upon and perceived as not the real experience (Bartlett & Mercer, 2001). The notable exceptions to this are studies by McWilliam and Palmer (1995), Bartlett and Mercer (2001), and Styles and Radloff (2000). Rather than being ignored or located at the periphery, these challenges to liberal discourses about postgraduate supervision will form a central part of my study into detecting and dealing with warning signs that students are experiencing difficulties in their supervisory arrangements.

RESEARCH CLIMATE AND INSTITUTIONAL SUPPORT

The final category suggested by Latona and Browne (2001) centred on the research climate and institutional support available to postgraduate students. In this section, I will mainly focus on access to a supportive research culture rather than on infrastructure and financial support. In a very useful analysis of the postgraduate research experience in the USA, Lovitts (2001) divided the types of integration research students needed to experience if they were to complete their studies in a timely way into academic and social integration. She argued that the student needed to become part of the collective community of the school or department and become familiar with its disciplinary discourses. In order to do this, students not only needed to engage in intellectual and professional tasks with other students and academics but also to join in formal and informal social activities that generated a feeling of belonging.

As many authors have suggested, however, students' access to research cultures are very often not equal. A number of studies have demonstrated that research cultures can be 'chilly climates' for women and other students from non-dominant groups (Lovitts, 2001; Seagram et al. 1998, Deem & Brehony, 2000). Seagram et al. (1998) Canadian study of completion rates at York University supported the notion that women often find it more difficult to access their department's research culture, experiencing less collaboration with their supervisors in the preparation of research papers; less supervisor interest in their research; longer delays in obtaining feedback from their supervisory committees; and more conflict amongst their supervisory committee members. Lovitts' (2001) US study also demonstrated that 22% of women and 3% of men indicated that they had experienced gender discrimination from academic staff, supervisors and other students. In particular, married male students were provided with more support and understanding if they had difficulties in their home lives, while these difficulties were perceived as evidence of having divided loyalties in women students. Female students also reported that other students often did not listen to what they said and then proceeded to paraphrase their words. Of even greater concern, were Lovitts' (2001) findings that women were five times as likely as men to be sexually harassed and 12 women and 1 man had been pressured for sexual favours, usually by academics in their department or from other faculties. Prestage and Lichtenberg (1996) found that women were less likely to be invited to enrol in Honours programs even if they were qualified to do so.

Lovitts' (2001) study also identified experiences of ethnic or racial discrimination, mostly endured by African American and Asian students, by supervisors, other academics and fellow students. As one African American woman indicated, she *felt a sense of resentment and hostility*, with students and academics assuming that she could only possibly be in the graduate program for Affirmative Action rather than academic reasons (Lovitts, 2001, p. 103). So too, Deem and Brehony's (2000) study indicated that international students found it difficult to access research cultures, including peer support, for a range of reasons such as the prejudice of supervisors and other academics, exclusion from informal academic networks, different expectations about doctoral study, poor living

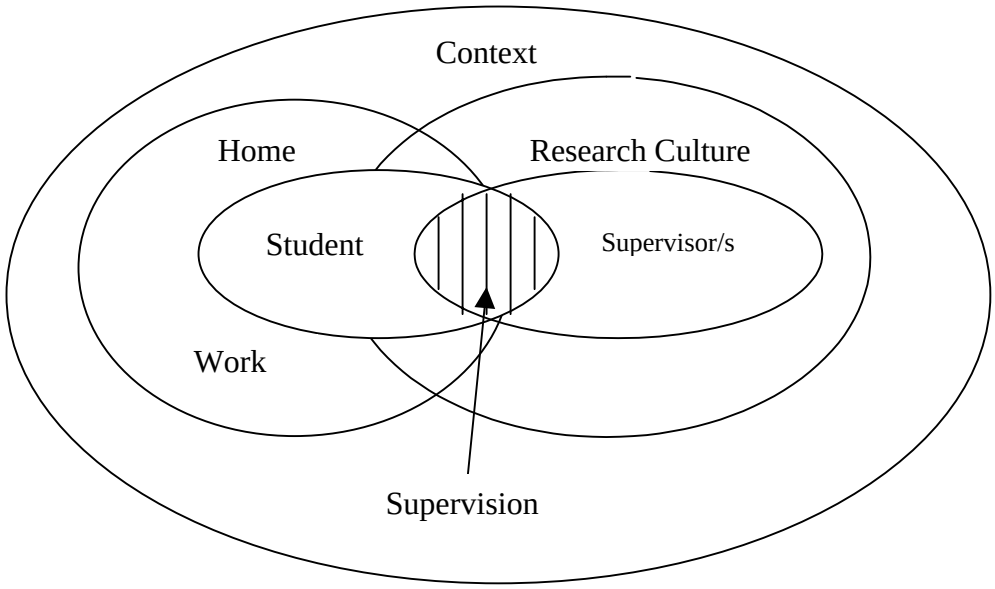
and office accommodation, language barriers, and cultural differences. All of these factors will need to be investigated in my exploration of how supervisors can detect and deal with early warning signs that students are experiencing difficulties in becoming integrated into their discipline's research culture.

It should be pointed out, however, that despite these findings, timely completion rates for women and others from non-dominant groups were the same as other students, supporting Wright and Cochrane's (2000) theory that those who struggle against discrimination and other barriers are often more motivated and committed than those who face few, if any, obstacles. Yet research higher degree study need not be a baptism of fire or a brutal initiation rite (Lee & Williams, 1999). It can and should be a challenging but positive, pleasurable experience, as Bartlett and Mercer (2001) demonstrate. By improving students' equitable access to research cultures, a great deal can be done to enhance research students' academic and social integration (Lovitts, 2001) and so improve timely completion rates. Finding out how expert supervisors ensure that their students are able to access disciplinary research cultures will also form an important aspect of my planned study.

DETECTING AND DEALING WITH WARNING SIGNS

While approaches to timely completion rates that focus on improving the effectiveness and quality of supervision and enhancing all students' opportunity to access research cultures are helpful, my study will take a different but complementary approach to timely completions by exploring how expert supervisors detect and deal with early warning signs that students are experiencing difficulties. This study will, therefore, adopt a preventative and interventionist approach to the issue by examining the particular cues highly effective supervisors try to stay alert for in order to assure themselves that their research students are progressing with their research. These cues may relate to any one of a number of the dimensions of research education. While several other studies have developed diagrams to visually represent the supervisory relationship (Kandlebinder, 2001), very few have gone beyond this to include the impact of the research culture, the broader university and higher education context or of the students' home and work lives on their research education experiences. Holdaway (1996) was one of the first to diagrammatically represent the aspects of research education that went beyond producing a thesis or what he called 'primary focus'. In this diagram, he also included a range of 'secondary foci' such as acquiring skills, knowledge and a reputation; establishing contacts; and publishing. Building on this, my study will develop a comprehensive model of research education that incorporates these broader dimensions. Figure 1 features a preliminary model that will be refined during the course of this study. All of the participants in the study will be asked to reflect on each of the dimensions of research education and to indicate the most significant sites of warning signs from their perspectives.

Figure 1 Research Education



DATA SOURCES AND METHODOLOGY FOR THE STUDY

This study will draw upon four major data sources: the literature on postgraduate research education, and the insights of expert supervisors, research students, and support staff. An extensive literature review will be conducted to explore the current insights of other studies into the nature of early warning signs that students are experiencing difficulties. This paper represents the first phases of this synthesis of the literature and situates my study in the literature. A series of case study interviews will then be conducted with the award and certificate winners of the University of Queensland's 2000 and 2001 Supervision Awards. These supervisors have been selected because of the verification of their excellent supervisory practice through the award process. They also represent a useful cross-section of disciplines, including Health, Engineering, Social Sciences, Humanities, Agricultural Science, and Science, and an equal representation of genders. A semi-structured interview process will take place and will involve:

- An initial interview – in which supervisors discuss their experiences of research students' candidature chronologically, with the aim of identifying the key warning signs and how they can be detected in different students.
- Follow-up interviews – in which supervisors discuss certain situations or scenarios, with the aim of identifying what issues are embedded in the warning signs and what strategies they have used to help students through these difficulties.

A focus group will then be conducted with these expert supervisors, which will work towards a synthesis of warning signs across the disciplines represented. Initial in-depth interviews with the Student Union's Postgraduate Organiser and personnel from Student Support Services and The Graduate School about key warning signs from a students' perspective will be followed up with focus groups of students from a range of disciplines on factors that cause them difficulty and whether their supervisors appear to notice when they are experiencing difficulties. Data from these focus groups will be augmented by additional interviews with individual students. All of the participants will also be asked to comment on the preliminary model of research education and indicate the varying significance of the different dimensions on the model. They will be asked to nominate the most important sites of warning signs on the model. By exploring the issue from the perspectives of supervisors, students and those who provide students' with professional support, 'theory triangulation' in the sense used by Rodger and Brown (2000, p. 168) will be achieved. Taking this approach also responds to the theme of this conference: integrating perspectives. The transcripts from all of the interviews and focus groups will be independently coded and analysed by another researcher as well as myself in order to verify my analysis through investigator triangulation. The supervisors participating in the study will also be asked to comment on this joint analysis.

POTENTIAL FOR FUTURE STUDIES

This initial investigation of how expert supervisors detect and deal with warning signs that research students are experiencing difficulties will serve as a pilot study for further explorations of this preventative, interventionist approach to ensuring timely completion rates. Specifically, further studies will be conducted at the University of Queensland into:

- how novice supervisors can learn about and implement strategies used by expert supervisors;
- how experienced but not expert supervisors can learn about and implement strategies used by expert supervisors;
- remote supervision and the particular challenges this supervisory practice brings to detecting and dealing with warning signs of student difficulty;
- how formative and summative evaluation tools used in research supervision can be designed to measure the relative importance of dimensions involved in research education.

In addition, a number of Deans and Directors of Graduate Studies have indicated their universities' interest in conducting a broader, Australian-wide study into how supervisors detect and deal with early warning signs that research students are experiencing difficulties.

CONCLUSION

This paper synthesises the burgeoning literature on research education in order to provide a rationale for my proposed study on how expert supervisors detect and deal with warning signs that their research students are experiencing difficulty. This planned study represents a new approach to ensuring timely completion rates because it will focus on using preventative action. This will avoid the inherent problems associated with succumbing to the selective admissions myth and raising the barrier at the selection stage or attempting a risk analysis of students who share common characteristics with those cohorts that appear to take longer to submit their theses or who are statistically less likely to complete. It will also avoid taking a reactive approach that emphasises only the latter stages of candidature. Instead, it will focus on the other two elements of Latona and Browne's framework of reasons why students complete: quality supervision and access to research cultures. This study will also seek to develop a holistic model of research education that incorporates all of the dimensions of research education not only the supervisory relationship. The study will, therefore, integrate not only the perspectives of supervisors, students and support staff, but also various theoretical perspectives on research education.

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A UNIVERSITY-WIDE WORKLOAD POLICY FOR POSTGRADUATE SUPERVISORS

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ABSTRACT

'Postgraduate supervision' is perceived by staff as different academic work from 'teaching' a class with attendant administrative and assessment duties, or carrying out one's own 'research', although there may be perceived areas of overlap. This paper describes the process and results of a successful year-long project to develop policy for arriving at fair workloads for postgraduate supervisors at Auckland University of Technology (AUT). We investigated postgraduate workload policies and practices at a range of NZ and Australian universities, most of which leave attempts to arrive at an equitable formula for workload to the department/school level. We documented existing practices in different AUT faculties, as well as experiences and research elsewhere, before constructing the AUT postgraduate supervisor guidelines as an appendix to the AUT workload policy. The guidelines comprise an introduction that defines supervision, a list of factors that are relevant to determining the workload for an individual, and equivalency statements. Issues, which arose as we consulted with faculty, are outlined. . The role of the AUT Contract Monitoring Committee (a group of equal numbers of Union and management members with their own perceptions of fair academic workloads), is briefly discussed.

INTRODUCTION

During 2000 I led a staff group that utilised an action research approach to develop a postgraduate supervision workload policy. The group consisted of one representative from each faculty at AUT (Arts, Health, Science and Engineering, and Business). These representatives included leaders of Masters programmes. The policy was intended to apply to supervision of both Masters and Doctoral theses. AUT already had a well-developed code of practice for supervision and regulations such as compulsory staff development prior to supervision of Masters theses (AUT Postgraduate Handbook, 2000 and AUT Doctoral Studies Handbook, 2000). Several academic workload audits had taken place in AUT departments or schools over the previous few years. At the time of this policy development and approval, all AUT students who were enrolled in a thesis and all doctoral students had two supervisors. Some second supervisors were practice experts or academics from outside AUT, although the primary supervisor was always an AUT staff member. All faculties had Masters students and all Masters programmes involved research supervision of theses or dissertations. Not all faculties had doctoral students. All faculties had experienced difficulties at arriving at a fair workload for postgraduate supervisors.

At AUT, the philosophy behind the workload policy is that an agreed, safe, reasonable and equitable workload will be arrived at for each individual staff member. The maximum TTH (timetabled teaching hours) set in the academic workload policy is for those who are lecturing, with all the attendant duties, but who are not expected to undertake research or postgraduate supervision. Once a lecturer's workload moves away from teaching, there is a need for agreement between them and their manager as to the equivalence of their additional roles. If an AUT lecturer is not satisfied with what has been offered in terms of a TTH reduction by their manager, then he or she is able to disagree and the situation can be reviewed and a workload determined by the AUT Contract Monitoring Committee (CMC). The CMC consists of equal numbers of ASTE (Association of Staff in Tertiary Education)

representatives and AUT management representatives, and me (a neutral party appointed by both groups). The CMC has functions that are outlined in the Academic Staff Members' Collective Employment Contract (1996). These include developing and/or monitoring the implementation of existing policies relating to progression within lecturer salary grades, starting salaries, and exceptional workload provisions. The need for agreement is potentially a very powerful tool in arriving at an equitable and safe workload. The principle of negotiated agreement is fundamental at AUT.

It is hoped that this paper will be useful to those with responsibility for developing and monitoring fair workload policies, for Directors of Postgraduate Education, Heads of Department or Schools and for postgraduate supervisors.

METHOD

The group's objectives initially were to:

- Research and report on arrangements already in existence inside AUT and in other Universities
- Consider whether postgraduate supervision can be regarded as a simple equivalency with other timetabled teaching hours in all situations (eg supervision at a distance, group and single student supervision).
- If not, develop principles to assist Heads of Schools/Departments, programme leaders, supervisors to negotiate a fair workload.

Members of the group collected information about:

1. current practice at other Australasian Universities;
2. current practice and issues with supervision workload in their own faculty.

Data collection for (1) involved web searches and requests sent out over several academic E-Mail lists. Responses were obtained from a range of universities in New Zealand (The University of Auckland, Canterbury University, Victoria University) and Australia (Monash, Flinders, RMIT, University of New England, Charles Sturt, University of Western Australia, University of Newcastle, Australian National University).

During 2000, the group drafted guidelines and consulted widely within AUT. The draft guidelines were then presented to the CMC, which consulted with its stakeholder groups and made some modifications to the draft postgraduate supervision policy. The final draft became accepted as an appendix to recently approved AUT workload policy mid- 2001. Both policies are attached as appendices to this paper. The postgraduate supervision policy will be reviewed after one year of operation. So controversial is it, that it is carefully labelled 'guidelines' rather than 'policy'.

RESULTS

PRACTICES IN AUSTRALASIAN UNIVERSITIES

Some Universities had policy or procedures about postgraduate supervision workload, which apply at the level of the department or school but not at the level of the whole organisation. Many have no formal policy at all.

A typical situation was summed up by one correspondent, commenting on his Australian University: *I … found policy on postgraduate supervision which sets out the responsibilities of supervisors, but says nothing about their workload. I asked some colleagues, one of whom used to be Assistant Vice-Chancellor, another a professor in…advanced studies and the third was for years a member of the committee awarding postgraduate scholarships - so, three knowledgeable people. They agreed that there is no formal policy, but there has been a general understanding that a*

supervisor should have no more than about five full-time postgraduate students at one time; they also agreed that there were a number of individuals and at least one department that commonly exceeded this in an attempt to get their student numbers up. In terms of contact hours I think that the expectation would be that the supervisor met the student for about an hour every week or two and that the supervisor did some work preparing for or following up such meetings. All that relates to social science/humanities departments; science supervisors probably have their postgraduate students working with them in labs and therefore have much closer contact.

Three different methods of quantifying supervision workloads at the level of the department or school were found: setting an upper limit on the number of students supervised by any one staff member; allocating credit (hours or points) for supervision which sits within an individual's overall workload credit-scheme; and equating a certain amount of postgraduate supervision to a course/programme of undergraduate teaching. Some examples follow.

QUANTIFYING STUDENT NUMBERS

A few universities attempted to quantify workloads for supervisors across the University, usually by using the first method, that of limiting student numbers. For example, at the Royal Melbourne Institute of Technology: *An RMIT member of staff shall not normally be senior supervisor to more than six full-time candidates or nine candidates in total. The load of the senior supervisor and his/her involvement with the candidate and other research students, if in excess of the above, will be examined by the HOD with respect to workload and progress of existing students and must be referred to HDC prior to approval of candidature. If the senior supervisor is personally enrolled as a higher degree candidate, the number of candidates supervised will normally be half of that specified above". Note that in this system, if the supervisor* ***is*** *the HOD, another appropriate senior manager approves the HOD's supervision workload.*

In another example, at Monash University: *A supervisor is not normally put in charge of more than five full-time equivalent doctoral students (Where it is proposed that a supervisor undertake supervision in excess of this number, the department and faculty must satisfy the PhD and scholarships committee that the additional load will still allow the supervisor to discharge satisfactorily the responsibilities set out in …)*

In each of these cases a committee (postgraduate or doctoral) acted as monitor if 'normal' supervision workloads were exceeded.

CREDIT FORMULAE FOR WORKLOADS

The University of Auckland was typical of universities where each department had adopted its own system of calculating or allowing for workloads based on a 'points' system, a system based on 'assigned hours' of workload, 'contact hours' or even on the proportion of staff budgets to be allocated to various programmes including postgraduate ones. Usually at universities like this one there is a policy statement somewhere about the 'normal ' hours of work for an academic, but these vary from University to University and from department to department within one University. The points system becomes very elaborate with weighting factors and limits featuring on spreadsheets. Elaborate reasoning lay behind some departmental schemes. For example: *The scheme started as '1 point per hour' with a certain number of hours of preparation and marking associated with each hour of lecturing. A 23-lecture course was worth 115 points and 50 hours in the teaching laboratory were worth 50 points. The system today has evolved considerably. The points bear only a rough relationship to hours, since one of the most valuable aspects is the use of 'market forces'. For example if there is a course which is unpopular for whatever reason then its popularity will rise along with the points gained by giving it … One aspect that has generated considerable discussion is the idea of credit for research. This was ultimately introduced indirectly and supervisors are given 50 points for each graduate student they supervise up to 100 points [about 15% of a full load]* (Harvey & Macpherson, 1998, 25).

From another department at the same University: *For each PhD and MA student supervision, 72 ergs". Here a typical double semester MA paper is 48 ergs of contact, plus 48 x 4 of teaching preparation, plus 2 ergs x each script of exam. In this scheme "an erg is an assigned hour of workload.* (Harvey & Macpherson, 1998, 1-2).

EQUIVALENCE TO A COURSE, PAPER OR MODULE (A SMALL PART OF A TAUGHT PROGRAMME)

Some departments left the whole aspect of supervision workload as vague as *the normal teaching load of an academic member of staff should include a modest amount of graduate supervision* even though they might have attempted to weight other types of academic work. From one department at the University of Auckland came this statement, *the normal teaching/lecturing load of an academic member of staff is three papers per academic year - two at undergraduate level, one at graduate level. A paper normally consists of the equivalent of 24 lectures* (Harvey & Macpherson, 1998, 23). From another department at the same University came the statement, *six supervisions is the equivalent of a 36 hour paper* (Harvey & Macpherson, 1998, 30).

PRACTICES AT AUT

By the time that the research group formed, AUT faculties had separately developed their own practices.

Health and Arts Faculties were allocating a certain number of hours per week, per fortnight or per year for each student thesis or dissertation. Based on their own research into practices at other universities, Health allocated 1 hour per week for all supervisors across the faculty. Different schools in the Arts Faculty were developing different practices. Science and Engineering were using a maximum of 2 hrs/week, adjusted for the stage of the student and whether or not the supervisor was the principal or second supervisor, and were adjusting their complex weighted formulae, which gave points to different academic tasks, so that supervision was included. The Business Faculty equated supervising a certain number of students to teaching one module on an undergraduate degree or diploma. AUT uses a modular system for developing and delivering academic programmes and undergraduate modules in Business are generally 15 credits, with 120 credits representing a whole year of work for a student. In the Business Faculty staff who did not supervise generally taught 3-4 modules a year, but this partly depended on class size and administration roles. 6 supervised students were equivalent to teaching one module.

PERCEIVED ISSUES AT AUT

Problems/issues which were perceived by AUT staff in 2000 included:

- Very heavy workloads for a small number of academic staff, the experienced supervisors or leaders of Masters programmes.
- High administrative workloads for the same staff who had high supervision loads, especially programme leaders.
- Staff teaching across several programmes (diploma, undergraduate and masters level) could not cope with more than one or two postgraduate students to supervise.
- Not enough funds spent on staffing from postgraduate students considering the government funds they brought into the university (postgraduate students are funded at a higher rate than other students).
- Increasing numbers of postgraduate students likely to be supervised at a distance
- Increasing numbers of students with English as a second language.
- Part-time students requesting or requiring just as much access to supervisors as fulltime students.
- Students requiring supervision after their enrolment period had finished but before their thesis was completed.
- It cannot be assumed that primary supervisors need more supervision time than secondary ones. Each triad (student and two supervisors) has a negotiated agreement as to the roles and process within supervision so that the time needed by the different supervisors varied greatly.
- Students at different stages of their thesis work required different kinds and amounts of assistance across a year, and across the several years of thesis study, and this varied from student to student. Some students were consistently more self-directed than others.

- Postgraduate students for whom English is not their first language required different or greater support during supervision than students who are excellent speakers and writers of English. Some staff pointed out that NZ born students and NZ residents might require as much support with academic writing at the postgraduate level as did international students. There was little coordination of support from the following sources; individual supervisors, Te Tari Awhina (central student learning support unit), programmes based in faculties eg language nests or thesis writing workshops. Where AUT-wide or faculty-wide support was not in place, extra time was seen as essential for these supervisors.
- Specialised editing of written theses was not seen as a supervisor role by some staff. There was debate about when feedback and editing became *not the student's original work*.
- AUT has provision for theses to be written in Maori. That gave rise to a whole new dimension of supervisor support for some students.

These issues are reflected in the principles which were generated over time by the group and which later became *Factors relevant to determining supervision workload* in the approved guidelines (Appendix 1) .

DISCUSSION

The group reached consensus on several matters, which are reflected in, but not all made explicit in policy. For example:

1. An individual supervisor needs to be available for at least 40 – 41 weeks of each year during the supervision process.
2. The same time allowance for supervision is needed whether or not the student is researching on campus or at a distance
3. While the student's demands on the supervisor and the kind of assistance required may vary during the period of supervision, there may be no change in the time allowance that is needed by the supervisor, especially as more than one student is usually supervised by an individual staff member and the time demands will even out. However there should be some contingency time available above the 'allocation' for any time when student demands peak together. As one of the group said – *There are crunch times and cruise phases. One of the crunch times is when the supervisor is reading and giving feedback on the final product*.
4. Programme leaders who are also supervisors should have workloads that are fair and workable
5. Nominated individual research time may overlap inextricably with supervision time e.g. in design studios and laboratories, wherever the staff member does research with students working alongside. Both workload provisions should be protected.
6. All postgraduate supervisors should be engaged in research and if they are enrolled in higher degree, their workloads should be reduced.
7. Supervisors should be encouraged to cluster their supervised research students (undergraduates through to doctoral students) together in peer support groups so that the supervisor is not the sole source of support.
8. Faculty support/ mentoring/ staff development should be provided for supervisors who want or need it e.g. time management advice – *follow-up not swallow-up* so that students develop autonomy and independent learning habits.

Philip (1993) finds that workload policies use three allocative principles: identification of specialised 'subject-orientated' roles which attract specific workload arrangements, allocation of 'face to face' or 'contact' hours, and allocation of a number of students to a teacher. He also recognises that organisations have a conception of the 'normal working load' for academic staff.

AUT workload policy uses TTH (timetabled teaching hours) as a basic unit of work and equates other roles and duties to these units. There is therefore a traditional reliance at AUT on teaching 'contact hours' as a measure of workload. Each lecturer is allocated to a workload band, which is largely dependent on the relative amount of teaching and research that each is expected to do. For lecturers who are not expected to pursue higher qualifications, engage in research, publish or present at conferences, the workload is 601-825 TTHs per annum. These lecturers are expected to maintain currency in their discipline and teach small classes at levels below degrees, usually in practical workshops where assessment is done in class. In workload band 0 – 240, lecturers would be expected to benefit from at least one day a week free of classes to pursue academic activities associated with research. The 'normal working load' for an AUT staff member therefore depends on the workload band into which they fit and equivalencies of supervision must be deducted from this.

None of the faculties wished to abandon their own approach to calculating fair equivalencies for supervision. Members of the group were initially surprised that there were other methods of calculating workloads at the department/school level, other than the approach they were used to, and attempts to convert others to the 'norm' for their faculty took place. Eventually the group and the CMC agreed to have more than one kind of equivalency across AUT.

The final agreed equivalencies in AUT supervision workload policy are 0.5-1.5 hours/ week for supervising one fulltime student thesis over the period of enrolment, with 5-6 supervised students equating to the workload of teaching one AUT module. Also a staff member is not normally principal supervisor to more than five doctoral students or nine postgraduate students in total. So the last two of Philips' (1993) allocative practices are used. However AUT leaders of Masters programme, who also become the principal supervisors for many thesis students, continue to have their battles to win over allocation for their special role of programme leader (Philips' first allocative practice). There is no AUT wide calculation of equivalency for that role. Soliman (1999) identified two models for calculating academic workload: the time based model and the earnings based model. The use of a 0.5-1.5 hrs/week equivalence follows the first model, and the number of students/ module equivalences are earnings based, since most of the funding for AUT work comes from equivalent full time-students (EFTS) enrolled on modules within programmes.

The prime focus for any supervision workload policy is the improvement of the likelihood of the student receiving fair treatment and quality education in their pathway to becoming a researcher. *The workload of the supervisor is to allow sufficient time to give proper supervision to the candidate* (Monash University policy). For the AUT CMC, which monitors staff working conditions, a second focus is fair treatment for the staff member in their career pathway, whether that emphasises teaching or research or the supervision of research students.

ACKNOWLEDEMENTS

Jenny Bygrave, Dr Alan Cocker, Dr Marion Jones, Frances Joseph, and Dr John Robertson researched and developed this postgraduate supervisor workload policy. Phil Ker was instrumental in renegotiating the AUT academic workload policy and in shepherding the postgraduate workload appendix through to acceptance.

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APPENDIX 1

WORKLOAD GUIDELINES FOR POSTGRADUATE SUPERVISION

1.0 INTRODUCTION

These guidelines relate to academic staff who supervise postgraduate students for research activities and the consequent products of research (theses and dissertations and their equivalents).

Supervision of a postgraduate thesis is a learning/ teaching activity of great importance to the research/ teaching nexus at AUT. Supervision workload may include regular meetings/ email/ phone contact with the student, research methodology training, provision of guidance on research resources and AUT systems (eg enrolment, research proposals, ethics approval, reposting progress, assessment), reading student work, giving formative feedback, formal reporting about the student and sometimes summative assessments, guiding students through the research process, and organising peer support.

All postgraduate supervisors should be qualified for their role (refer to policy in the Postgraduate Handbook); and it is **essential** that those undertaking supervision are themselves engaged in research.

2.0 FACTORS RELEVANT TO DETERMINING SUPERVISION WORKLOAD

The following factors should be taken into account in determining supervision workload:

- The supervisor's teaching responsibilities.
- The supervisor's own programme of research.
- The supervisor's administrative or leadership responsibilities.
- The supervisor's own experience in supervision.
- Any higher study or other professional development which the supervisor is undertaking.
- Any new research students, as well as ongoing ones, allocated to the supervisor.
- The number of NESB students being supervised.
- NESB research students require different forms of supervision and support from faculty than students who are excellent speakers and writers of English. For such students, extra time should be allocated in the supervisor's workload, and there should be University-wide or faculty-level or programme- level support provided, eg language nest, thesis writing sessions.
- The nature and extent of supervision, and whether the supervisor is a principal or second supervisor. (Specific roles and duties of each staff member in liaising with the student and the other supervisor must be taken into account. It cannot be assumed that principal supervisors always need more time allocated to them than second supervisors).
- Whether the supervised students are full-time or part-time.
- The academic level of the supervised students and whether they are in the first or subsequent years of enrolment in a research thesis, or dissertation.
- The extent or not of overlap between supervision and the staff member's own research (eg in laboratories and design studios, whenever the staff member researches with students working alongside).
- Supervision of research students at a distance may require similar workload provisions to supervision on campus.

- Safety Issues:
  - Where student research activities which could be unsafe (to the student or to their research subjects) are being supervised, the workload of the supervisor should be adjusted to allow the safety of all parties to be carefully monitored and protected.
  - Active, eminent researchers should be encouraged to spend at least half of their workload on their own research and postgraduate supervision combined.

3.0 TTH EQUIVALENCY

- The time allocation for an individual supervisor, for the supervision of one full-time student, is 0.5 –1.5 hours/ week over the supervision period.
- In disciplines where supervising a cluster of research students is equated with teaching modules to calculate a fair workload across a department or school, 5-6 supervised students equate to the workload of teaching one AUT module.

NB Not withstanding the above, a staff member is not normally principal supervisor to more than five doctoral students or nine postgraduate students in total.

BARRIERS TO COMPLETION: A STUDY OF SCHOLARSHIP HOLDERS

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This paper reports the findings from an analysis of the progress of the University's past Australian doctoral scholarship holders. These people include our most able students but nearly all of them request an extension beyond the normal three-year term of the scholarship. Extensions are given only for research-related problems outside the student's control. The analysis examines the reasons given for extension requests, identifies problems experienced by students over which the supervisor or school may have some control, and suggests steps that might be taken to ameliorate these problems. These problems experienced by scholarship holders also create barriers to completion for other students in research degree courses. Addressing these problems is an essential component of ensuring quality in research training, and should reduce completion times for vulnerable students and improve the quality of their research. Given the funding implications of timely course completions under the Australian Government's Research Training Scheme, the findings of this research have significance for all graduate research supervisors looking for ways to facilitate the completion of their students.

A STATISTICAL ANALYSIS OF THE COMPLETIONS OF RESEARCH DEGREE SCHOLARSHIP HOLDERS

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With Statistical analysis by
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This paper will report on a statistical analysis of Higher Degree by Research Students awarded Australian Postgraduate Awards or Monash Graduate Scholarships in 1993 and 1994. The cohort of Monash University students studied involved 200 from the 1993 scholarship round and 245 from the 1994 round. The aim of the analysis was to determine what factors influence the likelihood of a student successfully completing his/her degree. Classification tree-based modelling and stepwise logistic regression modelling were used to examine the relationship between completion and a set of ten potential explanatory variables. The dependent variable in each case is the probability of successful completion. The most important explanatory variable was found to be discipline with age being the next most important. Other significant variables were citizenship and prior publications.

NO LONGER ENROLLED BUT NOT COMPLETED – A THESIS IN LIMBO: WOULD EARLY INTERVENTION HELP?

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Completion of research higher degrees is a key imperative for Universities, especially following the introduction of the Research Training Scheme (RTS). At the University of Melbourne, if a PhD student is unable to submit a thesis by the due date and, has exhausted allowable candidature time (4 years EFT), they may apply to lapse for up to two years. A search of the database revealed a substantive number of students in this category. What could be done to encourage these students to complete their degree and are there key intervention points during enrolled candidature that may have assisted completion by the due date? A detailed questionnaire was sent around 600 former students. Whilst the questionnaire sought reasons for discontinuance (already well known from the literature) the main thrust was (i) to ask about critical events or timing points which led to the decision to withdraw and (ii) possible interventions, which may have assisted the student to remain enrolled and complete. Results support the importance of induction programs for commencing students to engage them with the 'reality' of a PhD and suggest that many students have doubts about their studies before 12 months of elapsed candidature. The broader implications of the study will be discussed.

QUALITY ASSURANCE IN THE ANNUAL PROGRESS REPORTS OF HIGHER DEGREE BY RESEARCH CANDIDATES AND THEIR SUPERVISORS

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The funding model of the Federal Government's White Paper and the recently announced requirements of the Australian Universities Quality Audit (AUQA) of higher education institutions commencing in 2002 place providers of graduate research education under greater pressure in accounting for their policies, procedures and practices, particularly in terms of output (completion rates) and quality. Institutions rely on various instruments to assess the quality of Higher Degree by Research (HDR) candidature experience and the quality of the research produced by graduate researchers. These instruments include supervision surveys, exit surveys, external assessment of dissertations, and, of course, completion rates.

A further instrument is already in place, but may be under utilised by managers of HDR research. This is the Annual Progress Report (APR) prepared by HDR candidates and their supervisors, which for many institutions is the primary means for monitoring the progress of HDR research. As mechanisms for assessing satisfactory progress and impediments to progress are quality issues, it is timely to examine the APR and how well it serves both candidates and the institutions in which they undertake research. Given APRs require preparation that can incur considerable anxiety for candidates and their supervisors; require significant academic and general staff time to handle and process either annually or bi-annually, and require at least two (and at many institutions three) parties for successful completion, we need assurance over the efficacy and value of APRs as a reliable management tool.

In this paper, we present preliminary findings from action research into APRs undertaken in the Faculty of Arts at Monash University and on the results of interventions in the progress report rounds of 2000 and 20001. Examining the APRs of candidates who withdrew from candidature without completing their theses and those who successfully completed their theses, we asked how effectively:

- does the information in APRs allow a prediction of completions or failure to complete?
- do APRs report on progress and what information do they provide?
- do APRs measure the quality of the candidate's experience, the research training and supervision provided?

Our findings reveal that (in the Faculty of Arts at Monash, at least) further effort is required in improving the quality of the reporting process of HDR progress. We found, among other things, that many candidates and their supervisors appeared to lack either the conceptual framework or the vocabulary to report on the research process, which made it extremely difficult to asses whether 'progress' was being made or not. Many reports were vague and full of obfuscation. Very few APRs reported adequately on progress in research and the APRs of unsuccessful candidates appear to 'predict' indirectly the candidate's ultimate withdrawal.

What can be done to improve the quality of the APR process to ensure more accurate reporting of progress and impediments to progress? In 2000 the Faculty of Arts at Monash trailed a new approach to the APR process that was more interventionist than previous years and involved some education of both candidates and supervisors as to what was expected of them in the completion of APRs. This resulted in a dramatic increase in requests for interim reports and other actions such as change of supervision. We present data on the 2000 and 2001 APR rounds for Arts candidates and make a number of recommendations to how the APR process may be further improved to ensure quality reporting as a reliable indicator of progress in research.

THE 'RESEARCH PROPOSAL' IN THE NEW RTS: WHAT ARE THE GATEKEEPERS LOOKING FOR?

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The new Research Training Scheme (RTS) in Australian universities with its emphasis on timely completions and appropriate student skills levels, forces a reconsideration of progress monitoring and gatekeeping. In many institutions the 'Research Proposal' is the first formal task required of a research student and this document may have one or many functions: it may be a description of research work in progress, a planning document, the basis for a grant application, a gatekeeping hurdle for the continuation of an academic degree and/or, most significantly, a tool for the assessment of a novice researcher in terms of intelligence, discipline knowledge, commitment, even thoroughness. In this context, 'training' students how to write such a proposal raises deeper considerations than those relating only to developing their functional skills.

In this paper I will report on a study of the role of a Research Proposal in a traditional Australian research university. In particular I will examine postgraduate research supervisors' requirements of the proposal and show how their expectations raise some highly significant issues for gatekeeping in the current research education context.

CONTESTING R&D: COMMONWEALTH CONTROL BY DEFINITION

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Recent changes affecting R&D in industry, tax, education and science policy have converged on maximising tangible economic returns from Commonwealth support for R&D (e.g. *Knowledge and Innovation*, *Backing Australia's Ability*, national research priorities for the ARC).

In this policy environment, the Commonwealth's assumptions and definitions of the scope and activities of 'legitimate' R&D is of great significance in determining what and who is supported or not.

In Backing Australia's Ability (2001), the Government proposed widespread changes to the R&D Tax Concession - the Commonwealth's primary support mechanism for business R&D in Australia. While some of the Government's initiatives were broadly welcomed, there was a protracted dispute concerning changes to the definition of R&D.

This paper will examine the dispute over definitional changes and the assumptions about R&D, innovation and industry embedded in the Government's proposal. It will argue that the proposed changes will inhibit innovation by further constraining the types of activities that are taken to be R&D and reflect an increasingly out of date understanding of what is industry.

DOCTORAL EDUCATION IN THE CONTEXT OF THE MANAGEMENT OF KNOWLEDGE AND PUBLIC SECTOR REFORM

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This paper reports a current project on the management of knowledge in public sector organisations. The paper addresses the component of the project which focuses on the management of doctoral education in the corporatised university.

The authors' previous research (Neumann and Guthrie, 2002; Neumann, 2002) highlights policy strategies which favour certain styles of research over others. Further, recent changes to higher education policy have lead to tighter central control which appears to push academics to either a teaching or a research role, with only a small number of quality researchers who will be research student supervisors. Current emphases on costs, concentration, and competition, alongside a demand for quality enhancement impinge strongly on doctoral education.

The paper briefly discusses the most recent public sector and higher education policy changes which affect doctoral education. It then addresses institutional management of doctoral education and its impact on doctoral research. The central argument is the maintenance of diversity against strong counteracting forces of corporatisation and outcomes-based funding. Diversity in doctoral education encompasses: diversity of student, diversity of research approach and type, diversity of discipline and institution. Doctoral education is at a crossroads. There is a need to examine suitable models, bearing in mind the centrality of diversity.

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SECTION TWO

RESEARCH LITERACIES

MENTOR, MANAGER AND MENTOREE: NEW ACADEMIC LITERACIES FOR RESEARCH EDUCATION

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SPEAKER PROFILE: *Introduced by* MS MARGARET CARGILL

I couldn't be more delighted than I am to have the honour of introducing our keynote speaker, Professor Erica McWilliam from the Faculty of Education at Queensland University of Technology.

We searched particularly long and hard to find someone who was really going to be able to carry this perspective strongly and make it clear how the literacies area, and all the issues connected with that, relate to the issues of change and quality that we're all so heavily involved in. In terms of change, even my search on the website of QUT yesterday for Erica's substantive title, wasn't able to catch up with the latest change. And so, where she was the Assistant to the Dean for Postgraduate Matters in the Faculty of Education, she is now formally a Change Management Sponsor, which sounds like we're going to have a wonderful look into this whole range of issues.

Erica's research interests include pedagogical studies, the corporatising of education, research design, and particularly educational writing. She is a member of the Centre for Language Literacy and Diversity at Queensland University of Technology, and a member of the project team for an EIP Project just recently completed, I believe, called *Improving Doctoral Education in Australian Universities—Learning from the Professional Doctorate Programmes*.

The actual practices of postgraduate pedagogy have been, traditionally, somewhat mysterious and intimate phenomena, particularly within the arts, humanities and social sciences. These practices have been described as centering on a relationship between the experienced and the neophyte scholar in which the precocious few are called to emulate the flattering self-image that is generated by a scholar as master (Le Doeuff, 1977, p. 9). Traditionally conducted behind closed doors in spaces remote from either undergraduate teaching or the 'real world' of commerce and industry, the process of academic over-stimulations and scholastic seductions has remained relatively unexamined, apart from concerns expressed about the sexual politics which may underpin such relationships (e.g. Garner 1995). It should not surprise that most higher degree research students say they like and respect their supervisors, and feel helped enormously by them, even where there might have been a startling lack of attention paid by the 'mentor' to issues of quality and on-time completion. In broad terms, it has not been in the interests of academics or their postgraduate charges to show and tell what systems of encouragements or discouragements may have been at work in the daily mentoring of postgraduate research and dissertation writing. This is not to presume transgression, but to understand that such pedagogical work does not readily translate into rational inquiry made public. Put another way, what in medieval times Abelard needed to know and be able to do in order to teach Heloise has never been empirically documented, although in a wistful moment we may be able to reflect on at least some of the literacies involved.

While I acknowledge the usefulness of ubiquitous and perennial debates about the precise nature of literacy (and the importance of its pluralisation), I choose not to contribute to this debate, but take as my starting point the Oxford English Dictionary's definition of 'literacy' as one's *condition in respect to education*. My interest is in the condition of academics in respect to research education. How might this condition be characterised and with what implications for the 'knowledge work' of postgraduate training?

FROM KNOW-HOW TO EXPERTISE

Much has changed since the days of Abelard and Heloise. The research products of postgraduate education are increasingly unlikely to be the product of this sort of private 'mentor/mentoree' relationship. While it will have a place, it will no longer be *the* place. Instead, the mentor is being required to be manager and mentoree as well as continuing to mentor a more diverse population of supervisees. That is to say, the supervisory knowledge of the experienced supervisor of postgraduate students within a particular discipline is no longer co-terminous with professional expertise in research training. The management of the large and diverse student populations who are now engaging in postgraduate education worldwide requires knowledge that is outside the *unique, informal culture* (Ericson and Haggerty, 1997, p. 57) of academics' traditional work. Academic knowledge is not being displaced altogether. Rather it is being made over as 'professional expertise' through a process that Ericson and Haggerty (1997) describe thus: *[P]rofessionals obviously have 'know-how', [but] their 'know-how' does not become expertise until it is plugged into an institutional communication system. It is through such systems that expert knowledge becomes standardized and robust enough to use in routine diagnosis, classification, and treatment decisionsby professionals*. (p.104).

Just as research education as craft knowledge is being reshaped by administrative interventions that work to achieve fair and efficient institutional practice, so too governments are increasingly demanding public accountability for the products of postgraduate research, and this brings with it a system of incentives for producing research outcomes that are more industry-focused. For example, in my home state of Queensland, the Government has established a PhD Research Funding Programme as part of the Queensland Government's Smart State agenda, to provide research funding for PhD students whose research outcomes are available to inform public policy development[1]. To access such funding, a student and her/his supervisor must engage with agendas and knowledges outside the disciplinary boundaries of university departments. A supervisor who neither knows or cares about such developments puts at risk any claim to be a professional expert in research training.

I want to look firstly at those new literacies being demanded by institutional systems for managing risk to achieve quality, before I turn to examine the literacies that are being demanded of the supervisor as an industry-focused mentoree. I do so acknowledging that new systems of accountability within universities are very much related to wider systems for producing, managing and distributing knowledge.

THE ACADEMIC AS RISK MANAGER

The professional management of risk demands knowledge of risk, and knowledge of risk produces new risks for the organization and its personnel. As Ericson and Haggerty (1997) point out, the risk society is a knowledge society *because scientific knowledge and technologies are sources of major risks and the primary basis of security efforts aimed at controlling such risks* (p. 88). In Beck's (1992) terms, *the sources of danger are no longer ignorance but knowledge….Modernity has become the threat and the promise of emancipation of the threat that creates itself* (p. 183). So knowledge about risk is no escape from danger. Indeed such knowledge *is itself dangerous*. It threatens all professionals because it gives them processes for deciding what action to take and at the same time provides the means by which they can be found to have done the wrong thing (Ericson and Haggerty, 1997, p. 89). Thus it is not simply that large populations of non-traditional 'clients' have 'caused' a heightened vigilance in the university sector, just as it is not simply that the decline of the welfare state has 'caused' universities to become more accountable for the shrinking funding that they receive from governments. As necessary professional expertise, risk knowledge itself has within it the seeds of its own proliferation because it is both a means to manage danger and a danger to professionals everywhere.

Academics worldwide would be aware of the fact that universities now have larger and more diverse populations of students and staff than ever before. According to a demographic study of university student populations in business schools in the USA (Coccari and Javalgi, 1995), there has an increased enrolment of older students, and a greater variety of minority enrolments in recent years. Our own study of doctoral programs in Australia (McWillliam, Taylor, Thomson, Green, Maxwell, Wildy and Simons, forthcoming) shows that there is a marked

growth in non-traditional course offerings that seems to parallel the growth of non-traditional student populations at the postgraduate level. There is strong evidence that professional doctorates are proliferating at an unprecedented rate in Australian universities, with an increase of over twenty percent in the numbers of these programs being offered in the last year alone. Moreover, a number of these programs are characterized by multi-disciplinary and even transdisciplinary approaches to knowledge production. (This is a point to which I will return later.)

It would be too simple, however, to assume that larger and more diverse populations are the reason for the move to intensify regulation of postgraduate programs. Larger and more diverse populations do not of themselves explain the high priority being given to the management of risk in the structural readjustments that universities worldwide have been involved in over the last two decades. Rather the 'negative' logic of risk management requires that there be more self-scrutiny, regularity and control within and across an organizational sector such as we have seen, for example, in the post-Kemp White Paper' (Kemp, 1999) era in Australia. The aim is not to 'overcome' the diversity that is increasingly a feature of university student populations. Indeed, quite the reverse is true. Diversity is to be welcomed because it means reaching potential markets that have hitherto remained untapped (Coccari and Javalgi, 1995). So it is not the case that the 'self-scrutinising' audit mechanisms of academic bureaucrats are designed to serve the status quo by seeking to 'normalise' all postgraduate students as white, middle-class, young and male. Risk managers know that deviation from the mean is, in fact, the norm. The work of the risk manager is not to 'normalise' as much as it is to understand how an individual is placed on a continuum of *imprecise abnormality* (Ericson and Haggerty, 1997, p. 101). In an *audit culture* (Strathern, 1997), the potential threat for universities as organizations lies not in diversity of student or staff populations but in systemic arbitrariness - in (inappropriate) organizational imprecision in the context of (appropriate) social imprecision. Put simply, the logic is that systems of management need to be uniform because individuals are not, nor are likely to be. Such logic of procedural equity flies in the face of a more perverse reading of audit cultures as intentionally depersonalizing. This is not to argue that such cultures do not have depersonalizing effects. Rather it is to argue that the logic of the intensive bureaucratic monitoring that is a feature of audit cultures is not simply 'one-size-fits-all' in terms of the individuals who are its 'products'.

The introduction of 'audit' mechanisms, whether as measurements of 'teaching effectiveness', or 'research quality', or 'accountability', has been for some time now a feature of a wide range of public and private institutions (Shore and Wright, 1999). Whether or not the appearance of these mechanisms heralds *a new form of coercive and authoritarian governmentality* (Shore and Wright, 1999, p. 1), the fact remains that universities have been perceived by funding bodies to be paying insufficient attention to issues arising from the management of change, people and risk (Gallagher, 2000).

This finding of the Higher Education Management Review Committee in Australia (Hoare, Stanley, Kirkby and Coaldrake, 1995) has its parallels in the Dearing Report (1997) in the United Kingdom, in that both Committees foreground the failure of universities to develop the sort of management culture necessary to self-regulation in relation to organizational performance. Such a focus is evidenced in Michael Gallagher's (2000) summation of outcomes of discussions between the Australian federal government's Department of Education, Training and Youth Affairs (DETYA) and senior university executives. He states that these discussions pointed to *a number of failures* (p. 38) that he links to the *trial and error dimension* of university management practice to date. What is strongly implied here is that, despite common regulations across the sector, it is the lack of uniformity of practice within universities that is the key culprit in producing failure. *The next phase of development*, Gallagher concludes *…can be expected to be more formalized and professionally risk managed* (p. 38).

Given this intention, the rhetorical shift from research 'supervision' to research 'training' is a highly significant one. It denotes a new set of processes that are to be envisaged and enacted outside academics' rooms, and outside the supervisor-student relationship, and beyond the university campus. Importantly, it points to the challenge of mentoring industry-focused research as a routine undertaking of postgraduate pedagogy. Both supervisors and students are now invited to see themselves in a new and public landscape of multiple personnel, sites and resources. Flushed out of their private world, they are also to feel the glare of greater scrutiny within their hybrid

institutions that are, in turn, experiencing the need to demonstrate greater accountability in terms of funding, rates of completion and market-focused outcomes.

There is little doubt that academics have for some time now been sensing the creep - or indeed the gallop - of audit cultures into their offices and classrooms. This *pervasive emphasis on external audit and quality assessment, mirrored by systems of internal quality assurance and control* has in general been an unwelcome development in the working lives of academic teachers and researchers (Davis, 1999; Delamont, Atkinson and Parry, 1997; Kenway and Bullen, 2000; Shore and Wright, 1999; Smyth, 1995). In broad terms, the tenor of such arguments is that the instruments of accountability that are being used to define and improve quality in higher education impose models of organization that are incompatible with traditional academic work. Such arguments stress the *unbusiness-like nature* of academic endeavour, insisting that regulations for business practice are both *formulaic* and *shallow* as mechanisms for verifying academic labour (Davis, 1999, p. 7).

While there is much that can be justified in this expression of the academic 'condition', there is also a sense of forgotten history here. As Marilyn Strathern (1997) points out, the assumption that the practices of audit culture originate with *the commercial world with its protocols of bookkeeping and calculations of resources* (p. 308) refuses acknowledgement of the fact that commerce 'imported' these practices from education at an earlier time. She describes the 're-importation' of these practices by education as *a beautiful example of cultural replication* in that *values cross from one domain of cultural life to another and then, in altered form, back again* (p. 308). So arguments about the "unbusiness-like nature" of academics' work may well in be danger of overlooking the education-like nature of accountability in their rush to blame an alien outside force for the university's 'ruined' state (Readings, 1996).

A further issue that might be raised in respect to such arguments is that they run the risk of becoming tired reiterations of a David-and-Goliath theme – the higher education sector-versus-the State, the good academic-versus-the university, creative arts-versus bureaucracy. Such binary formulations do not take us closer to understanding precisely how what we as academics do – how we apply our craft knowledge or 'know-how' - has become dangerous to ourselves and others. We may, of course, be able to offer relatively simple explanations for our changed and changing behaviours. For example, we may feel that we know why a doctoral supervisor might decide that s/he will leave the office door open at all times during a student consultation, notwithstanding a decade or more of working respectably behind closed doors. However, we might have more difficulty explaining how it is that an issue like 'soft marking' has become identified as dangerous for universities, beyond a lay explanation that the media gained access to information about a particular incident or claim, and the effect of this has been to send university managers running for cover. Or, alternatively, that the practice of inflating marks is proliferating because of unprecedented pressure on academics both to quantify their teaching excellence by way of on-time completions and to meet the expectations of full-fee paying students-as-customers.

The capacity to critique is an important one, and certainly one of the academic literacies that is worth fighting for in the academy. However, this need not be juxtaposed against the capacities and skills needed to manage research education. The fact is, for better *and* worse, research education has become the subject of routine diagnosis, classification, and treatment decisions within universities as performance-driven organizations. The system of rules, formats and technologies for communicating decisions about research education within and across institutions are a new set of conditions which demand more than disciplinary knowledge from academics. Moreover, they require that more attention be paid to the means by which students are supported in their efforts to produce rigorous research in a timely way.

There are important implications for pedagogical work which hopefully may flow from this cranking up of institutional accountability. The fact that more attention is now being paid to the means by which students are to be supported in their postgraduate studies is one of the more positive outcomes that flow from a more performance-driven research culture. Getting the pedagogy right, as I have indicated elsewhere (McWilliam and Taylor, 2000) is not a simple matter. It involves constant effort to construct and maintain a *conversation-rich, information-rich, structure-rich environment* (Taylor, 1999), one which is increasingly located in work-places outside

universities, and one in which knowledge is understood to be produced both outside as well as inside academia. Particular pedagogical strategies may be high on one indicator but low on others. For example, the Internet can provide a great deal of information, but is low on structure. E-mail lists and chat rooms can be rich in conversation but also poor in terms of structure and information. Face-to-face teaching on a university campus may be rich in both conversation and structure, but poor in terms of access to information—and so on. The challenge is to be clear about the research destination in order to understand what a *conversation-rich, information-rich, structure-rich environment* means in terms of the specific outcomes of a doctoral program for a particular student. Put another way, it is possible (though by no means certain) that higher levels of pedagogical literacy may be an outcome of the attention now being paid to the better management of research education.

ACADEMIC AS MENTOREE

The academic literacies that are necessary to the management and mentoring of postgraduate research within universities can work well within the university but may not be portable into commercial and industrial contexts, and it is for this reason that academics need mentors outside the academy. This involves respecting and engaging with knowledge workers who choose not to work in university settings or those who move back and forth between universities and the private sector. The call of the 1988 White Paper (Dawkins, 1988) to generate better links between universities and industry flagged a concern with 'laissez faire relationships' exemplified by the universities' apparent domination of the research training agenda. However, while the role of the private sector has certainly been limited in Australia, industry has not ignored the question of the relevance or quality of traditional postgraduate research. In 1996, Group Director of F. H. Faulding, Julian Clark drew on the perceptions of ten of his industry colleagues both within and outside his own company to identify the main weaknesses of PhD programs. They included:

- lack of consistency or quality assurance across programs;
- the fact that programs are driven by the philosophy of science *in isolation* from other key criteria;
- an ageing and inwardly-focused academy;
- a 'tamer' graduate product whose quality is poorer than a decade ago;
- the failure to inculcate teamwork skills, good workplace practices, creativity and lateral thinking in graduates;
- over specialisation at the expense of risk-taking and frontier breaking activity; and
- the gap that is maintained between knowledge and skill. (Clark, 1996, p. 4-6)

While such critiques have been useful in informing both government and the university sector about the need for change, they have not of themselves translated into rigorous new programs and new mentoring relationships, nor have they provided a platform to develop the sort of industry-university partnerships that make such programs and relationships likely. 'Partnership' was and is a much lauded and promoted idea in a new generation of literature about post-industrial knowledge production, yet the actual mechanisms through which diverse sectors come together around postgraduate programs of research training were undeveloped in the mid 1990s and are still to be fully developed (McWilliam et al. forthcoming). This means, among other things, that of the three roles named in the title of this paper, the role of mentoree in industry-focused research training is the least understood, requiring as it does the most profound cultural shift away from the traditional roles of the supervisor.

It is important as this point to acknowledge that the traditional work of postgraduate research education was being challenged well before the advent of the post-welfare 'audit culture'. 'Alternative doctorates', for example, can be tracked from the late nineteenth century. For example, a DPead (Doctor Pedagogiae) was first offered at the University of Toronto in 1884 and conferred in 1898, while a 'non-PhD' doctorate (EdD) appeared at Harvard University in 1920. The University of Wollongong's Doctor of Creative Arts appears much later in 1983 as Australia's first 'alternative doctorate', and it is one that continues to be offered in very much the same spirit almost two decades later. It is worth noting that in Australia the PhD was first awarded at the University of Melbourne in 1948 (Noble, 1994, p. 23).

Despite the reluctance of many academic gate-keepers to be its advocates, the Professional Doctorate have now taken its place within a broadening suite of postgraduate offerings in most British and Australian universities, and has done so with surprising speed over little more than a decade. Its rapid uptake in the UK has been attributed to a range of issues that seem to apply equally to the Australian context:

- The shift in the balance in higher education from 'subject development' towards 'student development';
- Criticisms of the traditional PhD, in particular its narrow focus;
- The development of work-based learning within higher education;
- Increasing concern with continuing professional development within the professions;
- Encouragement of professionals to move towards evidence-based practice;
- Accelerating pace of change in the professions;
- The shift from an elite system…to a mass system of higher education;
- The breakdown of the consensus about academic level conveyed by the distinction between 'taught' and 'research' courses;
- The shift towards vocationalism and professionalism in higher education more generally;
- The desire of universities to report [and monitor] increasing numbers of doctoral students…;
- The rise of postmodernism;
- The development of the concept of the reflective practitioner and related ideas;
- The increasing legitimacy within the academy of new forms of knowledge, including mode 2 (Gibbons et al. 1994) knowledge and situated knowledge; and,
- Subject specific factors. (Bourner, Bowden & Laing, 2001).

The first self-declared 'Professional Doctorates' appeared in Australia in 1991, and their numbers have since multiplied at a remarkable rate. Our recent national study (McWilliam et al. forthcoming) shows that 35 of the 38 Australian public universities offered some type of Professional Doctorate program in May 2001, with 131 such programs in total.

The growing interest in, and commitment to, Professional Doctorates implied in the above data is a phenomenon that has its parallels in other parts of the developed world, notably Canada, the USA and the UK, particularly England but elsewhere. We note that, by 1999, many British universities had some form of Professional Doctorate, with 153 programs being identified overall in England by 2000 (Bourner et al. 200, p. 41). In the UK as in Australia, this phenomenon seems to have paralleled key shifts in the relationship between universities and the State – what Michael Gallagher has called *the emergence of the entrepreneurial public university* (Gallagher, 2000). Gallagher understands this shift to have begun in Australia in the late 1980s, with a marked change from *academic-referenced* to *state-referenced* directions in the goals and functions of Australian universities (p. 7). That is to say, the goals and functions of Australian universities were reworked in ways that aligned them more clearly with national economic ends.

Given that the main purpose of the Professional Doctorate is to *provide opportunities for advanced professional development and applied research training* to *mature-age working people* within a particular professional domain (CADDGS, 1998, p. 1), it might be assumed that the academics teaching within such programs would need to be more literate in relation to industry-focused knowledge production than their counterparts in traditional doctoral programs because they would be working outside the disciplinary and organisational domains of the university. A disappointing finding from our study is that, with a few notable exceptions, these 'applied' programs of industry-focused research exhibited few signs of academic capacities to engage with industry in any systematic or sustained way. This is not to say that the programs fail to deliver quality research – it is rather that most

academics' experience of research education is a PhD experience, whether or not they endorse the aims and values of the Professional or applied Doctorate and it is that experience which becomes the 'default' model for doctoral knowledge production and research training.

This fact is evident in the 'traditional' nature of most operational Professional Doctorate programs. Almost two-thirds of these 'alternative' programs are 'research-based', with the dissertation being overwhelmingly the most likely product. We have characterised the links that most such 'industry-focused' programs actually have with industry as 'surface', in that they exhibit the following features:

- A particular industry or group of industries is the source from which most clients come and to which they return;
- There is some attempt made to involve non-academic individuals from industry and/or a professional group in course delivery, supervision or assessment (this is likely to be limited and ad-hoc);
- Research and research activities are workplace-based; and,
- Marketing materials stress the value of the program to targeted professions.

Only a handful of programs appear to exhibit 'deep' levels of linkage with professional and industry bodies as indicated by the following:

- Their establishment is driven by a particular industry or professional association (eg, peak industry groups define the nature of the training to be undertaken and the skills/attributes that are to be developed);
- Industry and/or professions are partners in the delivery and supervision of programs, and this is built into the funding and/or sponsorship arrangements that exist between universities, participants and external bodies;
- Industry/professional bodies play a substantial role in the assessment and credentialing process;
- Research training outcomes are of a nature and in a form that is recognisable as beneficial to the industry/ professional partner; and,
- The community of learning built around the program includes both academic and industry and/or profession based participants.

(Note: There is no evidence that 'surface' programs become 'deep' ones over a period of time.)

If these 'deep' criteria are to be understood as measures of 'industry-focused' quality, then we have yet to see the enactment of quality industry-focused research education in Australia. Of course, it is not only academics who are yet to become 'literate' in relation to the design and delivery of 'deep' linked programs. New literacies are clearly required from a range of stakeholders if the 'triple helix' of industry/ government/ university relationships (Etzkowitz & Leydesdorff, 1998; 2000) is to be more than a rhetorical flourish – that is, a genuine partnership around research education. This means, among other things, that academics will need to look to and learn from industry mentors (including their students) about the new purposes to which postgraduate research might be put, and the new modes of knowledge production that are now part of a wider environment of knowledge work that we are calling 'the knowledge economy'.

WHAT'S LEFT?

So what is left of Abelard and Heloise? There are compelling reasons for answering 'not much', given public systems of monitoring quality and the much more crowded landscape of stakeholders and policy-makers pushing and pulling around new ways of engaging in scholarship. Certainly Abelard and Heloise would be unlikely to relish the brightly lit forensic table that is the audit culture through which their respective 'performances' would now be chartered, nor the chattering of all the new voices that now clamour for access to what was once a privileged and singular domain. (It must be said, however, that Heloise could not have been formally enrolled in the

university of her day and may or may not have been content with the private access she had to her mentor.) The idea that they would have to do without the erotic desire that passed between them as mentor and mentoree now goes without saying. A University Equity Committee would see to that. Having convinced ourselves that erotics ought to have nothing to do with research quality, we cannot inspect the possibility that there remains a physical dimension to desire for and in research education. We can talk about motivation, but never seduction. Tempted as I am to open up this Pandora's box for scrutiny, that particular provocation is best left to another paper in a far away time and place.

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[1] Research funding of up to $4,000 per year for three years is being made available by the Queensland Government to support PhD research which can inform policy priorities. Research can also be supported by the provision of enhanced access to government data and where appropriate, research co-supervision arrangements. The Queensland government has established 5 priority areas:

* More Jobs for Qld - Skills & Innovation - The Smart State;
* Safer and More Supportive Communities;
* Community Engagement and a Better Quality of Life;
* Valuing the Environment; and
* Building Queensland's Regions. (See website: http://www.premiers.qld.gov.au/about/pcd/policyresearch/growingthesmartstate.htm).

POST-PRESENTATION RESPONDENT

Diane Bills
Professional Development (Research Supervision)
University of South Australia
AUSTRALIA

Erica, thank you very much. I have so many questions down here. I don't know that I'm going to be giving comment so much as asking questions, and I hope that many of them will be raised by others. So I'm going to actually limit my questions. I'm going to ask one, and it's about, Erica, the ways that we can link with knowledge workers in industry and in the professions, particularly when we understand the kind of reluctance that academics have, as you mentioned, to engage with the literacies of the workplace, of industry, of the professions. And a mutual reluctance, I think, on the part of knowledge workers outside of the university to engage with academic and research literacies.

And if I can, I'd just like to put this in something of a personal context, and I don't want to be narcissistic here but I think it's relevant. I will admit to having a very fledgling academic and research identity. I'm sort of still at that stage where, when I want to fly, I have to remind myself to flap my wings. But I guess it was, for me when I started my PhD, I came from an industry background—from a professional background—where my identities were deeply ingrained, deeply embedded. I mean, they were just the logic of my professional practice that I enacted, and I came with two postgraduate degrees—a graduate certificate and a Master's by research.

When I came into a PhD, I found that no one talked like I talked. No one understood what I was talking about. No one valued what I valued. The discourses were all completely different, and it took me a long, long time, I think—I had a timely completion—but it did take me a long time to actually cross that border. And there were times when I didn't think I ever would. Now, what I've done, I guess—I have successfully crossed that border, although I'm quite disconcerted to think that what my PhD has been is a ticket into the underclass of the university. But that's what it has become. I haven't gone back to my profession and, with all of that as context, I guess the comment I would like to make is that I think we have an extraordinarily long way to go before we can actually mutually examine and acquire and challenge, even respect enough to challenge, the respective discourses and literacies of industry and the professions.

So my question to you, and you don't need to answer it right now; but a question that I would appreciate you talking about, is to discuss some of the ways we can do that deep linkage.

POST-PRESENTATION RESPONDENT

Alex Bartel,
Head of English Language and Study Skills Centre
University of Technology, Sydney
AUSTRALIA

Thank you very much. Firstly Erica, I would say how truly inspirational your paper was and I really enjoyed it. I'd like to speak from the perspective as an academic literacy professional. I nearly said 'expert', but we're not any more in this field any more because some of the new literacies, in terms of writing, in terms of reading, in terms of text and so on, we're faced with have turned people like me into trainees as much as trainers.

What I'd like to put on the table is a notion—which to many of us is just a notion because we've accepted it because we work in the field, but to many people in academia is more a challenge—is that, in fact, disciplines create their own discourses. If you turn it around, discourses create the disciplines. What that means is that the content form language that are part of a discipline or part of a field cannot be dissociated. So, what I would like to put on the table as a challenge is, if we're faced with new discourses and new disciplines and we are the stakeholders in that, the academics are working as supervisors, the students as researchers, and industry. And that's very interesting—an interesting combination of things, of people working in the same field. What we can't leave out of that equation is that the academic literacy professionals are part of that equation.

The challenges that I see here are challenges to do with co-production, and I would like to refer back to the spelling error, which maybe is not a spelling error. Because if you're talking about 'inter-gration', that is like interdisciplinary, international, and so on.

Co-production of text and content with academics working much more closely with people like us working in the field of academic literacy. What I'd like to use to illustrate that is an example of work that we're doing at the moment at the university I come from, the University of Technology in Sydney, where in a professional doctorate in the faculty of nursing, we have been invited in to train the supervisors as well as the students to show them what a professional doctorate looks like. And we've said *Well, please show us one so we can be constructive and reconstruct it and tell you how it looks*, and they said *Oh, but we haven't got one*. So what that has resulted in is a very interesting relationship, that we're working jointly with the supervisors and with the students constructing the texts that are needed to create a professional doctorate in the discipline, and that's a fascinating adventure.

The last comment I'd like to make is that I think we need also to be challenged a little bit by trying to shift the label that's attached to people like me working in the field of academic literacy—to shift the label from working as academic literacy professional experts or whatever exclusively with international students. Because, for example, the

work that we do at UTS again, if you look at the statistics of last year at the postgraduate level, sixty per cent of the (I can't remember how many hundreds of students we saw) working at postgraduate levels were local people. In the context of the professional doctorate, for example, it's eighty-five per cent. Eighty-five per cent of students are local people.

I think if we manage to shift a little bit that label from seeing us as a people who just correct grammar, and so on, and so on—improve the language skills of international students—to the issues that we're faced with which are to do with creating new discourses and helping people work out how those discourses work, I think we will have achieved a lot. Thank you.

Erica McWilliam
I'd like to just say something about the international students issue, because right now international students are both our greatest danger and our greatest hope. There's this paradoxical thing that they're being framed as our greatest danger in terms of standards, in particular soft marking, because soft marking around PhDs is a real problem—PhD is the flagship. But also the idea that international students will be our solution, they will be our money solution. And so we frame them both as the great danger and as the great solution. I think this is far too much for international students to bear or wear. You know, either of those possibilities. So we've made investments there, I think, that are giving us a lot of trouble.

As you say, the other point then—it actually situates you in any other TESOL group or second language group. You're in the thick of the politics, in a sense, when that is the case, especially at postgraduate level. I do think we need to think abou this. International students are very canny consumers of education. They've been consuming Western education for a long, long, long time and they know about that. This doesn't come as a surprise. But I think we've got to think more closely about the way in which we understand both the danger and the possibilities that international students at PhD level represent, because it's a real issue right now.

POST-PRESENTATION QUESTIONS

QUESTION 1

My question links into a couple of things you've said, and something that Alex said, about third supervisors. I know at the Learning Support Network we get a number of PhD students, mostly international but also local, who require assistance. The supervisors ask us to give them assistance, and it goes far beyond the writing. It's to do with the structure and it goes to the concepts and the logic and so on. Do you think there's room for a third supervisor who actually takes this role? I think there's an ethical issue related to this as well, because very often it's the work that students do with people like us that really makes the completion possible, and we're not acknowledged.

Erica McWilliam
I think it comes back to the issue, again, of what the supervisory team might look like. This question of whether one person does the one thing and someone does the content and someone does the proofreading of the edit. I know in the case of the Thai woman whose thesis I've just finalised, the issue for her was—her biggest issue—was the issue of critique. For her, the important thing was respect for the scholars she read, not critique. I think this might be one of the sorts of things you're talking about in terms of that extra dimension. The whole point of Western scholarship is that you're supposed to be critical of the reading that you do; you're not supposed to swallow it whole; you're not supposed to sit at the feet of these people. You're supposed to look for gaps and problems with their logic and weigh it up.

Not that there isn't a critical capacity or a problem-solving capacity that she had, but she just didn't want to bring that to academics, and certainly not to any work I showed her that I'd written. If I showed her work, she said *This is very good*, and I said *What do you think?*. Well, she thinks it's very good. Now, what we ended up having to do was to write, if you like, almost a disclaimer. And this is where literacies for examining this become important. What we wrote in the beginning, and I sat with her for a long time and I did it to say, let's talk to the examiner about why your work mightn't seem quite so critical. Your work has to be used in Thailand, so that's where its audience will be when it gets picked up as a professional doctorate.

So we had to write quite a lot. There was a lot of throat clearing and: *Please understand, this is part of a cultural issue here*. Of course, she wanted a Western credential, but then the critique was not something that came easily. And there were some things which I felt I had to respect, to not keep asking her to furrow her brow and suck a lemon every time she read an article, you know? It is a serious dilemma and I don't know that I could have just handed that to somebody else. It is one of the most labour-intensive things I have ever done. Now, she's got in touch with me from Thailand from Chiang Mai University just recently where she got a job and she said *The Dean is very interested in your professional doctorate and wants to send many others like me*.

Twenty more people like her and that would break my back! And what we have to do is say, *What do we do for people like her?* Well, it was an unsustainable economy. But, at the same time, we took her in and I was determined we were not going to then dump her—take her money and send her away.

But, you know, there are some people who will just take the money—and I think that there's an ethical issue of obligation if we're going to take people into dissertation writing programmes with limited English. We've either got to let her write in her own language and have an arrangement where she can do that or help her with English. Our university doesn't have that arrangement. We've got to find a way of behaving ethically and morally towards our international clients and knowing what's possible, and not telling them things that are just simply not possible.

QUESTION 2

Could I just comment on that? Because you're really locating this discussion in the professional doctorate that you work in, but there are those of us who work with the PhD students—with the research students. I'm in the University of Adelaide where we run a programme especially for PhD students and Master's by research in order to address exactly that issue over a full semester. But there is a dreadful neo-colonial aspect to that. As you can see, I'm absolutely thrilled that you wrote a disclaimer, but we'd be writing millions of disclaimers, and we would be working against what the institution very, very largely sees as our role, which is actually to produce a certain kind of critical approach in terms of behaviour, and critical approach in terms of text, which are seen as the flagships of a degree.

Erica McWilliam

One of our students from Papua New Guinea described the PhD as the most colonial experience she'd ever had.

QUESTION 3

The analysis that was done of the first year of the postgraduate research experience questionnaire showed that international students rated Australian PhD training more highly on most of the items than did local students, which suggests that while there may be students who experience their candidature as a colonial process, they're are also recognising some positive value out of that.

Erica McWilliam

We don't get as many PhD students from there as America does, but one of the reasons is that when an international student goes home from an American university, they know if they've got their degree. Students leave here not knowing because we have the British system of sending it to external exam. That is an issue. So we don't get as many

students. I'm sure this Thai woman who just got a Doctor of Education—she is jubilant; she is delighted; she is over the moon; she would say Australian doctoral study is fantastic. But it was unsustainable for me. I think there is a lot of work that remains unseen. I don't know the exact figures and how many and so on, but it seems to me that what we can't do is keep investing in an unsustainable economy. We've got to find other ways to do that, or else call on people who are in the support areas to become part of the team.

QUESTION 4

The points I want to raise are in the form of further defining three particular words. By the way, I'm a PhD student as well. Now, regarding 'industry'. I just want to challenge us all here that Aboriginal communities are a form of industry to those Aboriginal students who are postgraduate students and undergraduate students who are training to go back and work in those places, and also non-indigenous people who train themselves and who have that ambition, as well.

The other thing is quality, and it links in with literacy. The first language of many Aboriginal students is Aboriginal English, a dialect of English. When they come to universities, they struggle with the dense text of textbooks. They are also forced to write in academic English which is fine and they get used to it. However, when they produce their theses, they produce knowledge that is useful to communities in a language that communities don't understand. There's a need to reinterpret so that that knowledge becomes useful to industry.

The other word is 'quality.' The point is that I would think, from the point of view of community or the consumers of the knowledge that our students produce, that quality refers to exactly the opposite to what it does in some forms in universities. That is, another form of Aboriginal English. Knowledge produced in a way that it can be consumed effectively.

Erica McWilliam
Dr Anne Hudson talked about the use of Creole in Jamaican universities and how the people who both wrote in Creole and moved backwards and forwards across those dialects. What we're hearing over and over again here is about systems of language use, and how they marginalise and create communities and create literacies, and how people feel that they're in or out. You're quite right that at the moment really, the audience for a PhD is three picky examiners who are unlikely to be indigenous people, and moreover they will find that dialect to be poor English. So what you have is an examination system, and then a possible community of end-users somewhere else who have nothing to do with those assessment procedures. As I was saying before, what we still have to do is to find a way of linking up a community of end-users with the assessment procedures that we've got, and I still think we're a long way from that. I don't think we're there.

WRITING WORKSHOPS FOR DOCTORAL CANDIDATES

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When writing is seen as a generic set of skills, it is assumed that these would need to be 'taught' only to those who are 'deficient' in writing skills, which would be rare at the doctoral level. However, when writing is considered a social practice, then it becomes clear that writing workshops may benefit doctoral candidates (including those with English as a first language). Such writing workshops have been incorporated into the doctoral schools for candidates undertaking professional doctorates in the Faculty of Nursing, Midwifery and Health at the University of Technology, Sydney. These workshops use published texts and participants' own drafts to open up ways of talking about writing, to raise participants' awareness of the choices writers make in the language and organisation of the texts, and to consider the effects of these choices on readers. This presentation will discuss the planning, delivery and evaluation of these workshops, drawing on student data and a sample workshop task.

FROM CONCORDANCING TO CRITICAL LITERACY

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Starting from a description of an evolving program of academic literacy workshops for international PhD students in Arts and Social Sciences at an Australian university, I consider the multiple layers of the academic literacy demands of thesis writing. Fairly technical strategies such as concordancing help students expand their lexical resources and are the point of departure for more critical explorations of issues of voice and identity as well as for the differing thesis genres of qualitative reseach. The generic structure workshops draw on current research into the research article genre and on theses from the digital thesis website.

WRITING TO RESEARCH: A SUPERVISOR'S PERSPECTIVE

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Writing a doctoral thesis involves writing to provide closure on a whole range of research practices. It is writing to report. As a supervisor, I am more interested in writing to research, writing to open up new ways of thinking and doing research, writing to dialogue rather than to close off. Every year of doctoral study involves writing to research. It starts as students develop their research proposal and continues through many hours of academic reading, developing research tools, conducting field work, and analysing data. Electronic supervision has greatly enhanced the opportunities for supporting students' engagement with writing to research. It provides an informal forum where style of writing is not at issue; the focus is on the practice of reseach and on the dialogue that can ensue as an outcome of writing. I shall discuss several examples of writing to research, taken from electronic supervision with doctoral students who were either refining their research tools, resolving fieldwork concerns or making in-roads into data analysis.

RAISING POSTGRADUATE STUDENTS' AWARENESS OF GOOD THESIS WRITING PRACTICES

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A growing body of research into academic literacy as well as our own experience of teaching postgraduate students at the University of Hong Kong has demonstrated that students' interpretations of what is required of them when writing a thesis in English is not well understood. Students often see the thesis as peripheral to their research and not as a means by which to communicate that research. In this presentation I will first focus on student's perceptions of their role as a writer and factors, such as undergraduate education, which may affect their perceptions. I will then discuss how through a series of compulsory writing workshops at HKU we try to raise students' awareness of good thesis writing practices.

LANGUAGE USE AND ABUSE IN WRITING A THESIS: THE EXPERIENCE AND EXPECTATIONS OF SECOND LANGUAGE STUDENTS AND THEIR SUPERVISORS

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As university education becomes more accessible to students from a range of linguistic and cultural backgrounds, issues relating to language use and effective communication are becoming more challenging for lecturers and students alike. For second language students who do not possess a native speaker's knowledge of the conventions governing the use of English, thesis writing in particular presents a number of difficulties.

Supervisors are often faced with the problem of students who require assistance not only with context and structure, but also with the basic rules of grammar. Many supervisors argue that they do not have the expertise and/or the time to deal with student difficulties as far as grammar and register are concerned. Research indicates that many ESL students have unrealistic expectations of the supervision process, based on the conventions of other academic settings, and will expect such help from their supervisors. There also appears to be an inclination to underrate assistance from other sources such as student services. This paper describes our interest in the problems faced by both students and supervisors, and the research we are undertaking into the expectations of postgraduate students and their supervisors with regard to this issue.

POSTGRADUATE LANGUAGE MENTORING FOR NON-NATIVE SPEAKERS: CREATING A PEDAGOGY

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Diversity in the actual practice of postgraduate research in Australasia far exceeds the methodological simplifications of textbook descriptions on thesis writing. This diversity is a reflection of the fact that thesis writing practices and products are constantly being transformed by institutional changes in higher education; the increasing presence of non-English speaking postgraduates is one element of this complex picture. For non-native (and native) postgraduates the academic 'apprenticeship' process is heavily dependent on being able to manage the socio-cultural, linguistic and cognitive demands of writing through and for research. Students from non-English speaking backgrounds have particular needs in meeting these expectations and the provision of language support or mentoring through group and individual formats is one of the mechanisms that has been created to achieve this. One of the current difficulties faced by university staff in this role is establishing the limits of responsibility: where do language issues (language support and mentoring) end and where do content (traditional supervision) issues start? I use recent discussions in the Australasian literature, documents and experiences at Melbourne University to being to address the pedagogy of language mentoring in the postgraduate process.

HELPING INTERNATIONAL POSTGRADUATES WRITE THEIR THESES: A LEARNING ADVISER'S PERSPECTIVE

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This paper is a reflection on my 18 years experience of helping international postgraduate students write theses and shows how this experience has shaped my approach to one-to-one work with them.

The outcome is an approach that:

- is student-centered - interaction with a student starts from student's current understanding of the system and its expectations (academic standards, 'product specifications', role of supervisor), conception of knowledge and knowledge creation, perception of writing process
- sees learning and writing as conceptual change (helping students to move from the current to the desired position)
- sees development of knowledge and skills as the outcome of social interaction (entering a dialogue with a student, questioning, serving as a sounding board, asking for justification)
- uses the concept of 'scaffolding' where a more experienced person (a learning adviser) facilitates learning of a novice who, in the process, becomes an independent writer
- facilitates improvement of writing by providing honest, timely and readily usable feedback.

Setting boundaries proved to be one of the most difficult things to achieve. Issues such as discouraging students' dependency, not staking one's own reputation on students' work, not doing students' work for them and not getting involved in students' personal lives are discussed.

DEVELOPING RESEARCH LITERACIES AND THE 'OPEN CAMPUS'

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This paper will contribute to debate on academic literacies in the area of research education through a discussion of higher degree by research (HDR) student research and generic capabilities acquisition.

Recent Commonwealth policy statements and funding formulas have asserted the centrality of a stimulating, vibrant and supportive research environment to a quality research training experience. Such an environment is seen as integral to the graduation of research students with the capabilities to effectively enter and contribute to the knowledge economy.

Given the diversity and flexibility that is characteristic of the current higher education system, however, the features of the research environment that might be identified as contributing to the development of research literacies cannot be understood as either singular or shared. Students themselves are diverse and so to are the ways, and places, in which research is undertaken.

This paper examines the impact of differing learning contexts on how HDR students might be understood to develop research and generic capabilities. The spaces within which research happens—both within the confines of the University and beyond its walls—has implications for how the outcomes of the research student experience are understood.

The paper draws on two cross-disciplinary studies conducted at RMIT, one on the role of the research environment in the research training experience, and the other, on the experience of part time HDR students in full-time professional work. These studies are instructive as to the range of factors impacting on the development of research literacies, their multiple sources and myriad dimensions, when a range of learning contexts are taken into consideration.

RESEARCH EDUCATION CULTURES: EMERGING FRAMEWORKS

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The University of South Australia is embracing the concept of research education and moving toward the idea of developing a research education culture. For example, Drafts of the revised Research Training Management Plan and the Code of Good Practice: Postgraduate Research Supervision reflect this new emphasis on research education. One of the key strategies for implementing research education is the development of structured programs for research degree students. Although probably not intentional, the ways in which these structured programs have been developed demonstrate some of the differences in the emerging research education cultures. While not the only component of a research education culture, an examination of the structured programs highlights some of the issues that may need to be revisited if research education is to be as effective as it promised.

In this paper I examine how research education is emerging within research degree programs at the University of South Australia. By locating research education into the broader context of the research degree process, the relationship between research education cultures and research cultures more generally is highlighted. Although still in its early stages, it is evident that four models of research education cultures are emerging: a) supplementary, b) portfolio, c) complementary and d) embedded. As a Learning Adviser for research education, my interest is in the ways in which these models raise interesting questions about the pedagogical principles in research education; the anticipated research degree outcomes; and whether both of these can be effectively incorporated into a research degree.

RESEARCH AS A STAFF DEVELOPMENT FOCUS: RESOURCES AND SUPPORT

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Technikon Northern Gauteng (TNG) was established to provide technicians for labour requirements in South Africa's industries. As a result, staff members and students were not required to do research. The emphasis on teaching influenced resource allocation, which affected infrustructural allocation, support services and finance and staff qualifications. For example, basic degrees were sufficient for staff to teach and rise through the ranks.

The National Higher Education Plan through Higher Education Act streamlined tertiary institutions and technikons like universities were mandated to offer higher degrees and conduct research. To respond to the mandate of the act, the technikon recognised the resources and staffing levels as constraints. Research Capacity Building program came in as a remedial process to encourage and support research development.

This paper reports on the gains observed from the research capacity building programme that TNG used to promote the culture of research among staff, and the analysis of what role resource support played in reaching such gains.

VISUAL LITERACY WITHIN ART AND DESIGN RESEARCH

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Many initiatives at international and national level have encouraged the development of a research culture in art and design. Against this background there is much scope for networking events or initiatives that bring together students and supervisors so that they share and discuss good practice. This presentation will focus on the ways in which students can be encouraged to become active participants within the emerging research culture, in particular within a series of conferences that promote and discuss the content of research in art and design. Within art and design research there are issues of visual literacy that can be addressed through the kinds of presentations encouraged at research events and within the supervisory process in an institutional setting.

This presentation will use the example of three conferences and their associated events, held at the University of the West of England, Bristol, UK, between 1998 and 2000, as a case study for the discussion of the role of the visual within research and presentation. The 2000 conference included opportunities for postgraduate poster presentations and contributions to an online exhibition of digital art. The conference also initiated an online journal, which offered further opportunities for publication and peer review. The presentation will be concluded through a consideration of the potential of online opportunities for research dissemination and for reflecting on the research process.

COMMUNICATION COURSES FOR RESEARCH STUDENTS IN ENGINEERING

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This paper will describe two faculty courses (zero credit, 13 weeks, 2-3 hours per week) designed and delivered by The Learning Centre for research students in the Faculties of Chemical Engineering and Computer Science at The University of New South Wales in 2001. Each course's organisation, objectives, assessment tasks and assessment policy, classroom management and faculty input will be explained.

Challenges which have emerged in delivering and evaluating these courses over the past five years include:

- finding models of best practice for analysis,
- the depth of students' prior communication experiences,
- meeting the different literacy needs of native and non-native speakers of English,
- encouraging research students to read and write from the beginning of their candidature,
- encouraging students to be mentors for each other in developing their written and spoken communication skills, and
- encouraging faculty to be actively involved in the courses.

Student evaluation and ongoing liaison with the Post Graduate Research Coordinator for each school have been significant aids to course structure and materials design. While most of the challenges have been met to some degree, and both faculties and most students are satisfied with the outcomes of the courses, I hope to have an opportunity to discuss with the audience further alternatives and improvements.

BEYOND LITERACY

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International postgraduate students, especially those who have been in the workplace for a number of years, experience a range of academic transitional difficulties that go beyond literacy. In this paper three areas of discursive shift are explored: shift in learning approach from reproductive and analytical to speculative; shift from a professional to an academic discourse; and shift in language and culture. Each of these areas is examined in turn, and illustrated by brief case studies.

Effective staff responses to international students' difficulties in negotiating each of these discursive shifts will be considered in terms of discourse theory coupled with Biggs's refined version (1996, 1999) of Dunkin and Biddle's 'presage-process-product' ('3P') model of the teaching and learning process (1974). This model recognises that a student's pre-learning characteristics, known as 'student presage factors', have important measurable effects on the learning process and learning outcomes and that the relationship between presage, process, and product is highly dynamic.

The paper argues that to facilitate postgraduate students' successful transition to research at an Australian university we must acknowledge and *validate* their prior educational, professional, and cultural experiences and also recognise that their transition involves negotiation of discursive conflict and disruption. It concludes that while the transition process may be stressful, it can also—if well managed—be a catalyst to intellectual adaptation and growth.

RAISING THE QUALITY OF CONFERENCE PAPERS

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Conference papers are a major source of information in postgraduate research. Consequently, not only must they be literate, they must provide a contribution to the conference discipline. Papers submitted to a conference pass through a peer-review process before being accepted or rejected. Thus the reviewers decide on the papers to be presented in the conference and hence set the quality level of the papers.

This presentation examines the requirements for the knowledge and skills of the reviewers. Two international symposia on systems engineering are used as a Case Study. The author reviewed submitted papers for both symposia for several years and organized the review process in one of them. The major part of the presentation comments on the quality of the papers within the context of:

- Papers making a contribution to the body of knowledge.
- Papers rediscovering published knowledge
- The difference in the various reviewer's comments on the same paper for a single symposium
- The comments by reviewers for different conferences on a specific papers when they were submitted to two conferences.

The presentation then develops some requirements for reviewers.

'A MODERN WHODUNNIT': WHOSE WORK ARE WE MARKING?

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Plagiarism is frowned on. A less obvious but important question of authorship also arises when a thesis incorporates the work of a third party such as a professional editor.

Does the increasing, and often invisible, use of this resource constitute plagiarism? Is it, in any case, a significant issue? Editing of theses is becoming the norm in submission of English doctorates, for example, where it could extend to creative input rather than mere correction of grammar or suggested changes in layout. Arguably, the assessment process already involves feedback and guidance that could be seen as directly intervening in the student's learning.

Whether the supervisor suspects such assistance or it has been openly acknowledged, the dilemma is in determining a suitable approach to assessing the students' own achievements. Whose work is being marked? How do we decide *whodunnit*?

The authors have previously presented papers on the extent to which writing teachers contribute as editors to student work (what might comprise an acceptable mix of student and teacher input to learning), and on undergraduate plagiarism.

PLAGIARISM OR LANGUAGE DEVELOPMENT? AN ISSUE FOR INTERNATIONAL POSTGRADUATE RESEARCH STUDENTS

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For postgraduate international research students from language backgrounds other than English (LBOTE) the notion of plagiarism can be a serious point of confusion. Students are clearly informed that plagiarism is unacceptable, yet the boundaries between plagiarism and language development are frequently a mystery to them. This paper addresses a recurring issue for language and learning advisers: how to assist students—and indeed their lecturers—to understand the extent to which it is permissible, and even necessary, to 're-use' the language they meet in the literature of their field. The paper draws on genre theory and personal experience in providing research students with advice on academic language. It discusses students' need to recognise the difference between increasing the level of sophistication of their written work, and simply 'borrowing' large chunks of text from their reading. The paper will demonstrate that there is an urgency for the academic discussion of plagiarism to be informed about the nature of language in research genres, and to separate the unacceptable 'cheating' aspect of plagiarism from the inadvertent one which can result during a time of language development.

"WE ENJOY HER PICTURE PUZZLING AND APPRECIATE HER NOT TOO MANY WORDS". DIAGRAMMATIC REPRESENTATION: HOW IT CAN HELP INTERNATIONAL STUDENTS TO OVERCOME LANGUAGE BARRIERS

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Many international students, shortly after commencing their postgraduate study in Australia, feel their language skills are inadequate for the tasks ahead; they may also feel alienated from their discipline. In part this is due to the volume of reading they are expected to undertake for their literature review and in preliminary studies. As an academic skills provider I encourage students to develop diagrammatic representations of complex and detailed texts in an effort to shift the emphasis from choosing the 'right' words to representing the interrelationship of ideas. At the same time, these visualisation techniques assist students' higher order thinking and act as a planning framework to structure their dissertation. This paper outlines some of the ways explored by students and the author to represent written texts.

SECTION THREE

THE POSTGRADUATE EXPERIENCE

PART-TIME RESEARCH STUDENTS: THE 'RESERVE ARMY' OF RESEARCH STUDENTS FOR UNIVERSITIES

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ABSTRACT

Over the past twenty years, in Australia, there has been a steady growth in the numbers of part-time research students. However, they have generally been invisible in government policy on research training, and have rarely been the focus of specific treatment in universities, where the full-time scholarship-holder is taken as the norm. Yet, these are people who often undertake their research in their workplaces on problems germane to their work. They do so with relatively less 'drain on the public purse' and they are well-placed to ensure their research has effect.

This paper suggests that this 'reserve army' of research labour—part-time research students—could benefit from the integration of the perspectives that have driven other aspects of adult education with those, often economic rationalist perspectives, that have driven research training policy. In this way, government policy-makers may appreciate that this 'reserve army' provides good value, and universities may shape their research training policies and practices to provide support, infrastructure and supervision that matches the needs and contexts of part-time students, and which facilitates 'technology transfer' and links between universities and industries and the professions.

INTRODUCTION

This paper draws on various sources of 'inspiration' that have culminated in my concern to bring the matter of part-time research students into the discussion of *Quality in Postgraduate Research*. It is important to note the sources of inspiration at the outset, partly to acknowledge my intellectual debts, and partly to illustrate that they reflect, as the Conference theme invites, a degree of integration of perspectives. These sources are:

- For a long time I have been persuaded by colleagues from Deakin and elsewhere (especially my late friend Alistair Morgan of the UK Open University (for example, Morgan, 1993, 1997) and also Daryl Nation of Monash University (Nation, 1991) that approaches to teaching, supervising and supporting adults in their learning need to take account of both the personal and social contexts in which the learners are located, and that social (and even psychological) theories from outside of education need to come to bear on our theory and practice. These ideas were grounded in the teaching of adults in what we would call 'courses' and were not related to the matter of research students, and I have taken the step into doctoral pedagogy.
- Another source of inspiration to me has come from my own work as a supervisor and manager of postgraduate research in the Faculty of Education at Deakin University. About eighty percent of our doctoral students are part-time and virtually all of the students have been or are educational practitioners of one kind or another. Over the past decade I have encountered many of our doctoral graduates who are very impressive people, whose research gets published, some have a profound impact in their workplaces, and a few (especially international students) even affect national and international practices.

- Almost all of these graduates are employed, often after graduation they with make job changes or obtain promotions as a result of their doctorates. They are not 'doctored' washers-uppers of dishes or taxi-driving PhDs, they are doing important jobs for the community and/or economy.
- The Government has inspired me too! The West Report (West 1998) followed by the Green and White Papers (Kemp, 1999a, 1999b) and then culminating in the implementation of the Research Training Scheme and its various monitoring (especially the PREQ and Completions (Martin, and others 1999)) and quality assurance imperatives, are impressive sources. However, I was often inspired by what I saw as the flaws and absences.
- Finally, I was inspired by an invitation, from Erica McWilliam and Richard James, to write an article for a forthcoming special issue of *Higher Education Research and Development* on the topic of *Doctoral Training and the Knowledge Economy* (Evans, 2002). This task drove me to obtain data on part-time students and to formulate an argument about their invisibility and potential in relation to the knowledge economy. This paper draws on this article for some of its argument.

Together, these matters lead me to believe that any consideration of *Quality in Postgraduate Research* needs to take account of the significant and growing proportion of part-time postgraduate research students[1] and their personal, social and professional contexts. The contemporary concerns for Australia's place in the global knowledge economy may well be allayed, by a more explicit understanding of these matters.

MAKING GOODS FOR THE KNOWLEDGE MARKET

The so called 'knowledge economy' is predicated partly on the assumption that, not only is knowledge (and the associated skills) a 'tradeable commodity', but also that new knowledge is as necessary to the knowledge marketplace as fresh fruit and veg is necessary to the local community market. However, whereas the freshness of the fruit and veg is a qualitative condition of the *reproduced* products, in the knowledge market, it is the originality and utility of the newly produced products that is the essential qualitative condition for tradeability. Therefore, a knowledge producer cannot rely on reproducing the same knowledge that the market has eagerly consumed in the past, but rather has to produce something sufficiently original and useful for it to be traded successfully. This is an over-simplification of the circumstances of the knowledge economy, and it ignores many of the distortions and aberrations of the knowledge marketplace. Of course, there are many markets where goods are traded, such as many consumer durables, which contain new knowledge and are reproduced for limited periods until a 'new model' is launched.

If a premise of the knowledge economy is the production of new knowledge (and ideas and skills) then the matter is raised of how this production is achieved. Research is commonly lauded in public and government debates as the production engine of new knowledge and, although one might wish to qualify this assertion, it is a reasonable general position to adopt. However, research itself is a body of knowledge, skills, practices and values that leads to the production of knowledge. Or rather, research is an umbrella that covers a range of such bodies of knowledge, skills and values that produce new knowledge valued as original and useful within its particular discipline, field, community, industry, profession etc. The usual way in which people become members of such research communities—that is, become researchers—is through 'research training' in a university, especially through a doctoral program. Such programs provide teaching and supervision to enable a candidate to undertake a piece of research that produces, in the eyes of the examiners, a significant contribution to knowledge in the field. That is, a person with a research doctorate has 'proven' that they can produce new knowledge.

DOCTORAL STUDENTS: A KNOWLEDGE-PRODUCING LABOUR FORCE

The numbers of people with doctorates in a nation might be considered as a measure of its strength as a knowledge economy. In Australia, although the number of doctoral candidates has risen substantially, from 5,753 in 1979 to 28,629 in 2000 (DETYA, 2001, p. 13), this has been reversed by the Government with the intention of

reducing the number of government-funded research students by about twenty percent by 2003. This reduction was planned to be phased in from 2001, however, the growth in 'non-overseas' research students (including research Masters) was only 22 people (0.07%) between 1999 and 2000, from 32,905 to 32,927 (DETYA, 2001, p. 133). In the same period, 'overseas' numbers increased by 193 (8%) from 2,405 to 2,598. Furthermore, there are reports from both the UK and the USA that, after peaks in doctoral numbers in the mid to late 1990s, reductions have occurred to local enrolments but which are also masked by increases in 'overseas' students (AHES, 10 October, 2001, p. 29; Geiger, 1997). Therefore, it seems that this measure of research strength is in decline in these nations.

Further investigation of doctoral enrolment figures shows some other important trends, too. Evans and Pearson state that part-time doctoral study in Australia has risen from practically zero to about forty percent from the early 1970s to 2000 and that nowadays about half of all research doctoral students are enrolled in the DETYA Broad Fields of Study related to the professions (Evans & Pearson 1999)[2]. Therefore, a significant proportion of the rise in doctoral students has been contributed by an increase in part-time students. Partly this is explained by both the availability of part-time study for research degrees which commenced as universities changed their regulations from the 1970s onwards, and also partly by the increase in demand from an increasingly credentialled population, especially in the Education Field of Study. Since the 1970s, a similar pattern is evident in North America, the UK and some other European nations, where there have been rises in doctoral enrolments in professional and 'practitioner-oriented' fields of study, in comparison with traditional arts and science, to the extent that they now comprise the majority of degrees conferred (Becher, Henkel, & Kogan, 1994; Clark, 1993; Noble, 1994).

Professional doctorates have been offered in Australia since the mid-1990s and by 1997 Trigwell, Shanahan and Maurizi (1997) were able to report that the majority of universities offered at least one professional ('research-coursework') doctorate. In 2001 virtually every Australian university has one or more professional doctorates in fields such as Education, Health, Psychology, Business and Creative Arts. The term 'professional doctorate' is often undefined and taken-for-granted but typically it can be said to encompass doctoral programs that are designed to serve the interests, contexts and circumstances of professional [3] people. Therefore, the programs usually are designed with part-time candidature in mind, draw upon the researchable questions, issues or matters from the field in question, and expect the thesis and its actual and potential research outcomes to be adjudged in terms of significance to this field. To the extent that the candidates represent highly skilled 'knowledge workers' in both the 'old' and the 'new' economies, then their 'research training' is 'upskilling' them to create and apply new knowledge in those economies.

It is noteworthy that professional doctorates have sparked a range of scholarly interest and concern over the past five years. There have been: several publications (for example, Brennan & Walker, 1994; Evans, 1997; Green, 1997; Green Maxwell & Shanahan, 2001; Trigwell et al. 1997); a number of conferences on the topic organised through staff at the University of New England; and a set of guidelines produced by the Council of Australian Deans and Directors of Graduate Studies (Council of Deans and Directors of Graduate Studies, 1998). What this work shows is a serious consideration of the issues involved in developing professional doctorates in Australia. Likewise, there are emerging debates in the literature and at conferences about doctorates in general, doctoral pedagogy, supervision and examination (Evans, 2001; Lee et al. 2000; Maxwell & Shanahan, 2001; McWilliam & Taylor, 2001).

Australian writers, such as Brennan (1994) and Lee, Green and Johnson (2001) or overseas authors, such as Bourner, Bowden and Laing (2001) and Smyth, Allen and Wahlstrom (2001), demonstrate in somewhat different ways, there are arguably more fundamental pedagogical, research and practice relationships being pursued or changed within many professional doctorates. Indeed, Green, Maxwell and Shanahan (2001) are of the view that a 'new generation' of professional doctorates is emerging which embraces new ideas about doctoral pedagogy and research to reflect the needs, interests and contexts of professional doctoral candidates working and researching their professional practice.

The consideration above of professional doctorates illustrates that over the past seven or more years there have been major changes to doctoral programs in Australia which have important potential impacts on the ways and places in which research training and research is conducted in the new economy. A key aspect of these new programs is that they usually foreground part-time study, whereas the traditional PhD foregrounds full-time study. It is arguable that, irrespective of whether they are enrolled as 'off-campus' or 'external' students or not, most professional doctorate research is conducted outside of the academy, in the workplace or professional context. Conversely, most PhD full-time study is conducted by 'on-campus' or 'internal' students working within the academy, although in many disciplines fieldwork is conducted outside its walls.

DETYA figures show that in 1998 41% of research doctorate students were studying part-time. Although a few may have been studying part-time and not working, most can be assumed to be employed. The proportion of part-time to full-time students in the professional fields of study is 47%.[4] Therefore, it can be seen that at best a slight majority of research doctorate students conform the 'traditional' conception of the full-time student in terms of enrolment type, but that there is a large minority (41% in 1998) who do not. This large minority is ignored in the most recent major Australian Government policy document on research and research training (Kemp, 1999b) despite the evidence in the previous year's (1998) DETYA figures which, one assumes, the authors would have had to hand and reviewed.

The Government is not alone in ignoring the rise of part-time research students in Australia. In many respects universities, students' associations (to a lesser extent), industry and the professions have not taken full account of the significance of part-time students. Therefore, these agencies have either not being lobbying government on matters associated with part-time research students when research training is under review, or have only been doing so relatively weakly. In particular, universities have tended to make only minor adjustments to their supervision, administration and support practices for part-time research students. Other than in some of the professional doctorates, there is generally little specific tailoring and enhancement of programs to attract and support part-time students. The reasons for this are probably concerned with the relative 'invisibility' of part-time students, especially those who are actually or effectively 'off-campus', and the gradual increase in numbers and proportions of part-time students also being relatively 'invisible' from year to year. Given the heightened scrutiny of research training in Australia, there is a good case for taking part-time students seriously in both governmental and institutional policy and practice.

ARE PART-TIME STUDENTS A RESERVE ARMY OF ENROLMENTS FOR UNIVERSITIES AND OF RESEARCH LABOUR FOR THE KNOWLEDGE ECONOMY?

It is common in the new economy to see labour become casualised in many aspects of the public and private sector. Indeed, the rising generation of workers seems to be accepting this fate as if the flexibility that so interests their employers is in their own interests too. In many respects they are what Marx saw as the 'reserve army of labour' to be employed when the means of production required it, and to be sacked when it did not. As has been demonstrated above, part-time research students have increased in numbers, much like the casual workers of the new economy. Like those workers, they remain the relatively poorly resourced research students by their universities and the government (not for them the scholarships, nor often the office and lab space of the full-timers). Some have even paid HECS for their places in the past and full-fees have been mooted, too. The invisibility of part-time students in universities in terms of them explicitly being recognised as having different needs and contexts, and requiring different approaches to supervision (Brennan, 1995; Evans, 1998) has generally been ignored, except in terms of professional doctorates. The full-time PhD students are often said to be valued in universities for their contribution to their universities' research cultures; but what about the part-time students' contributions to the research culture of the workplace and the community? The pressure in the 1990s for universities to expand their numbers of research students contributed to the universities willingness to see enrol part-time students. The emphasis on completions and completion rates in the Government's Research Training Scheme, combined with reductions in places, may lead to these same universities treating part-time students as a 'reserve army' of enrolments that can be 'turned-off' or 'turned-down' to suit the doctoral 'means of production'.

Yet this approach seems fairly short-sighted on the part of those of us in universities because other aspects of Government policy are pressing for universities to have better links with industry and the professions. We are encouraged to foster 'technology transfer' from the academy to industry. In both respects it would seem that by having members of the industry and professions leaping over the academy walls in order to undertake their research training represents a powerful opportunity to recognise that these students *are* industry and the professions. That is, they are people whose working identities and social relations are what constitutes their industry: it is not the buildings, presses, smoke stacks or humming computers, but the people. Likewise, universities are not lecture theatres, libraries, labs and meeting rooms (and multiple, humming desktop computers), but rather they are constituted the complex patterns of social relations that the people (staff, students, visiting scholars) enact. Therefore, if we understand that 'technology transfer', 'university links with industry' etc are actually about social relations—meshing the social relations of the university with the social relations of industry or the professions—then part-time students can be appreciated differently. No longer need they be seen (in effect) as a reserve army of enrolments to help maintain HDR load and to produce new knowledge for the knowledge economy, but rather as very important people who help constitute the life of both universities (as students) and industry or the professions (as employees or employers) as they find their ways in the new knoweldge economy.

This new appreciation suggest that the ways in which part-time students are defined and treated within universities needs to be developed in ways which draw upon, build and sustain the personal interrelationships that students have between the world of work and the world of university. At a basic level this means: encouraging research that fits both these worlds; providing supervision that understands, recognises and values the cultures of these worlds; ensuring examination that understands, recognises and values the cultures of these worlds; encouraging research outcomes and research dissemination that is of benefit to both these worlds. Some of the professional doctorates have made useful steps in these directions, however, there is a prevailing view that they are 'inferior' to the real doctorates of the academy: the PhDs. Of course, the professional doctorates are almost exclusively populated by members of the reserve army and not the 'regulars', and this helps explain their status. (Some of the professional doctorates have also contributed to the weakening of the status by reducing the standards, durations and research (see, Evans, 1998, 2001)).

The suggestions noted above are focused on the individual student and what are the conventional aspects of doctoral candidature. However, on this basis there is scope for seeing that, far from being a 'reserve army', part-time students can be viewed as potential ambassadors and collaborators for research and development within their workplaces. That is, not in terms of their topics or projects for their degrees, but for other, sometimes related, projects and research dissemination. ARC Linkage applications would seem to be an obvious site for developing collaboration, but other joint ventures such as conferences, consultancy, visiting scholars, joint research and development are others. However, what is required is for those of us in universities to take seriously the matter of understanding the worlds of the research student and to appreciate that increasingly it is becoming necessary for universities to be proactive in working beyond the academy in the sorts of worlds that the part-time research students occupy for their full-time working lives.

CONCLUSION

The burgeoning numbers of part-time research students in Australia can be seen to represent a 'reserve army' of higher degree students in universities. They have generally been invisible in government policy on research training, and have rarely been the focus of specific treatment in universities, in comparison with the 'regular army' of full-time peers. However, part-time research students are people who help constitute the world of the university as well as of their industry or profession. It has been suggested that we need to appreciate the potential importance of the part-time students to the ways in which universities can fulfil their responsibilities in terms of technology transfer and links with industry in the new knowledge economy.

There have been important (and some counter-productive) developments that have occurred with the professional doctorates that indicate that people in universities have been taking the matter of research training for part-time students and full-time workers in industry and the professions seriously. However, this work generally is seen as inferior to the PhD in status and, because of its size, the PhD program with its assumed full-time, on-campus orthodoxy has limited the capacity of universities to appreciate the significance of part-time students to their endeavours in rhe new knowledge economy.

It is time for the matter of part-time doctoral students to be made visible and exposed to critical analysis, scrutiny, research and debate. It could well have a significant bearing on the quality of doctoral education and the outcomes for industry, commerce and the professions in the new economy.

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[1] For simplicity, when the term 'postgraduate' is used, it will be taken to mean research postgraduate.

[2] Part-time students here are taken to be those people who wholly or mostly undertake their research degrees enrolled as part-time. There are also some full-time students who complete their degrees part-time, however, such students are not part of this discussion.

[3] DETYA figures for 1998 show that 13,023 (52%) were enrolled in the Broad Fields of Study of 'Arts, Humanities and Social Sciences' and 'Science' and 11, 949 (48%) were enrolled in the Fields including Agriculture, Building, Education, Engineering, Health and Law. One might expect that several doctoral students in the 'non-professional' categories could well be conducting research which is professionally related, for example, in social policy and welfare in the Field of Social Sciences' or in information technology in the Field of Science. These figures are for research doctorates and therefore will include all PhDs and professional doctorates that have two-thirds or more research.

[4] The term 'profession' and its derivatives are used in this chapter in an inclusive sense to capture occupations which require a degree for entry and which may or may not be regulated (by government) or self-regulated (through a professional body). It is usual to see a profession as being regulated or self-regulated so, in this sense, the professions and students encompassed in the range of Australian 'professional doctorates' include students (such as artists, business persons or bureaucrats) who are not always professionals (such as architects, teachers or lawyers) (Evans, 2001) p.276.

[5] Part-time students are typically enrolled as half-time students, so enrolment load figures in an institution will reflect this difference. The argument here is based on the numbers of people enrolled as doctoral candidates.

THE REFLECTIVE JOURNAL IN POSTGRADUATE EDUCATION

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ABSTRACT

Postgraduate research has been compared to exploration of an uncharted island that takes the student through desert wastes, high mountains, along, narrow tracks on an explorative journey (McLaine, 1995). We may wonder whether the purpose of the journey is making a discovery (creating new knowledge) or developing the meta-skills required in the explorations (training in research practice). Traditionally the thesis is used as evidence of both the discovery made and the journey undertaken – where information literacy, written communication and other general research skills must be demonstrated. Further evidence of successful research is the time taken to thesis completion. However, there are important questions about (a) what is appropriate assessment in research degrees – both in monitoring student progress and final outcome, and (b) what are appropriate learning processes – which is crucially related to what is the perceived purpose of the research degree. In this paper it is argued that a personal reflective journal operates both as (i) a tool for learning—as the researcher reflects upon domain knowledge, research strategy, personal study habits and just about anything else 'relevant' to the journey and discovery, and (ii) a contribution to assessment—as the supervisor is able to track the thought developments, experiences and general 'progress' of the candidate. The reflective journal is valuable whether the purpose of the degree is to discover new knowledge, or learn research practice – it is a dual learning technique and assessment strategy.

INTRODUCTION

QUALITY IN POSTGRADUATE RESEARCH

Accountability in universities became important in the 1960s and 1970s. Much time was spent defining 'quality' and particular difficulties have emerged in higher education when trying to document and measure quality in research (and teaching). Quality for one stakeholder may mean something very different to quality for another but since the 1980s the government has introduced a number of measures designed to document and evaluate quality including external reviews, performance indicators, funded projects to improve quality in teaching and learning and other. Research assessment exercises very quickly led to funding being related to quality (Wilson, 1996) and research within universities has become a managed strategic activity maximising returns according to how 'quality ' is measured – whether in number of publications, grants awarded, type of publication, number of research students, completion times of research students or other.

When we consider the quality in postgraduate education a number of questions are raised including how that quality might be measured at government, institutional and personal levels. The longstanding debate about whether the value of the research degree lies in its outcome (new knowledge) or in the process (training in research practices) does not simplify the process of measuring quality. Neither does it simplify the issue of how supervision should be conducted – whether it is teaching process or more a conversation and mentoring process. Completion in research higher degrees has perhaps always been a crucial indicator of success. A summary of findings about student completion rates in a review by University of Technology, Sydney (DEETYA, 2001) found there were a multiplicity of factors affecting completion that could be classified as institutional environment,

individual supervisory arrangements and student cohorts and characteristics. There was a significant difference between disciplines in terms of what was useful in influencing completion (e.g. part of an established critical mass team is vital in some disciplines).

TYPES OF JOURNAL

Before we argue for the use of a personal reflective journal in postgraduate assessment and also in learning approaches to teaching postgraduate studies, we shall review the nature of the journal. There are many different types of journal. A classification has been made by Mount Mercy College (MMC, 2000) where several different types have been identified including:

- Personal Journal - diaries of thoughts, activities, emotional responses, records of daily life
- Response Journal - response to a piece of literature; an event, series of events or experiences
- Learning Logs / Descriptive Journals - informal summaries of what has been learned; sometimes detailed accounts with knowledge and opinions specified
- Dialogue Journal - space for two persons (two students, student and teacher, etc) comments about assignment, event, etc in response to one another
- Double Entry Journal - space for the initial comments with adjacent space to comment again after reflection or a specified future time
- Reading Journal - a place to summarize and respond to readings done for classes, personal and academic interest, paper or assignment preparation
- Writer's Journal - a compendium of observations, thoughts, insights etc recorded over time in preparation for a project. It may be in preparation for a class assignment or paper, a poem, piece of fiction or non-fiction or any other creation

To this list we would add the reflective journal. Reflection provides opportunity to learn from past events, experiences, cases, approaches and other by making a personal interpretation and observation. Such a journal is distinguished from learning logs, or descriptive journals, which merely detail events and facts with no subsequent interpretation. The activity of reflection promotes a deep learning which as Entwistle (1997) describes stimulates a focus upon understanding ideas and not merely repeating information, and can lead to questioning course content and a meta-awareness not normally encountered from more surface-based learning.

The different types of journal create different learning opportunities and learning outcomes. MMC find that these different journals have learning outcomes including improved student skills (a) describing situations, events, relationships, (b) increasing self awareness and the ability to analyze ones own feelings, (c) identifying and 'verbalizing' one's existing and newly acquired knowledge, (d) synthesizing and integrating information more succinctly, (e) assessing, and making judgments, evaluating events in one's life and educational activities, (f) developing new, additional or alternative perspectives on relationships, interactions and events, (g) personalizing the educational experience (lab, clinical experience, practicum, discussion group) and knowing better what is being learned, (h) fostering the establishment of linkages between theory, research, observations and experiences, (i) communicating what is being learned and to assess the value of particular experiences and (j) appreciating their own learning, growth and self awareness.

JOURNALLING IN UNDERGRADUATE CONTEXTS

There is a long history of the reflective journal being widely used in the humanities. This is particularly true in the case of professions that require some practicum experience such as education, nursing, social work and pastoral care in religious ministry! It is only recently that the reflective journal has been used in scientific disciplines. Houssman (1991) identified learners who are aware of their meta-cognitive processes are more proficient learners. Biggs and Moore (1993) point out they are more likely to plan, to use strategies for learning, to monitor progress and to evaluate.

MacCallum and Hickey (1997) were perhaps one of the first to report the use of the reflective journal in science where it was used to improve communication skills. Noblitt and Pochis (1997) show that the journal is a valuable method of engaging students with deep learning of a subject. Fairholme, Dougiamas and Dreher (2001) specifically report the use of an on-line reflective journal at Curtin University for students of the electronic documentation stream in Information Systems majors. Among other things they aimed to stimulate reflective thinking in project teams and achieved high participation rates, students improving during the semester and sought ways to measure success of the journal. Kelly (2001) reports the use of the journal among first year tertiary education students of engineering at Queensland University of Technology where the aim was to engage students in their own learning and help them develop writing skills.

George (2002) reports the use of the reflective journal for improving problem solving skills in tertiary computer science linking the reflection with the Personal Software Process (Humphreys and Watts, 1998) moving towards articulating the 'working' behind the 'right answer' in computer programming. This reflective journal had two main sections where students are to reflect upon both practical programming exercises and weekly lecture material (including lecture exercises and readings). Being aware of and articulating their cognitive processes in problem solving has potential not only to enable the student to explain their solution to others, but also enables others to observe flaws in their reasoning and aid their progress. Also required with the practical reflections were listing of programming work that students had attempted.

However, there is less tradition for the use of the journal in postgraduate education - especially if the discipline is scientific. This paper does not intend to provide a definition of science. Philosophers of science have distinguished science from pseudo-science in that science appeals to empirical support for a theory. Popper proposed that to be scientific a theory must be falsifiable – that is there is some statement that if shown to be true will show the theory to be false. Informally the usage of science in this paper encompasses disciplines that are highly numeric and logical, that require problem solving skills applied to engineering solutions and of course the software equivalent of such 'theories' (as found for example in computer science) that are empirically tested.

The learning outcomes of a journal are valuable for both the 'journey' and the 'discovery' of the research. Learning outcomes are not only relevant to undergraduates but to any stage of education. Learning outcomes entail generic skills - such as lifelong learning, ability to communicate, problem solve and undertake ethical behaviour. These skills are among the 'graduate qualities' of universities today representing the qualities that students should have attained from having successfully completed their program. They represent the desirable qualities for any level of graduation – not just the graduate. One longstanding debate in higher education literature is whether supervision is teaching and whether we can think of learning outcomes from such a process. Clearly there are certain skills that a research student should master.

THE LEARNING PROCESS: POSTGRADUATE JOURNALING

GENERIC SKILLS AND THE JOURNAL

There are a number of skills a postgraduate researcher ideally acquires including: written communication, divergent thinking, awareness of meta-study skills, ability to evaluate alternatives and make strategic decisions to select a topic or direction within a topic, ability to self-motivate, review literature, make a research proposal, collect data, write a literature review, and to use the conventions of citation and critique for their particular discipline. The researcher may also have to maintain motivation during periods of autonomous work in isolation, undertake self-evaluation as well as collaborate, building networks of colleagues and associates, possibly working in a larger research team.

Importantly the ability to reflect on research investigation has been identified as a postgraduate skill and being critically reflective (Moses, 1985). Typically the postgraduate (especially in scientific area) would have had no exposure to reflective practice from undergraduate perspective, and may not even be aware of the idea of a

reflective journal, yet alone encouraged to use one or informed of it as an optional study method. Thus, it would be an unfounded assumption to conclude that postgraduates (at least in science) would naturally use a journal. There would clearly have to be some input to the student about the existence of journals and the role that they may play.

Clearly the reflective journal cannot directly influence and contribute to every possible research skill that a student may need to acquire however, it can aid self-awareness of the current state of that skill and if necessary what can be done to improve those skills – whether it is written or oral communication ability, information literacy or study motivation or any other generic faculty that the student may be interested in monitoring and developing. The journal can record their experiences, their reflections on that experience and what to do the same or different next time with everything from a conference presentation to experimental method. There are also many skills to which the journal can contribute – such as writing and ability to communicate complex ideas. The thesis has traditionally been the main learning experience for writing and communicating research results. The production of a thesis, or even a chapter thereof, can for some students seem an insurmountable hurdle which is forever put off despite supervisor intervention. This is less likely to be an issue in disciplines of 'letters' but mathematicians and scientists and computer scientists and other related disciplines have students (undergraduates do not transform in nature once they have graduated) that are notoriously poor at communication, and some 'remedial' work may be necessary to address areas of literary weakness.

Writing a journal, especially after supervision meetings, may help the student to maintain motivation, direction, purpose and relieve negative emotions such as frustration, boredom, disillusionment, irritation and others that may hinder progress and otherwise make it hard for the student to undertake productive work. Students can often experience frustration especially in the supervision style that is more 'mentoring' and they are looking for a 'teaching' style. They may wonder what a meeting has achieved, how their progress is going, what should they do next and find no direct answers from their supervisor. Many negative emotions may be experienced which left unidentified, in certain students, could significantly disturb progress. A forum where they must identify such hindrances, interpret and understand factors affecting their study may enable them to maintain motivation and make better progress than a student where there is not a goal of reflective journal writing.

What of the negative aspects of journaling? The task of journal writing could become too much of a burden for a student working in a language that was not their first written language with undue amounts of time spent on correctly articulating rather than either 'doing' or 'reflecting' In these instances it is possible that some compromise can be made so that the student was not swamped with a writing task over everything else. It is also possible that students working in their own language also find written communication particularly tedious and it may not come naturally to them. They may find the workload undue. This argument about the amount of time required for the task is only negative when the purpose of the research goal is perceived as ultimate production of a thesis and new research result. Otherwise, the maintenance of a journal becomes an integral part of the research experience – as important as literature review and data collection.

RESEARCH DISCOVERIES

We also see that the reflective journal has value in the nitty-gritty of new research discoveries as the student keeps systematic records of what was done and why, considers alternatives and basically monitors their technical progress. There is evidence that reflection encourages divergent thinking—as possibilities are considered, alternatives evaluated and knowledge reflected upon. Encouraging divergent thinking can stimulate the type of lateral thinking that is often required in generating a genuinely new piece of knowledge in the research discovery. Journaling may also assist recognising a phenomena as a new piece of knowledge—in a way that may be easy to miss if there was not the discipline of articulating and accounting for daily or weekly, monthly or yearly events. Some students may easily dismiss discoveries as not significant enough—but the act of writing why they are, or are not of value, can force them to articulate and recognise their true significance.

Divergent thinking is often neglected in disciplines, such as computer science, which are frequently associated with more convergent approaches to learning. Students in such disciplines may particularly benefit from a fresh

approach, although the most resistance is likely to be encountered as well; and the exercise maybe perceived as 'irrelevant' to the task in hand of making a discovery, writing a piece of software, or otherwise demonstrating some technical competence. Using a journal may very well make a field more accessible to students with different learning styles and gender biases may also be eliminated as minorities

THE ASSESSMENT PROCESS: SUPERVISOR ASSESSMENT

MONITORING PROGRESS

A reflective journal produced by the student certainly has value in monitoring student progress—for both the student and the supervisor. The student themself may find that the journal keeps them on track on a daily or weekly basis. The discipline of recording what was done for a few minutes at the end of each day, reflecting on that periodically and becoming aware of their progress, or lack of progress, is a valuable self-assessment tool. The supervisor is also given an account of events in certain time periods as the student demonstrates what was or was not achieved in those periods and why. The cognitive and emotional processes of the student are made transparent and recorded, in a way which may happen verbally and informally in progress meetings, but which are formally recorded via a journal.

There is always the possibility that a reflective journal can be 'faked' as a student spends a short time writing about fictional events of the past week or month and does not give a true account of progress – yet fulfils the requirement of a document detailing lessons learnt etc. Obviously it would be hard to assess the genuineness of a document for such a student, as it would be hard to truly monitor their progress if more conventional supervision means were employed. In fact it is the journal more than any other exercise, that may eventually lead the student to recognise personal meta-aspects of their self – such as honesty or dishonesty, and even reveal to the supervisor the truth about progress that a student was or was not making and why. There are a limited number of fictional accounts that can be invented as a reason for a given lack of progress.

The trend towards annual and quarterly reviews may reflect a movement towards monitoring progress via a written report that summarises, interprets and traces out progress. Completing such reviews can provide a target for the student and a framework in which to structure their work. The personal reflective journal simply does this potentially on a smaller timescale. It is likely that the journal would be unassessed or at least qualitatively evaluated - where it is graded according to criterion that have or have not been satisfied. These may relate to the actual content of what is written as well as its form (eg is it reflective rather than a descriptive log).

Some may argue that the production of a chapter is evidence enough of progress. However, especially in the early days of research it is hard for the student to conceive of the next step - let alone the bigger picture of what form the final thesis should take. It is hard to see how any student after just a few weeks of research could sit down and write a thesis chapter, but all could sit down and journal experiences – which may indeed be drawn upon at a later date to construct the thesis. Writing a journal is a more manageable task and easier to assess progress – especially in early days.

FINAL ASSESSMENT

It is unlikely that the final assessment of postgraduate research—the thesis—would ever be replaced by a journal (even when the aim of the research is a training process where it would be more relevant to see a chart of personal progress). There has to be some 'product' from the research which the thesis demonstrates.

However, there may be scope for including journaling as a component of the degree award. This may be especially vital when the research is regarded as 'training in good research practice' since the specific items of research practice that should be learnt can be specifically recorded and identified in a journal. Of course it would also be necessary to demonstrate a skill – such as information literacy – and not just write about how it was acquired, since seeing the skill in action, or the results of the skill, would be the best evidence it had been acquired.

CONCLUSION

Some suggestions have been made for how a personal reflective journal can be used both to monitor student progress and evaluate the research conducted, and noted that it has value both when the research degree is regarded as 'training in practice' and as 'finding new knowledge'. So far no stipulation has been made regarding the form the journal should take or when it is used. It is likely that a wide variety of journal types would be valuable – including double entry and descriptive as well as the reflective interpretation that we suggest is useful. It is also likely that it would be useful to keep a journal at regular intervals – such as daily or weekly, and at least as frequently as supervision meetings.

It is likely that constraining a researcher to use a journal will impinge too heavily on personal working styles, however, the idea of a journal may need to be promoted in disciplines where it may not be natural to use. Giving credit in annual reviews for suitable journal accounts may provide incentive to the discipline of writing for students who otherwise are not directly aware of the benefits that such an approach to learning may provide for them.

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GETTING THERE IN THE END: CONTRIBUTIONS TO THE ACHIEVEMENT OF THE PhD

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ABSTRACT

What are the factors associated with success at PhD? How can postgraduate students conceptualise, manage and succeed in their learning? How can situational strategies, support programmes, supervisory dialogues and student networks augment student motivation, flexibility, tenacity, and quality research to enable success?

Action Research carried out with Israeli (η=150) and UK based postgraduates (η=40) (1998 - 2002) is in three stages. Building on previous research and publication on the first stage of the PhD process, this paper will focus on the final stage of the achievement of the PhD. Action research accompanies programme input and supervisory dialogues not merely to evaluate these processes. It is our contention that it offers the opportunity to involve students as partners in the research which encourages them to reflect upon the processes of their own work, and to feed what they learn about their own learning, their conceptual frameworks, and their research processes, back into their own research project, so developing and enhancing their own work.

In the final stages, several factors contribute to the achievement of the PhD:

- student learning approaches and styles, research-as-learning, initial indicators of potential success at PhD and *achieved* success;
- clarity and further clarification and identification / development of conceptual frameworks, research methods and *outcome achievement;*
- the contribution made to that *success* by support and development programmes, student networks, and supervisory relationships.

INTRODUCTION

> *Doing a PhD is really a very lonely job, you feel like you are on an island.*
>
> (PhD Student)

Carrying out research for, and successful completion of, a PhD is a long-term project. It involves students in: developing their learning approaches, where research is seen as a form of learning; developing certain personal strategies such as tenacity, managing time and stress, seeking and making the best use of support by family and friends; making good use of research development support programmes, supervisory relationships and the appropriate institutional strategies and practices.

As a team working with PhD students, we wanted to discover the development and success factors in each of the above areas in order to provide information, support and advice to students and staff involved with PhDs. The team of three, including the programme director, the three stage research development programme; conduct supervisory dialogues with all the Israeli students in the programme; act as 'guardian supervisors' to the cohorts (the particular *ongoing* role of the programme director); directly supervise individual students whose research areas are in alignment with our own (eight students each across the 1998-2001 cohorts to date) and carry out the action research with the students as collaborative partners.

The research development programme, coupled with supervisory dialogues, both refined and focused as a result of action research, are, it is argued, supporting and empowering students throughout their research work. The three stages of the programme relate to three stages in the students' work i.e. their initial development of conceptual frameworks and choice of appropriate methodologies and methods for their PhD research (stage 1); the carrying out of, management and maintenance of clarity and momentum in their work and confirmation of candidature (stage 2), and finally, the completion of their PhD research, writing and presenting their thesis, and their preparation for success in the viva (stage 3). Both the research development programme and the supervisory dialogues are intended to support and enable PhD students to succeed in their PhD research, completing the thesis and defending it in a viva. As a developmental process, both programme workshops/inputs and supervisory dialogues aim not only to help students establish conceptual frameworks, maintain momentum and direction and achieve their PhDs, but also to address various difficulties, problems and any dissonance identified in their work. (Dissonance is defined here, based on the work of Meyer, 2000, as a disjunction between research-as-learning approaches taken, and intended outcomes).

Research reported here builds on earlier and ongoing action research carried out 1998-2002 (Wisker, Robinson Trafford, 2000) with (η=150) Israeli and (η=40) UK based PhD students whose research disciplines range from the social sciences and health, to the arts and humanities and, in the case of the Israeli students, some scientific areas, particularly sports science. The breadth of discipline areas studied by the students in our research suggests that findings related to support and development processes, reported here, are generalised across a broad range of disciplines. This is not of course to argue that the processes of students' research, their methodologies, research, paradigms and methods are the same across the disciplines. There are substantial differences between scientific, social science and arts/ humanities projects in terms of epistemology, research as learning processes and even the shape of the final thesis (Wisker, 2001). These differences are not properly the focus of our study as reported here. Rather this study concentrates on generic and generalisable support and development processes and interactions and their influence on the PhD students in our study.

Early reporting of the ongoing action research has concentrated on PhD students beginning to undertake their research (Wisker, Robinson Trafford, 2000). This paper focuses on their work towards completion and success or otherwise of both research and the thesis, followed by achievement of the PhD. Our full action research project involves the use of the Reflections on Learning Inventory (RoLI, Meyer and Boulton Lewis, 1997), the Research-as-Learning questionnaire (Wisker, 1998), supervisory dialogues/ interviews and focus groups. Early work indicates that some students take initially problematic learning approaches to the PhD. Specifically, some students exhibit dissonance between accumulation approaches to study and transformational outcomes. Additionally, some experience problems throughout their work related to negative post-modern (Hodge, 1995) approaches of excess, unstructured information and relativity, leading to difficulty in management of the postgraduate learning process and of the PhD research and process itself.

Completion of the PhD is properly the study of this paper.

Problems can emerge during and towards the completion stages of the PhD research in the shape of difficulties in several areas, and principally with:

i) management of data and analysis;

ii) the drawing of conclusion;

iii) writing of the thesis with a clear conceptual framework underpinning the whole;

iv) defending the research and thesis in a viva with the same clear conceptual framework, a sense of boundaries, decisions and links between aims, theories, methods, findings and conclusions.

Previously (Wisker, Robinson and Trafford, 2000) we identified potential dissonance between accumulation learning approaches and transformational outcomes. It is a contention that postgraduate students need to recognise and overcome such dissonance in order to be successful in study at postgraduate level.
Our work involves both student learning approaches where research is seen as a form of learning, and the learning relationship between students and supervisors, which in our work to date we have located as taking place (among others) in supervisory dialogues, although future work will look more broadly at the supervisory relationship face to face, at a distance, over time. Supervision is seen in our work as a form of teaching.

Supervisory guidance for postgraduate students has become an important research area in the last few years, as numbers of international students at postgraduate level increase (see Meyer & Kiley, 1998). The supervisory relationship is the primary one for ensuring a wealth of personal and cultural issues or experiences are addressed as much as for ensuring that students are guided *and* empowered to be autonomous learners engaged within a topic sufficient to gain an MPhil, Ed D or PhD (see Philips and Pugh, 1994; Asplund and O'Donoghue, 1994; Brown and Atkins, 1988; Delamont and Eggleston, 1983; Lowenthal and Wason, 1977; Wason, 1974; Wisker in Wisker and Sutcliffe, 1999; Wisker, Robinson and Trafford, 2000). For international students in particular, different levels of dependency and need are also significant factors. Supervisory dialogues form part of our research and also part of the research development programme activities with which students and guardian supervisors/supervisors are involved.

CURRENT RESEARCH

Current research discussed here is with students who are completing their PhDs, a sub-set of the overall numbers (noted above). They comprise two groups of Israeli PhD students (2001 η= 24; 2002 η= 17); a small group of UK based PhD students studying for English related PhDs (η= 5,) in the final stage of their work and students who have successfully completed their PhD (5 in all, 4 Israeli students, 1 UK).

We focus on students' responses to support and development under three main categories which have emerged through evaluations, focus group discussions in the third stage workshop, and informal discussion with those who have gained their PhDs:

(i) **Learning**: the development of research-as-learning practices, conceptual frameworks, methods and analyses etc. during the PhD study period which lend themselves to postgraduate level study success;

(ii) **Personal**: other relationships with friends and family, stress and time etc management activities;

(iii) **Strategic and Institutional**: formal research programmes, supervisory relationships.

METHODS USED

Success at PhD is partly enabled by students developing suitable research-as-learning approaches, and clear conceptual frameworks appropriate to their study. Our action research involves the students themselves as collaborators. Reflecting on emerging data on their own learning approaches and research processes can cause discussions about those approaches and processes, problems they might produce, ways of overcoming these problems, and reasons for the different choices made by students' colleagues. We use both *quantitative and qualitative* methods because they enable us to capture a range of data about student learning approaches; learning from the research development programme; learning through supervisory dialogues and other factors which help students maintain their research in a focused manner, towards successful completion.

The third stage of the research development programme aims to support, enable and empower students preparing to write up their PhDs, to submit them and to undertake their viva. Students in the third stage research development programme receive written informative and interactive materials, formal and interactive inputs including workshops and supervisory dialogues enacting a mock viva.

Action Research methods and linked activities, parts of the final stage programme include:

- The RoLI questionnaire (repeated from stage 1) to compare data from the beginning of the PhD process in the first development programme stage, to the end of it in the third programme stage;
- Workshop focus groups reflecting upon the development and clarification of conceptual frameworks, links between aims and outcomes, theoretical perspectives, methodology and methods, analysis and findings, conclusions of the research, writing up, viva preparation;
- Individual and supervisory dialogues towards the end of the PhD process - to identify developmental and decision making moments, positive and supportive strategies and practices, identification and overcoming of hurdles in the students' postgraduate work;
- Mock vivas with students completing their PhDs;
- Individual interviews (semi-structured open ended self- interviews which are taped) with students successful in PhD's to identify factors which have contributed to this success.

We use *inventories and questionnaires* (RoLI and Research-as-learning) because we need statistical data about student learning approaches to be able to discuss these approaches with the students themselves in terms of both their appropriateness for PhD level work, and for the particular research outcomes the students have planned. This data also helps identify potential dissonance between approaches and outcomes and signals those 'at risk' of taking learning approaches unlikely to enable the achievement of their planned outcomes, and learning-as-research i.e. postgraduate levels of learning.

We use qualitative methods of *focus groups* and supervisory *dialogues* (transcribed and analysed using Nvivo) because these enable us to capture students' responses to, reflections on and awareness of their learning approaches and processes, the fit (or otherwise) between approaches, research methods and practices, the problems met, risks taken, discoveries made during the course of their research, and strategies developed for handling these, and their own views about how they are enabled to complete their PhD research and thesis.

With the Israeli PhD students we matched completions of the RoLI in 1998 and 2001, to determine whether students whose initial responses showed that they were taking largely accumulation approaches (mostly using questionnaires to collect quantitative data) but seeking transformational outcomes i.e. outcomes related to changing behaviours, attitudes, had (I) changed their learning approaches from accumulation approaches to meaning oriented approaches, more suitable to postgraduate work and (II) whether they had changed their learning outcomes, modifying the often unrealistic and over ambitious (for PhD study alone) transformational outcomes.

In *supervisory dialogues and interviews* we asked for students' own views of what has or has not enabled them in their research-as-learning, and for information about the development of conceptions of research, including subject related processes of learning supporting the achievement of postgraduate learning outcomes. To discover how students have benefited from supportive structures and cultures, (and their strategies for managing problems associated with lack of support from these structures and cultures), we conducted focus groups, interviews, supervisory dialogues and programme evaluations which include responses in relation to categories of *Learning, Personal,* and *Strategic*.

We consider students' experiences of the processes of and success in the viva. Part of the research development programme and our action research focus are mock vivas. These are greatly aided by preparation immediately before the viva to ensure ownership of arguments and conceptual framework of the thesis, its boundaries and its claim to achieve postgraduate outcomes (see Winter, 2000).

SOME RESULTS DISCUSSED

The RoLI comparisons from 1998-2001 indicated that some students had modified their learning approaches to decrease their accumulation approaches and their transformational outcomes i.e. they reduced the observable dissonance in their learning. This was noticeable among the group as a whole when we look at item averaged mean scores, grouping results from questions ABCEFI (accumulation oriented learning) PQ (meaningful oriented learning) and XZ (transformational outcomes)(see Figure 1). It was particularly the case with those remaining students whose initial responses to the RoLI (1998) indicated problematic dissonance which it was considered placed them 'at risk' of not achieving postgraduate research outcomes (see Figure 2).

Figure 1 RoLI 1998-2001 Whole Cohort Differences in Item Average Mean Scores, All 3 Categories ABCEFI(accumulation approaches), PQ (meaningful learning approaches), X (transformational outcomes)

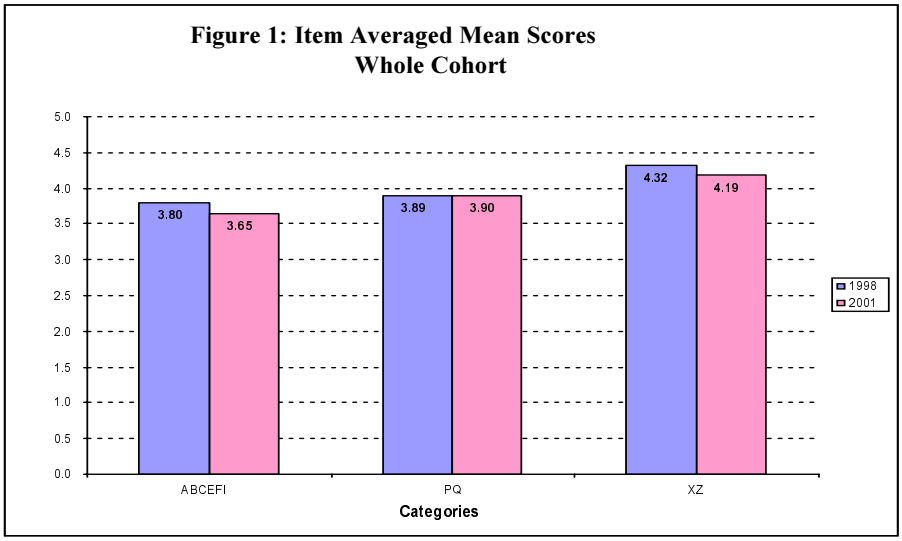
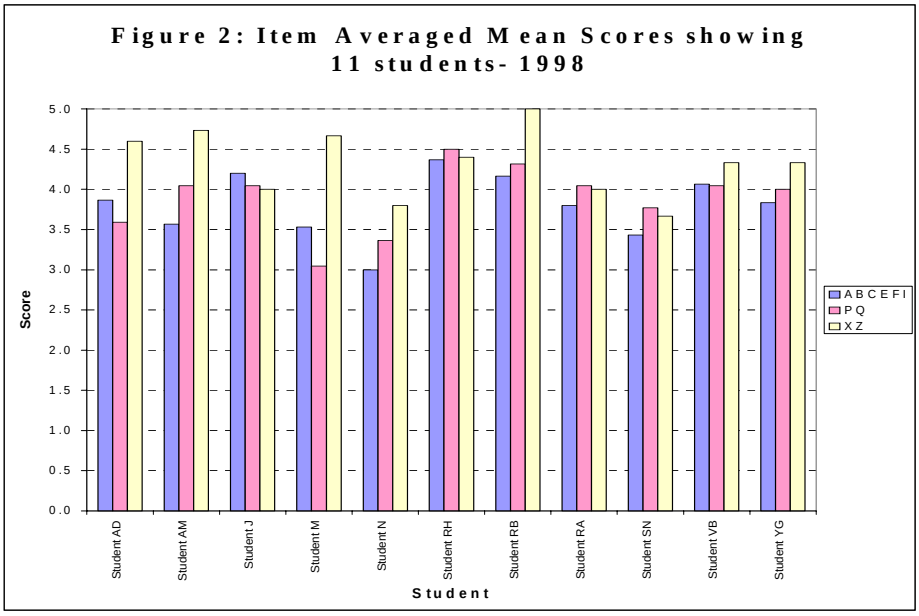


Figure 2 RoLI Item Averaged Mean Scores 1998, Indicating 11 Students Who Are at Risk Because of Potential Dissonance, Particularly Students RH, VB, RB, J.



Individual students are discussed below, accompanied in some instances by supervisory dialogues, interviews or mock vivas.

Supervisory dialogues, part of the research vehicles used and part of the support for learning during the research development programme, have yielded information about the kinds of interactions with which supervisors and students are involved, what kinds of response students make to different kinds of supervisory interventions, and some information about how interventions and dialogues can support students in reflecting on and actively learning about their own research as learning. These dialogues map and encourage the students' awareness of developments in research-as-learning, their use of the research development programme, of interactions with supervisors, and other factors which are helping them in their learning and their completion. They also provide examples of supervision as a form of teaching in action, showing supervisors moving through a variety of interactions within a single supervision, encouraging and clarifying, enabling students to move on in their work.

Similarly, mock vivas with students nearing completion of their PhDs and individual (interviewer led or self led) interviews with students who have completed their research and gained their PhDs are also transcribed and analysed. These reveal awareness of *learning*, use of the programme and supervisory interactions-*strategic*, and the kinds of *personal* strategies and support which have helped students towards and through completion.

Reflection through interviews, focus groups and dialogues helps students recognise processes which suit research paradigms within which they are working, and which enable them to approach their research subject(s) and object(s). It helps in overcoming difficulties, ensuring clarity and ownership of conceptual frameworks and conceptual findings. During the research development programme and in the accompanying action research, we focus on students' experiences of preparation for writing up and for the viva, including issues of checking protocols, ensuring coherence, overcoming problems with presentation such as writing style, language used. Of particular importance in both writing up and the viva is structure, 'telling the story' and 'writing the journey' as well as making the conceptual framework clear.

These interviews and dialogues also yielded information about how students have benefited from personal strategies including the support of friends and family, the managing of stress and time and related practices.

THE THIRD STAGE PROGRAMME TOWARDS PhD COMPLETION: WORKSHOP ACTIVITIES

In one of the final stage workshops, we focus on research methods and conceptual frameworks. Students are asked to identify and defend their conceptual framework. This involves looking closely at their choice of research methodologies and methods and identifying where, why and if they have found their initial research methods have enabled them to ask their research questions and if they have had to change or augment their research methods. At this point, our action research revealed several students, initially exhibiting dissonance between accumulation approaches and transformational outcomes, who were now recognising that their methods had had to develop to better suit and achieve their outcomes. Others recognised that their transformational outcomes were too grand to be a realistic, manageable part of the PhD process itself and tempered these outcomes to make them more achievable, or to make the PhD only a stage in the achievement of the final outcomes, indicating further work and the putting of findings and conclusions into practice. Some of this is revealed through the use of supervisory dialogues.

THIRD STAGE SUPERVISORY DIALOGUES

In final stage work with students, the final workshop aims at developing the thesis and preparing for the viva. Students are asked to indicate crucial change moments for them in the course of their research. In so doing it is hoped to enable them to reflect on the importance of development, on the significant changes they have made and how their learning ideas fit into the overall critical framework of the research as a whole. Facing up to and identifying the effects of critical incidents moves learners on.

Specific supervisory dialogues help students to clarify, shape and identify gaps in their conceptual framework. Several students construct the shape of a thesis in a rather fragmentary way. Aims and outcomes followed by an introductory and contextual chapter lead into what is often termed a literature review which should establish the theoretical perspectives underpinning and driving the whole thesis. In some cases this seems to be rather a free standing record of all that has been read, lacking in internal dialogues between theorists and the ideas and work of the students themselves. Frequently students lack engagement with boundaries and choices - and need to explain why they choose some theoretical frameworks and perspectives over others, choose methods and methodologies over others, explaining how these act as vehicles for them to ask their research questions while others could not achieve this purpose.

Supervisory dialogues and mock viva questions in the third stage of the research development programme focus on these gaps and encourage students to identify the future work needed to provide a more coherent PhD. Often such gaps are the result of inappropriate methods, or working in a fragmentary manner in the context of full-time paid employment and family and other pressures. Sometimes they are the result of having not fully internalised the ways in which theory and methods dovetail and flow from each other and then act as a scaffolding to interrogate findings from data and fieldwork in order to interpret, summarise, analyse and draw conclusions from these findings. The dialogue shape in the supervisory dialogues aimed at providing a mock viva encourages cohesion and the identification of further work necessary. It also encourages students to articulate their arguments and the links between elements in the conceptual framework and to engage in collegial discussions.

Based on analyses of supervisory dialogues from our earlier research (Wisker, Robinson, Trafford 2000) supervisory questioning themes have been divided into ***ten*** intervention categories, developing and drawing from John Heron's 'six category intervention analysis' (1975):

- Didactic
- prescriptive
- informative
- confronting
- tension relieving/social
- eliciting
- clarifying
- supporting
- summarising
- collegial exchange.

Dialogues, below, show students clarifying their conceptual framework. In Dialogues (A) and (C) the students focus on underpinning themes and in (B) on the conceptual framework itself.

DIALOGUE A

S=Supervisor	A=Student
S	And at the moment, each one of the chapters is a patchwork text of a lot of historical, real in-depth scholarly historical detail and some more generalisations and not quite enough historicist or feminist theory writing through. Sometimes, that's used to start the chapter but then you get bogged down in the details and the theory then kind of disappears from your analysis. *informative*
A	I think part of the problem is because I'm looking at my details as speaking for themselves as an exemplification of the theory.
S	For the reader, you have to make it really straightforward that that is what you're engaging with. But, I do think that you need to say up front that you're taking these 3 approaches. *Prescriptive.*
A	Um, maybe, to me though, to me it's just obvious that after I've explained what the theory is that I'm going to be using in that particular chapter and why, and then using my examples to show how the theory works.
S	Well, you probably need to keep, you know, conceptual frameworks stuff, keep telling them. Keep telling them. *prescriptive*
A	Then I get into the problem of repetition.
S	No, the repetition is within individual sentences, or between sentence and sentence, or where you haven't clearly said, at the beginning of the chapter or within a paragraph, you haven't clearly said once what you're going to say, you ramble round it a bit. That's the kind of repetition. *Clarifying.*

In this dialogue the student is clarifying her/his theoretical perspectives and how to reflect these in and throughout the thesis as a whole. Through the supervisory dialogue, the student becomes aware of the need to be absolutely clear in their highlighting of intentions, theories and methods in their thesis as they write it up.

DIALOGUE B

Supervisor = S	Student = B
B	Now, I want, I heard this conceptual framework so many times. Many people talk about it and now I want, I will deal with it, but I want you to tell me what are the main motives that's supposed to appeal in the answer to this question?
S	They want to know how the theories that you're using help you ask your question and underpin your investigation, so you're using things to do with educational and social theory.
	Clarifying, informative
B	Yes.
S	OK, so now.
B	OK, because conceptual framework is something that's very difficult to translate, so it's very difficult for me to really understand the meaning of this question.
S	Framework of ideas, methods, strategies. OK, so what is it, why did you pick the theorists that you've picked. ? *clarifying, eliciting*
B	I, actually I was looking for a theory that is support my own belief.

This supervisor and student are clarifying the need for a conceptual framework and exactly what this means in the student's work.

DIALOGUE C

S = Supervisor C = Student

C	Have to look at the individual's makeup, which is why for some people, Tai Chi might work, other people it won't. But, if it works, I'm positing a certain development within them. Again, everyone has his own individual makeup and that lends itself, or is backed up by the theoretical.
S	That is a very full answer and it shows that you have a grasp of the topic which is another essential part of your research capability really, and I'm really happy to hear that because it shows that you know the main theories and that you can link them and you can explain them. *Supportive, informative.*

This student clarifies theories underpinning their work, to defend in the viva.

OVERCOMING ACCUMULATION/ TRANSFORMATION DISSONANCE

Earlier it was noted that the RoLI identified students 'at risk' because of taking accumulation approaches to research-as-learning coupled with transformational outcomes. Over time, some of these students (six identified in 1998) have shifted this conceptual framework of research which has undercut the dissonance and, we hope, will provide a sounder base for successful completion.

One third stage supervisory/ facilitative dialogue focusing on an 'at risk' student serves to indicate student perceptions of avoiding dissonance. Student D's research was highly transformative in outcome, accumulative in method. During his 3 years work he met hurdles to effective data collection because of the political context. Identifying difficulties of using accumulation approaches to enable transformative outcomes helps him clarify the importance of his intended outcomes; the limitations of his methods in enabling him to acquire necessary **sensitive** data. He is moving away from accumulation towards more meaning-oriented approaches and sees **his** research as a significant step, a move **towards** solutions, not solutions in themselves i.e. transformative outcomes are largely outside the PhD's scope.

DIALOGUE D

(D = student J in figure 2 above)

S = Supervisor D = Student

D	It's important because it helps to solve the main problem in the sector Arab. Because, the fact is that there is a gap, and I one of the people who try…because I am principal of school, try to help by this research, to give opportunity to people to decide to think about the role of education. And also, and the Knesset and other places.
S	So it should cause effective change. The end of the research…*Supportive, eliciting.*
D	I hope that the end of the research, maybe, give ideas about how to solve this problem. Maybe that this research may solve the problem. Maybe help.
S	In itself it won't, because it isn't making cultural change, but it should inform because other people will learn from your research. *Informative, challenging.*

In the interview above, there are a variety of interactions. The supervisor at times challenges and this helps refine and clarify. The student notes that continuation of the research is affected by the political situation. Then the discussion moves into recognition that questionnaires themselves, although they (or rather because they only) collect data, cannot provide the impetus for change.

Dialogue D (contd.)

S	Now let me re-phrase it. Could it be possible that questionnaires will collect things people are doing and their opinions? *Eliciting.*
D	(*speaks Arabic with translator*) Questionnaires is not enough maybe.
D	So the purpose… maybe the result are not equal to my … methods.
S	This is where your research is, views and actions. And you then say, this contributes, overall, to a much grander change, that other people must take on because you're not changing the system, here. And you're not changing people's thoughts. *Informative, challenging*
D	(*speaks Arabic with translator*) No, no, no, no! (*Arabic*). Maybe the end is not clear. It's only investigating the views.
Trans:	This will be a recommendation, not in the…
D	Yes, a recommendation, absolutely. And people will say I must read this
S	Are you there with that now? Because I think this has been an issue right from the beginning. *Clarifying.*
Trans:	Yes, he said it's very important now.
D	You mean that I must limit myself…
Sup	Of course! Because you can't cause a social change… if you do this, you've got another ten years work. *Social/tension relieving, supportive.*
D	I cannot change all the world! It's a life project.

Initial questionnaire data from the RoLI (1998) indicated that, among others in the cohort, this student exhibited dissonance between an accumulation approach, and transformational outcomes. This was exhibited, additionally, in a choice of a purely quantitative research vehicle. The follow up questionnaire (RoLI, 2000) showed some small shift towards a more meaning-oriented approach, but no decrease in dissonance.

What we can see from the dialogues is the student becoming clearer about the gap between his methods and his intended outcomes, based now not on the original information as indicated in the RoLI results when completed 1998, which we gave and discussed with him as part of the action research process, but on his own experience through his research, teased out and clarified here in the above dialogue during the third stage of the research development programme.

The three-stage research development programme is specifically designed to train and support research methods and so to better enable students to ensure coherence in the conceptual framework of their research, i.e. that questions, theories, methods and intended outcomes are appropriately aligned. Such alignment should reduce the possibility of dissonance, and should help students achieve their intended outcomes. Supervisory dialogues in the third stage of the research development programme set out both to identify how and if students have developed their research methods to more appropriately address their research questions and seek their research outcomes, and to further enable students to overcome dissonance should any remain or have developed. The dialogue (above) indicates that this student is successfully prompted to reflect on his research experience to date in the context of the workshop programme and training and to recognise a mismatch or dissonance between accumulation approaches and transformational outcomes. Further work helps to reshape the research.

VIVA TRAINING

In final stage work with students, the final workshop aims at developing the thesis and preparing for the viva. Students are asked to indicate crucial change moments for them in the course of their research. In so doing, it is hoped to enable them to reflect on the importance of development, on the significant changes they have made and how their learning ideas fit into the overall conceptual framework of the research. Facing up to and identifying the effects of critical incidents moves learners on in their ownership of this learning.

The supervisory dialogues:

(a) pinpoint and ask for logical connections to be made and argued through, and

(b) ask the students to 'tell the story' of the research — a visualisation of the journey of the research.

In (a) logic and (b) metaphors help others. All benefit from being involved. Students can see literally where the gaps and fissures, impossible leaps, crossed paths and blank spaces appear in their work, so can discuss how to manage this. They note where they might accumulate so much data, that the actual process could be swamped and can consider how to pare it down to the essentials.

The viva training and writing up on the final stage development programme is a vital point for research studies. It helps to bring the whole PhD together ready for producing a coherent finished draft with an abstract which genuinely sums up the direction of the research, the work, what it finds and how. Defending the thesis in a viva with examiners is a key element and to this end we ask the student to defend their now written, or soon to be written PhDs. In dialogues and mock vivas, we are careful to concentrate on 'telling the story', 'mapping the journey' and ensuring a 'clear conceptual framework running throughout'. Students are encouraged to (a) focus on answering questions about their research question and aims; how their conceptual framework springs from this, how their research methods have enabled them to action and direct their investigations towards these aims, and how their findings, analyses and results grow from the question, and the methods. And (b) to describe the stages as a journey; the pitfalls and the creative leaps, the moments when the research fell into place. They indicate any problems experienced and focus on issues and practices to do with learning, personal support, and strategic issues such as use of supervisor/ry dialogues in the programme.

FOCUS ON COMPLETION

We asked both Israeli and UK-based PhD students who are completing or who have completed their PhDs about the areas of difficulty and support they received. Responses were produced in supervisory dialogues, focus groups and individual interviews. These are thematically grouped according to the three themes identified: Personal, Strategic and Learning.

PERSONAL

In commenting on responses to questions about the development of the research and the writing up, students provided examples of their management of stress, help and support from friends and family, comments on their relationships with their supervisors and some sense of developing the learning strategies they used in the research over time. Four of the Israeli cohort who have gained their PhD's, one UK PhD graduate and students in the 1998-2001 3rd stage focus groups, commented on tape. The tapes were transcribed and analysed using NVIVO.

Lack of a peer group with whom to communicate is a serious issue for isolated PhD students. Some rely on their families, others have set up self-help peer groups and found the support of that immensely helpful - they can test ideas out with each other, maintain momentum and provide motivational support in difficult moments. They can also increasingly ask conceptual and structural questions grounded in their own experiences, and arising out of their developing understanding of the conceptual frameworks of their colleagues when working in a small peer

group over time. The English PhD group operate in this way, delivering research in progress papers and encouraging work in progress discussions amongst each other on the evening they meet (monthly) also inviting in staff to sessions on specific issues such as training for the viva writing up and editing. Individuals and a group of Israeli students (1999 cohort) indicate how helpful the group support has been (extracts 2, 3, 4, 5). Another PhD graduate (1998 cohort, student 5, extracts 1 and 6) comments below on overcoming isolation, and the structural support of the family:

PERSONAL 1

Student 5

> I felt very lonely, especially at the stage of writing up the thesis, and every time I wrote something, I had this urgency to share it with somebody, but I didn't want to share it just with anybody and I also didn't want people to influence me, so I decided to treat my husband as a listener and he was really a complete partner and every time I wrote something, even if it was only half a page, when he came home, I read it to him and asked what he thought about it and he was quite objective because he really doesn't come from my field of interest and I just wanted to have an opinion whether it's clear and eh….for me he was actually the prospective leader of my field group. So I got the psychological support and also, I can even say, some kind of professional support. Of course, I also got support from my two children.

> Another thing I used to do is, whenever I felt that I really cannot sit and write any more or feel the day is not very productive or ideas do not come up easily, I took a walk or go to the gym and exercise and then I really have so much energy that, sometimes I used to sit the whole night and then realise that I have only two hours to sleep.

2

> Do you stay in touch?

S Yes. Very friendly. Very positive environment, right? Support of the family? Didn't we have friends and family that we had to relate to? Again I can speak about myself because we didn't discuss it. I had support from my family. I admire my husband for enduring all the moments of frustration. I am also very thankful to my kids for being tolerant of not having home-cooked meals…that's all.

Some students use the self-help groups which they set up to work together and provide support, sharing their ideas and progress with each other.

3

Student R We were in the last two years because you advised us to be in a group, we were something like six participating. We were something like every two months or something like this period, we were in each house where we met and discussed our work. We were supporting to each other in the way that everybody in his specialist area. ..even technical support like A supported us in the computer area. And the last time I was in…even individually meeting. I was in house and I was, she was helping me emotionally to produce a lot of things that stuck to me and I couldn't …give up of them. So she helped me and supported like this. And I was, we were in the house, and in everybody's house getting support. And everybody even read part of the things and make comments. And we were good listener also in the telephone. And from this we also got friends. I mean even we were invited home and with the husband and I gain new friends, of course. And it's very interesting because it's not like regular friends, it's on a basis of intellectual development. So we are in the same stage of developing and it's very fascinating. And this is personal contribute to me from the group, of course. And we were also sharing the advice of all the supervising. Because I said what my supervisor.

STRATEGIC / PERSONAL 4

S M...said that he has a problem in choosing his model of the research and he knows that he has to enlarge the theory. Now the support all the group said that we really got, as I said, the meetings, the kindness of the staff.

And it makes us…in the beginning there was a little stress, as you said yesterday, but D… succeeded in calming down the group. And I think that the experience of last year, gave us more confidence. And we considered that all that you have prepared, I mean the papers that you sent to Israel, and that you brought here, I told…we talk, A... and me, yesterday, we said if we took all what they said to us and we translate it to Hebrew, and write it as a book, it would be very good for the next generation. It is good guidance. And, of course, all the group when she found she had a methodology which suited her needs. J... said that when, she was really happy when a model that she tried to constitute started to crystallise. E said that when he received I was elated when I was successful in getting access to a very boundaried cultural context and after exhaustive efforts, and being at the verge of just giving up. And of course, we have no words to express the benefits of this workshop. Any words that would be said would mean minimise the benefits. We are grateful for all the help and support, the methodological support, and the psychological encouragement.

This focus group response shows students making good use of both the development programme, and their own resources. They label specific moments and specific help.

STRATEGIC 5

These programmes were helpful, helpful from a social perspective because I met people and could share ideas and it was really a support group and academically it really provided me with food for thought and they were really, really helpful.

Of course the supervisory help that I got was just excellent and I really have to thank my supervisor for that because he really makes me think and I have no problem communicating through the email or in my visits to the UK, he was always available for me, ready to help, there was no question this was really, really very helpful and this was part of my success.

I also think that the stage 3 programme [...] was very effective and even though the thesis was almost all written up, the final polish and the strategy, how to perform in the viva itself was really good and really got a picture of what was going to happen in this room with all the people that you really don't know and you do not know what to expect.

Students have clearly found the three-stage research development programme very supportive and helpful. One thing it provides is a moment when they can come together with the guardian/supervisors/facilitators and their peer group and exchange ideas and experiences and then move on throughout the structure of the workshops to consider initial research methods and the framework of their work, then the maintenance of momentum and clarification of mid research needs, and finally the strategies and protocol for concluding the research, drawing conclusions both factual and conceptual, ensuring that there is a conceptual framework linking all the written elements focusing on the practices of writing-time audience story journey and bringing itself back in the process, the details of the shape and tone and models of the abstract, referencing layout and so on. These are both conceptual—ensuring that conclusions reached draw from findings and are enabled by methods and underpinned by theories and relate to the initial and developing aims and questions, and they are also practical and structural leading to quality in presentation.

For some it has been an intellectual journey structured and enabled partly by the research programme.

LEARNING

Highly reflective and less commonly articulated are comments on moments of change with research methods, and beginning to specify differences in approach to learning.

6

I really think that I have developed in the sense that I think [...] through and the sense I think that I have discovered **how** to think and how to write and how to be a good researcher. The most important thing for this intellectual experience, it's really a trigger to continue and every time I have this dream that when I finish my PhD I'm going.

7

As far as the...Some other reflections of the research process. For me, the whole process of the fieldwork was very enjoyable. And the whole process of undertaking the doctoral research was enjoyable and I really feel that I have developed in writing. All of a sudden I realised that writing is an art. And every word counts and can change things. Anything else I missed? The support of the supervisors…we all very happy with the support, more than happy with the support of the supervisors.

However, some students are clearly aware of enjoying their PhD work, and of pushing through the processes to make various learning leaps. A PhD graduate comments on this in extract 6 and a member of the '99 cohort in extract 7.

In final stage workshops we ask students to match their developing thesis against Winter's (2000) definitions of quality in a successful PhD so that they can then decide on what needs developing or changing in their own work. Winter identifies positive features as: Intellectual grasp, coherence, engagement with the literature, grasp of methodology, presentation, originality and publishability. Written materials used in workshops require students to audit their developing PhD thesis and shape responses with others in small groups.

A thesis of merit will have all these aspects or most of them. It will possess originality, and a sound intellectual grasp of the issues, the reading, the concepts and an original contribution to the fundamental and important arguments within the area. It will also have the characteristics of a publishable piece.

We provide workshop notes advising students on preparing the thesis further and getting ready for the Viva.

EXTRACT FROM MATERIALS ON COMPLETION

When you have looked through your thesis and seen whether and where or not it does fulfil these expectations, you can prepare a defence of its sound elements ready for the viva. Alternatively, you can look at some of its weaknesses and work on them- make it more coherent, mentioning paragraphs and point out what seems obvious to you but less so to a reader. Ensure that you have emphasised the original contribution and what and how it contributes to the concepts, arguments and knowledge of the subject area – make a case for your thesis and its contribution to the area of knowledge, skills etc. If you find that there are areas of weakness such as coherence or originality or presentation quality, plan out how to tackle these now and work on the weaknesses so that you end up with a good thesis which makes an original contribution.

You will need to be able to marshal a *clear, coherent* defence of your thesis ready for the viva, and we will look at preparation of the viva in the next chapter. You will also need to pay particular attention to the quality of the presentation, since it would be a great pity to jeopardise your chances of attaining your PhD because of slapdash bibliographical details, inconsistencies, and poor presentation which detracts from the argument, coherence and originality of the thesis itself. The greatest presentation problem however is one aligned to that rigour, cohesion and originality: if you have only gathered information rather than moving the boundaries of the study onwards and having something original to add, contextualising your work. It is necessary to concentrate on coherence, articulation and clarity.

Task

Now look at your own thesis so far.

- How far does it conform to the desirable qualities of work at this level?
- What do you still need to do?
- Organise a 'to do' list to bring your work up to the required level – including running it past a trustworthy, critical friend for comments on the content and coherence, and on the presentation qualities.
- Make sure you know the thesis really thoroughly.
- Try producing a two page outline of it – containing the abstract and a short version of methods, context, findings and answer the questions:

- What has really been discovered/developed? Why does it matter?

This will start to make it manageable for you to prepare for the viva.

Tackling such issues in workshops and on their own, based on the written materials, should help students prepare for submission of a successful thesis of merit.

Following the viva training and actual vivas, students have commented on the processes of preparing for and then undertaking the viva.

PhD INTERVIEWS 8

S	I just want to ask about the shape of the viva. So, what sort of preparation did you do beforehand?
V	Anyway, she ran a few questions at me and we had a practice of dialogue, backwards and forwards and the kind of thing I might get, and then she said what you need to do is to prepare about 12 or 13 or so various angles on your writing and that should cover you if it's say 4 hours or something like that, but try not to be too wooden about it, you know, don't learn a set answer, but to have areas that you've prepared.
V	Right, let's be positive, what helped? Um, support from Z, the tutorials as and when I needed them, always very clear as to where I was going, what I needed to do, but she's a very clever teacher, kind of elicit from you so that you didn't take away your possession of it.

This student (PhD graduate) notes how supportive her supervisor has been in preparing her for the viva. Others have commented on the usefulness of mock viva training as an opportunity to be better prepared and to rehearse a variety of arguments to defend their thesis and their research.

CONCLUSIONS

Completing the PhD successfully is a long-term project involving students, supervisors and institutions in ongoing developmental work. Students are engaged in developments in conceptualisation of the research; managing the processes of research in action; strategies of research as a form of learning, and need to develop the tenacity, structuring and presentational capabilities which lead, in the last analysis, to a well presented, well articulated, well conceptualised and structured piece of significant postgraduate work making a contribution to knowledge and conceptualisation in the field.

Action research provides information about the development of students' research-as- learning processes, their use and benefit from supervisory relationships and research development programmes, and their experiences of benefits from managing stress, self and time, help from friends and family, support structures (and the converse of these) to varying different extents. Our research operates as part of a research development programme employing workshop activities, research methods training and supervisory dialogues. We set out to identify strategies and processes which support PhD students in completion and can enable them to achieve their potential and success in PhD. Our work has identified issues and practices in three areas:

Learning: Developments in learning styles and strategies, overcoming hurdles, making learning leaps, refining aspects of the research-as-learning.

Personal: Management of stress, supportive personal relationships, time management self-management.

Strategic & Institutional: Formal supervisory and research development programme support.

Workshop activities and the development of a supportive programme, clarification and focus of the supervisory relationship and supervisory dialogues are, it is argued, supporting students in their focus on, conceptual frameworks for the carrying out of, management, and completion of their PhD research, their thesis and their success in the viva. The workshops aim, and appear, to enable PhD students to overcome dissonance and succeed in their PhD research, completing the thesis and defending it in a viva. Working to overcome dissonance and achieve success is properly a shared task of supervisor and student. Research development programmes and supervisory dialogues, informed by collaborative action research, have in some cases, helped students to overcome dissonance in their research-as-learning and succeed at PhD.

In terms of the interventions in which we have been involved with the students over their three years or more of study, and particularly, for this paper, during the completion phase, we argue that action research accompanying the programme delivery encourages students to be involved in essential reflection, and awareness of developments and stages in the research-as-learning. We also argue that focused research development programmes, carefully managed supervisory dialogues and mock vivas support students in achieving successful outcomes in their thesis and viva. In so doing, we hope to identify strategies for good practice in the support; development and PhD success for students, supervisors and all involved in research development programmes.

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A WORKSHOP APPROACH TO POSTGRADUATE RESEARCH TRAINING IN GENERIC SKILLS AND STRATEGIES

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This paper describes a Postgraduate Research Training Programme that concentrates on two critical phases of a research project, its inception up to the preparation of a proposal, and its completion, including presentation of the research. These are times when generic skills and strategies are most relevant.

Students undertake the Programme voluntarily and are drawn from a wide variety of disciplines and cultural backgrounds. They are divided into two streams of (1) Arts and Social Sciences and (2) Sciences and Applied Sciences to cater for students' preferences and to recognise some fundamental differences between these broad discipline groups of approaches to, and conditions of, research.

Given the diversity of students even within these broad groups, we decided that a didactic teaching format would be inappropriate and that we wished to encourage the students to be highly (inter)active in their learning, to build on their existing knowledge, and to exchange ideas and strategies. Consequently, we adopted a workshop format which uses active learning exercises to stimulate thinking and discussion about the differences and similarities among the disciplines in order to arrive at an understanding of the fundamental principles and processes of research, as well as to provide practical skills and strategies.

We argue that this interdisciplinary, multicultural, interactive format achieves its aims and that the view that generic skills and strategies are best taught within the disciplines is not invariably true. The context is all-important.

Finally, we present evidence that the Programme is highly regarded by the students. For two years it has been carefully evaluated, using both quantitative and qualitative data. The 114 students who completed a formal evaluation rated the Programme at 4.47 out of a possible 5 over 25 survey items. In informal evaluations (total η=917) at the end of all workshops, 53% of students rated them as excellent and 44% as good.

EVALUATING LEADERSHIP DEVELOPMENT PROGRAMS FOR POSTGRADUATES

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This paper reports on the development and implementation of the evaluation of a leadership and professional skills development program for postgraduate students at The University of Melbourne.

The Advanced Leadership and Professional Skills Program (ALPS) for research postgraduates is aimed at developing transferable skills across research, industry and the public sectors. Evaluation of the learning outcomes was conducted on two modules, one focused on training in generic workplace skills, the other aimed at training in the specific skills involved in managing intellectual property and commercialising innovation.

The formative and continuing evaluation process employed is part of a wider quality assurance process and the relationship between these processes is described. The results of the evaluation to date are provided and discussed in terms of their usefulness in incorporating particular improvements to the program.

This paper also discusses key issues involved in evaluating programs aimed at developing leadership, professional and other transferable skills. These generic skills are embedded in the expected attributes of Australian postgraduates at the successful completion of their research degrees.

VALUE-ADDING TO THE QUALITY OF POSTGRADUATE RESEARCH THROUGH THE CRCs

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This paper reports on the efforts of three Cooperative Research Centres (CRCs) to enhance the quality of post-graduate research and graduate outcomes through the delivery of supplementary professional development through their Education and Training programs.

The rationale for these Education and Training programs is the increasing recognition that postgraduate research students benefit from a range of additional education and capacity building opportunities in developing skills and knowledge that will be of direct social, economic and vocational relevance upon graduation. In addition, one of the goals of CRCs is to improve linkages with industry, both through undertaking relevant research and through the development of researchers who have a sound understanding of the industry to which their research is relevant.

To this end, the Education and Training programs aim to deliver educational opportunities that will provide for the personal, professional and vocational needs of research students. This includes discipline specific skills, cognitive skills, project specific skills and career and professional practice skills. These opportunities are developed to complement training in the substantive fields of students' investigations which is provided by the universities in which students are enrolled.

This paper examines the effectiveness of the CRC approach in enhancing graduate outcomes. The paper is based upon survey and interview data gathered from postgraduate students across all three CRCs.

QUALITY IN FLEXIBILITY: DIFFERENCE AND DIVERSITY IN STUDENT SUPPORT

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This paper will examine how the experience of postgraduate students can differ in quality depending on each individual student's support and resources needs. What is good support for one student may not be for another, and the current norm of the three year full time research program and corresponding administration is disadvantaging some cohorts of students. Through case studies based on research conducted by University of Melbourne Postgraduate Association (UMAP) in conjunction with the Equity and Learning Programs and School of Graduate Studies during 2000 and 2001; it will be demonstrated that to ensure quality of the research and campus experience for all students, administrative and supervisor flexibility is the key.

FIRST YEAR POSTGRADUATE STUDENTS AT THE UNIVERSITY OF MELBOURNE: A PRELIMINARY STUDY

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In 2000, The University of Melbourne's School of Graduate Studies and the University of Melbourne Postgraduate Association (UMPA) commissioned Kaz Ross to examine the experiences of first year postgraduate students at the University. Ross was asked to report on whether there is a common experience and, if so, what is distinctive about it. The Ross Report was published in August 2001. It is available via the internet at: http://www.umpa.unimelb.edu.au/campaigns/firstyear2.pdf.

Ross found several factors in the first year postgraduate experience are distinctive, being more or less common across the cohort. Meanwhile, several important factors are not common across the cohort, meaning some new postgraduate students are facing greater obstacles than others. In particular, Ross finds an institutional hierarchy that corresponds significantly to different patterns of postgraduate enrolment. This hierarchy tends to alienate some groups of students.

This presentation will discuss the findings of the Ross report. Participants will be invited to consider whether its findings may be representative of the first year postgraduate experience at other institutions, and whether its recommendations translate satisfactorily into other institutional environments.

ISSUES IN POSTGRADUATE COURSEWORK

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Should coursework be seen as essentially vocational? If so, should it be placed in a system which is designed to provide something more than purely technical training? Postgraduate coursework may be viewed as helping people to do a paid job better, and may include some research. In contrast postgraduate research may be seen as helping people discover knowledge and fit them for employment in academia and research institutions. If this belief is absolute, why is coursework part of a university system? Surely, it should be part of a TAFE system, or a separate system altogether, perhaps called a CAE.

Postgraduate coursework was removed from the HECS system some years ago, but a decline in domestic participants moved the present Government to initiate PELS, a de-facto HECS. But, there is a big difference as universities are not limited in the fees they can charge for these courses, usually between $10,000 and $40,000. The Government expects that universities will receive $995 million over the next five years. This is not an increase in public funding but an entrenchment of the principle of full fees being paid by students.

What protection does the postgraduate coursework student have?

THE PEDAGOGY OF GOOD PhD SUPERVISION: A PROGRESS REPORT ON A NATIONAL STUDY OF INDIVIDUAL AND INSTITUTIONAL SUPERVISORY PRACTICES AND PROCEDURES THAT CONTRIBUTE TO THE ON-TIME COMPLETION OF DOCTORAL DISSERTATIONS

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This paper outline the progress of a national study of PhD supervision, funded under DEST's Research Evaluations Programme. Data collected via a two-phase national survey of PhD supervisors working in Australian universities are discussed. The first phase of the survey contacted 5,445 supervisors in 28 universities. The second phase contacted 1,063 supervisors who supervised students between 1990-1997. The discussion focuses on findings about rates and times for PhD completions, and the implications of these data for universities' operations in relation to the Research Training Scheme. The paper then turns to a preliminary analysis of data collected via face-to-face interviews with supervisors, identified through the surveys by their track record of association with successful PhD candidatures. Data about individual and institutional supervisory practices and procedures that contribute to the completion of doctoral dissertations are discussed.

SABOTAGE: HOW WE DO IT AND WHAT YOU CAN DO ABOUT IT

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Sometimes external factors stop us from achieving our goals e.g. lack of resources, changes in circumstances, but there is an increasing body of research in the area of self-sabotage or self-handicapping, that is how we stop ourselves from reaching our goals. Examples of common self-sabotaging behaviours include procrastination, perfectionism and overcommiting.

At Flinders University we are applying some of this research to the area of postgraduate research. Much research is carried out in a reasonably unstructured environment where much relies on the initiative and commitment of the researcher. In this context there is a lot of scope for self-sabotaging behaviours to operate.

This paper draws on the literature, and interviews and focus groups with research higher degree students, to identify some of the key self-sabotaging strategies. These include becoming distracted by side issues (e.g. tutoring), difficulty starting and lack of planning. The paper considers how these strategies operate and the implications for researchers.

It then discuss whether these strategies can be modified and presents options that might allow individuals to identify their own self-sabotaging strategies and to develop options for dealing with them.

STUDENTS' CONCEPTIONS OF RESEARCH: A QUALITATIVE AND QUANTITATIVE ANALYSIS

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Relatively little is known about students' conceptions of research and, in particular, whether there are conceptually discrete patterns of variation that can be used to model this phenomenon. The present study explores the dimensionality of students conceptions of research from two complementary research perspectives.

First, the open ended written responses of students (η=154) to questions, aimed at soliciting variation in conceptions of what research is, are analysed using a qualitative methodology to isolate 'categories of description'. Findings are summarised in terms of eight such main categories, some of which are further internally differentiated. In terms of the main categories, research is conceived of in terms of (A) information gathering, (B) discovering the truth, (C) exploration and discovery, (D) analytic and systematic enquiry, (E) incompleteness, (F) re-examining existing knowledge, (G) problem-based activity, (H) a set of misconceptions.

Second, the substantive verbatim excerpts that formed the units of analysis in the qualitative analysis were used as a basis for item stems, and their variants, that were operationalised into a Students Conceptions of Research Inventory (ScoRI). This inventory was administered to a heterogeneous sample of postgraduate students (η=244) and resultant data were subjected to exploratory factor analyses that provided an independent empirical validation of a smaller subset of the categories isolated in the qualitative analysis. Empirically, and in terms of additional psychometric considerations, there was clear empirical support for five dimensions of variation (common factors) in terms of categories (B), (C), (F), (G) and (H) above.

These findings provide a basis for conceptualising and interpreting how students engaged in research activity may differ from one another and what the consequences of such stable differences may be for research-as-learning outcomes.

STUDENT TEACHERS' CONCEPTIONS OF RESEARCH, NUMBERS AND MATHEMATICAL ABILITY DURING A RESEARCHER WORKSHOP

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University students' conceptions of research, especially of quantitative methods and statistics, have been found to be related to students' conceptions of their own mathematical ability and their experienced difficulties in methodology studies. Many students find their methodology courses difficult and frightening. A 'researcher workshop' experiment has been conducted in the teacher education department at the University of Turku for three years to overcome the problems in methodology learning in general. The main ideas are linking practice with theory, making research an everyday activity, and reducing the anxiety and negative attitudes toward research. Researcher workshop begins in the first year and continues through the studies. Research is not taught in separate courses as they were earlier, but linked with other subject courses. Students attend a researcher workshop group, constituting of 10 to 15 students, which continuously examines the study subjects from the viewpoint of research.

This study presents the results from the first two years of a follow up and introduces the main ideas of the researcher workshop. We examined with questionnaires how teacher students experience their own mathematical ability and how it is connected to valuing of methodological courses, valuing of numerical methods in research and valuing of scientific knowledge. Situational motivation patterns were also researched. The participants of the study were 70 students in a masters programme for elementary school teacher.

SUPERVISORS' AND STUDENTS' VIEWS OF RESEARCH

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It is argued that identifying the degree to which a given novice conception of 'research' articulates with academic institutional values and expectations will enable appropriate support mechanisms to be used to assist particular students early in their candidature. It is further argued that supervisory practice needs to be aware of, and sensitive to, such preconceptions.

This presentation will discuss the results of extensive student and supervisor surveys in Australia, South Africa and the UK regarding their beliefs about research. The initial results indicate that students hold a range of views about research and that there are contradictions between what students conceive research to be and those conceptions held by supervisors. It will be argued during this presentation that articulating what 'research' is believed to be and identifying any differences between those beliefs between students and supervisors could be helpful in improving the completion times and rates of postgraduate students.

SECTION FOUR

POSTGRADUATE SUPERVISION

fIRST: DESIGNING AND INTEGRATING ONLINE RESOURCES FOR RESEARCH SUPERVISION DEVELOPMENT

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The fIRST site (for Improving Research Supervision and Training) is an initiative of a consortium of 26 Australian and New Zealand universities which aims to make available a range of resources to assist facilitators and individual supervisors to improve the quality of postgraduate research training. A prototype site has been operating since 2001. In this paper the fIRST site will be described and analysed as an instance of the integration of research supervision with the broader context of developing a research culture. The rationale, content, and structure of the site will be presented, with an emphasis on how the framework of broad learning outcomes for supervisors has driven the development of resources, and how the need to integrate the resources within institutional contexts has shaped the structure of the site. Three examples of integrating fIRST into online and face-to-face local supervision development programs will be described, with the aim of illustrating different ways of using the resources in different institutional contexts.

'HOW DO I MARGINALISE THEE? LET ME COUNT THE WAYS': FRIENDSHIP AS A DISCOURSE OF MARGINALISATION IN POSTGRADUATE SUPERVISION

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The theory and practice of postgraduate supervision constructs academic supervisors as the custodians of 'friendship' in the supervisory relationship. This construction also demands compatibility between students and supervisors as an essential to a successful candidature. This paper does not dispute that a co-operative relationship between student and supervisor can be a bonus in the supervisory relationship. However, we argue that 'friendship' as a discourse has the potential to marginalize both the supervisor and the student as it constructs and is constructed by each to disempower the other. This paper examines the discourses and the technologies of friendship in the supervisory relationship, and argues that a more collegial and professional discourse opens new possibilities for different practices in postgraduate pedagogies.

FIGHTING FOR SPACE IN SUPERVISION: FANTASIES, FAIRYTALES, FICTIONS AND FALLACIES

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In higher education the supervision of graduate research students is a confused practice. When given the opportunity, supervisors and students ask what it means and how it should be done. In this paper, I argue the confused state of supervision affairs is an effect of the many competing and contradictory discourses of supervision in current circulation. While some are dominant and others marginal, all are available to be mobilised by supervisors and students. In identifying these discourses, I briefly suggest how each figures its Good Supervisor and Student, its Proper Supervision, in particular ways. Then, by giving a close reading of some data extracts from my research with Masters students and their supervisors, I show how discourses interrupt and displace each other in the lived experience of supervision to produce a fundamentally unstable, but not necessarily unpleasurable, relationship. I also anticipate some of the effects and implications of these intersections for the practice of supervision.

TOWARDS QUALITY SUPERVISION: UNDERSTANDING THE INTERPERSONAL NEEDS OF HIGHER DEGREE STUDENTS

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The current climate is characterised by growing competition between universities for the increasing number of research students and an expectation to shorten the period of their candidature. This situation focuses attention on university departments in general and supervisors in particular, to adequately provide for student needs in order to ensure timely completion and student satisfaction. Both outcomes are extremely significant, both personally and economically.

The present research addressed the student experience and interpersonal supervisory needs of a cohort of doctoral students at a large research university. The triangulation of data collected by both quantitative and qualitative methods resulted in an appreciation of the process and goals from the perspective of students. It identified particular student needs within the supervisory interaction as contributing both to student learning and their personal and professional development as a result of the doctoral process. These findings provide useful and important information if supervisors are to establish an effective and satisfactory supervisory relationship.

IS THERE A DISAGREEMENT? DIFFERING PERSPECTIVES OF A BEGINNING STUDENT AND NOVICE SUPERVISOR

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In February 2002 when John commenced his PhD, as the recipient of an APA and against a background of successful achievement in three discipline areas (engineering, arts and architecture), the expectation of his supervisor, Susan, was high. This should be the 'dream' candidate—organised, professional and able to show regular evidence of progressive outcomes.

Difference of opinion first arose at the sharing of 'Expectations of Supervision' session. Susan ranked Q. 8 *The supervisor should check regularly that the student is working consistently and on task* as 'strongly agree' whereas John ranked *The student should work independently and not have to account for how and where time is spent* as 'strongly agree'.

Susan felt, as a novice Supervisor, that she had a role in ensuring John's success through requiring regular meetings at which progress was discussed and work in progress reviewed. John believed, as a successful mature student, he could ably determine a route though the three years of study, without the Supervisor's input, and indeed that his profound dyslexia meant that he certainly would not study in a pattern comprehensible to the Supervisor as predictive of producing outcomes at regular intervals to suit supervision meeting timetables, or that could be described as 'consistent'.

In the paper and presentation, John and Susan, drawing on the audio-tape of their initial discussion about this topic, describe how they discussed this tension, and what proposals they put in place to establish a framework for conflict resolution, and support John's candidature. Other differences revealed in completing the 'Expectations of Supervision' pro-forma are discussed in relation to learning approaches.

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CRACKING THE CODE: SHIFTING THE DISCOURSE AND PRACTICE OF RESEARCH DEGREE SUPERVISION

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While research degree supervision has been described as one of the most advanced and complex forms of teaching, our understanding and conduct of supervision as pedagogy is constrained by the discourses that surround it. Despite increasing attempts in the literature to re-conceptualise the supervisor as other than a manager—often through new and interesting metaphors such as 'tour guide'—supervision is rarely represented as teaching practice. At the University of South Australia, quality supervision is constructed primarily as good management practice, with supervisors' actions defined by set roles, responsibilities and procedural obligations. A key text in this construction of supervision is the *Code of Good Practice: Research Degrees Supervision*, which locates supervision in an institutional policy framework underpinned by centralised administrative structures and quality assurance mechanisms.

In this paper I argue that codes of good practice function as prime sites for the discursive production of supervisory practice, with the discourses that circulate within and around these texts mediating relations between supervisors and candidates and regulating their actions. I take a critical perspective to the *Code of Good Practice: Research Supervision* in the University of South Australia, using techniques of critical discourse analysis and conversation analysis. I examine how supervisors and candidates are positioned by the text in institutional relations of power and constructed as particular kinds of academic and social identities. I suggest that the diverse and changing learning needs of 'trainee' researchers are not acknowledged, and therefore the teaching skills required to address these needs not identified. I argue that how we talk and write about supervision influences how we come to *do* it, and that changing the discourse is a first step towards shifting our practice. The paper concludes with some suggestions for writing pedagogy into a code of good practice for research supervision.

PALE REFLECTIONS: ISSUES OF RACE IN POSTGRADUATE SUPERVISION

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The research discussed in this paper arose from a need to respond to a pressing call to account: a call to examine the inflections of racism endemic in feminist practice and epistemologies, from women who do not self-identify as 'our sisters'. While this particular piece of research has its specific site within women's studies it has resonances for other fields and for postgraduate supervision in general, which are being currently explored.

The research addresses the question of how far some assumptions made about 'good pedagogy' and 'good supervision' , and therefore about 'quality', are not only ethnocentric but glaringly white. Is it possible to be an effective 'cross-cultural' supervisor without assuming the missionary position? What constitutes a culturally inclusive interpretation of 'effective'? How do/should supervisors—and of course the term itself embodies its own set of expectations and power relations—negotiate issues of subjectivity and power with the increasingly diverse bodies of postgraduate students that our entrepreneurial universities are actively soliciting?

The answers—or rather speculations towards answers—have implications in the practical arena for changes to the ways higher degrees are 'supervised'—including perhaps a renaming of the process to indicate a different set of relations. But they also have implications for the disciplines and the epistemologies that they (re)produce.

RESEARCH EDUCATION AS WORKPLACE PRACTICE: A DISCOURSE-BASED STUDY OF THE IMPLEMENTATION OF THE RESEARCH TRAINING SCHEME

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With the introduction of the Research Training Scheme (RTS) into Australian universities there is a heightened emphasis on improving the outcomes of research education, both in terms of completions and student satisfaction. Institutional imperatives are likely to have increasingly significant effects on ways in which professional practices such as research supervision are valued and carried out. Research which investigates the relationship between the institutional order and the interactional order as people communicate in the workplace can clearly be useful in this research education arena.

The workplace discourse analysis approach of Sarangi and Roberts (1999), developed within the context of health care, has a specific focus on improving the communicative practices of institutions through collaboration between discourse researchers and professional practitioners. This paper presents work in progress on the development of a pilot project to investigate the applicability of this approach to the research education context, both in terms of its theoretical base and its practical outcomes for institutions, supervisors and students. (Reference: Sarangi, S. and Roberts, C. (1999). (Eds) *Talk, Work and Institutional Order.* Berlin, Mouton de Gruyter.)

THEORY-BUILDING AS RACIALISED PRACTICE: IMPLICATIONS FOR DOCTORAL STUDY THAT SEEKS TO UNSETTLE WAYS OF KNOWING

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Postgraduate research is by its very nature unknown territory for many students and supervisors, an 'original contribution' being one of its hallmarks. In this paper I explore the possibilities for originality given the discursive ways in which theory building is always-already located within racialised practices which, while invisible to some, are all too visible to many students and supervisors.

I use a recent study, *Unreliable Allies: Mapping the effects of whiteness in adult education,*(Shore 2000) to tease out the paradox of doctoral study, which aims to unsettle ways of knowing and at the same time presumes a degree of certainty about the theorising practices available to do that study. This paradox is discussed using two features of theorising, binary thought (cf Derrida) and the notion of representation embedded in hierarchies of difference (cf Deleuze), to explain their impact on ways of theorising self, culture and difference.

Questions which inform this work include the following:

1. How is whiteness implicated in theory building?
2. What kind of supervision strategies assist in rendering this influence visible as a set of disguised albeit powerful discourses guiding theory building?
3. How are these pressures and forces racialised to such an extent that they are often not connected with racial practice at all (cf. Said 1993)?

DEVELOP THE COMPETENCE OF SUPERVISORS: EXPERIENCES FROM A COURSE FOR POSTGRADUATE SUPERVISORS

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Swedish postgraduate training has experienced major changes during the past few decades. Previously postgraduate students could spend six to ten years writing their doctoral dissertation, but now the work must be completed within four years. This new situation is a great challenge both for the students and their supervisors. Many supervisors ask themselves: "What are my main tasks as a supervisor and what exactly is expected of me?" In spite of this difficulty, collaboration among supervisors and discussions about supervision are not common. In fact, the atmosphere surrounding postgraduate supervision is more competitive than collegial and there is a great deal of prestige involved.

Since 1997, Umea University has offered postgraduate supervisors a course called *Postgraduate supervision in practice*. This course consists of six days of seminars during a three-month period (3+1+1+1 days) that includes training, lectures and discussions, as well as 'homework' between sessions. The course is based on group activity where a great deal of time is reserved for discussion and reflection.

The course has been very successful and the interest shown by supervisors has been astonishing. In fact, we do not have sufficient resources to welcome all applicants. The need for collaboration, discussion and knowledge among supervisors seems to be unlimited.

In my presentation I will tell you more about the course and relate some of our experiences.

USING CASE STUDIES TO RECOGNIZE AND REWARD SUPERVISION DEVELOPMENT: REFLECTIONS ON THE PEDAGOGY OF ONLINE ACADEMIC DEVELOPMENT

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If postgraduate research supervisors undergo a program of supervision development, how can this be recognized and rewarded? Supervision is, after all, intended to lead the student to success in their thesis examination. The assessment of performance on a supervision development program thus presents interesting challenges.

The University of Sydney Postgraduate Supervision Development Program has been operational since 1993, initially as a series of workshops and then in 1998, the program was redesigned to incorporate the principles of flexible learning. Resources and learning materials have been developed to be easily available on the internet so that supervisors can negotiate their own learning pathway through the program. Information (for example, University policies, bibliographical references and links to related websites) can be accessed quickly or staff can choose to engage in a structured and reflective learning experience involving the identification of the supervisor's personal learning goals, their areas for attention and then the completion of the six online self-study modules. The program provides opportunities for supervisors to reflect on some of the supervision literature, respond to activities and share their reflections with a community of supervisors through discussion boards and workshops.

Initially, the program was set up as an individual progression where supervisors themselves are responsible for determining the success of their learning. But how do you tell with such a flexible program whether those who have registered have completed the program and what they have learnt from it? Institutional requirements, for example for promotion or teaching awards require documentation that supervisors have engaged in a systematic process of reflection and improvement. So as academic developers, we have recognized a need to develop criteria, and a process through which supervisors could have their learning assessed. This paper describes our journey in developing this new innovation – which we have called the Recognition module. It asks supervisors to review their learning on the program and apply what they learn to the writing of an individual online supervision case study. With critical questioning, supervisors are guided, supported but also challenged through the process of developing their case studies. We describe our experiences with regard to setting up and then supporting supervisors through the process. We also highlight what supervisors say they learn from the experience and draw out the lessons which we have learnt about online supervision development more generally.

BEYOND SUPERVISION: A CASE STUDY OF HOW COLLEGIAL SUPPORT CAN ENHANCE A PhD EXPERIENCE

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Supervision of by-research theses is a complex and demanding task, which extends over several years. Whilst it is recognised that good supervision is a key factor in the success of a project, universal agreement about what constitutes 'good supervision' has not yet been reached. Although there have been a number of excellent contributions to this area, recent Government demands in Australia regarding 'timely completion rates' have brought further pressure to bear on this topic.

This project analyses a PhD experience where a candidate, who is a university lecturer, and an academic colleague, also a university lecturer but not his formal supervisor, were involved in extended discussions about aspects of the thesis. The candidate and his colleague brought alternative perspectives, based upon their differing experience and areas of knowledge, to bear on a number of issues related to the conduct and content of the work. This paper investigates what these differing viewpoints were and how they contributed to an enhancement of the process and the final thesis.

An independent evaluator was involved to identify and investigate 'critical episodes' that arose during the course of the work. The candidate and his colleague were asked, individually, to recall their experiences during this time, and provided perspectives on these episodes in terms of their genesis, the issues, and their resolution.

Interim findings were consolidated at a group meeting, and developed in a way that we hope may provide some general strategies to assist supervisors and advisors to PhD candidates in future projects.

THE RESEARCH HIGHER DEGREE STUDENT PERSPECTIVE

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As part of the development process for its Professional Development Program for Research Higher Degree students, the Staff Development and Training Unit at Flinders University conducted a number of focus groups, interviews and discussions with research higher degree students. We surveyed students from a range of disciplines across the University and students at different stages of their research program. The purposes of these focus groups and interviews were to:

- identify a range of issues that impact on research higher degree students as they pursue their research
- discuss the types of support that the University currently provides and could usefully provide in the future
- identify strategies for informing research higher degree students about the types of support available and engaging them in this
- identify the range of methodologies that would be appropriate for this group
- identify specific interest groups eg off-campus students, and discuss their particular needs

This paper will outline the key findings of these focus groups and interviews and discuss the implications of these for research training.

SECTION FIVE

THE POSTGRADUATE RESEARCH ENVIRONMENT

TOWARDS A DEVELOPMENTAL FRAMEWORK FOR POSTGRADUATE SUPERVISION

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ABSTRACT

The quality of postgraduate supervision continues to be a critical factor in the retention and timely completion of postgraduate research students. Yet, there are few developmental frameworks for postgraduate supervision beyond those provided by consideration checklists or anecdotal case study. This paper draws together research from both the organisational and higher educational literature to posit a developmental framework for postgraduate supervision. The framework centres on three foci, the culture, structures and systems of postgraduate education at the departmental or school level. These three foci are crossed with two important outcome dimensions provided in a summary of postgraduate research by DETYA: institutional/environmental factors, and individual supervisory arrangements. Thus, the paper proposes a framework for developing postgraduate supervision that is based on both organisational factors and outcome measures. The developmental aspects of this framework are demonstrated through examples drawn from the authors' university. The framework can to be used to devise developmental policy and practice for postgraduate supervision following a thorough analysis of each university's contextual features.

INTRODUCTION

There has been considerable focus on developing the relationship between the supervisor and higher degree by research student. Yet, focusing on the relationship alone overlooks many other crucial aspects of research education, including research infrastructure and facilities, orientation activities and information and skills development workshops. Further, there are few frameworks that draw together these other aspects beyond those provided by consideration checklist, illustration (e.g. Johnston, 1995) or anecdotal case study (e.g. Willcoxson, 1994). Thus, this paper posits a framework for developing postgraduate supervision based on aspects drawn from two existing models. The first model is adapted from the DETYA paper titled *Factors associated with completions of research higher degrees* (Latona & Browne, 2001). This paper uses two of the three outcome aspects associated with the completion of research higher degrees: institutional/environmental factors, individual supervisory arrangements and student cohort factors (with student cohort factors to be addressed in another forum). The other model, which complements the first, is taken from the organisational literature. This organisational model proposes three key development components: culture, structure and systems. We contend that both outcome and organizational models offer ways to conceptualise postgraduate supervision. In sum, this paper posits an organisational development framework that centres on three foci: culture, structures and systems, and applies it to two of the outcome factors proposed by Latona and Browne (2001): institutional/environmental and supervisory factors. From there, we provide examples from our own university, the University of Canberra, of how, within this framework, others can develop a successful postgraduate experience in the current context of quality improvement in postgraduate research education.

THE NATIONAL CONTEXT

Three Australian Government reports related to higher education have shaped much of the current Australian postgraduate research environment. These three reports: *Learning for life final report: Review of higher education financing and policy* (West, 1998); *New knowledge, new opportunities: A discussion paper on higher education research and research training* (Kemp, 1999); and *Knowledge and innovation: A policy statement on research and research training* (Kemp, 1999) scoped many of the issues related to the postgraduate research environment and proposed some solutions.

In these reports, timely completion rates of students in research awards emerged as a major issue for postgraduate development. Martin et al (2001) calculated in their report that *Overall completion rates of the [1992] cohort [in 1999] are estimated to be 65 percent for doctoral and 48 per cent for masters students* (p. 2). This rate compares unfavourably with an undergraduate rate of 80 percent and 75 percent for postgraduate course-work students. Such a high rate of attrition was argued as being unacceptable in personal, professional and financial terms. For example, in 2000 it was estimated that $545 million was expended from Australian university operating grants supporting postgraduate research students with an additional $94 million provided in terms of stipends for students (Kemp, 1999, p. 31).

It is important to note here that students' reported dissatisfaction, and hence withdrawal or slow completion of their award, was cited as one possible explanation for undesirable completion rates against high expenditure rates.

They report too often the training provided is narrow and limiting in its specialisation; poorly supervised; and out of line with the expectations of employers…Not surprisingly, in these circumstances, the research training scheme is marked by high rates of drop-out and a significant waste of both talent and investment.
(Kemp, 1999, p. 10)

Not surprisingly, the three reports have brought about numerous policy changes and also changes in practice. For the purpose of this paper only three of the main changes are discussed. The first relates to the Government requirement that each university annually submit a Research and Research Training Management Plan. While universities had been preparing research plans for some years, the research training plan was a new development. The second policy change relates to the first in that universities must report against their plan the following year. Included in this report are details of such activities as the training/development provided for supervisors each year. The third, and possibly most significant change, was to position postgraduate education within a performance-based funding model. The concept of funding universities based on the number of students completing their research degree (rather than the number enrolling), and the amount of time that funding was available for each student seems to have had a significant impact on Australian universities.

As might be expected, this impact has been experienced in different ways in different types of universities. For example, the better funded research-intensive universities may experience different effects than the teaching-intensive universities. In the following sections, we posit the authors' university as a case study example of the ways in which the framework can be used. We also assume that as a newer and teaching intensive Australian university, it faces unique opportunities and challenges arising from the recent developments in postgraduate education.

THE LOCAL CONTEXT AT THE UNIVERSITY OF CANBERRA

The University of Canberra was developed in 1989 from the College of Advanced Education system when the binary system of higher education was amalgamated. With a very good reputation for teaching the University's reputation for research was limited and the number of higher degree by research students relatively small (e.g. in 2002 there were 128 (EFTSU[1]). The University had a limited number of staff with research higher degree qualifications. As a result, in some disciplines there were relatively small numbers of staff who were qualified to

supervise higher degree by research students. This situation, in turn, has led to a degree of academic isolation for staff undertaking research and supervising research students.

Limited research and supervisory experience has sometimes led to greater attention to administration. For example, examiners for PhD theses, of which there are three, must be approved by the Divisional Higher Degrees Committee and then by the University Higher Degrees Committee, all of which can involve some time. However, one of the advantages of this level of administration is that more staff are likely to be involved in various processes related to postgraduate administration and organization. This, in turn, allows great opportunities for learning and development than in universities where such matters are handled by Heads of School or Postgraduate Coordinators.

Given the University's location in the national capital, the postgraduate student cohort has some particular characteristics. Some postgraduate students are working full-time in the Commonwealth public service, often in quite senior positions. They are therefore of mature age (53% of the 2002 cohort is 40+ years), often with a considerable break between their undergraduate and postgraduate study. Some of these students are highly motivated to complete and have considerable professional experience, and often find that a professional doctorate better suits their needs (with 17% of HDR enrolments being in Professional Doctorates).

THE BASIS OF THE FRAMEWORK

Most of the research to date in the postgraduate literature concerns the cultural aspects of supervision. Some researchers have provided checklists for the initial stages of the students' candidature by focusing on advice and strategies at departmental level (e.g. recruiting and selecting students) and for individual supervisors (e.g. clarifying roles and expectations). Holmes (1994) places particular emphasis on codes of practice for maintaining and monitoring academic quality and standards in research higher degrees. Other research has targeted students' sense of isolation once they have been selected. Johnston (1995) outlined a range of strategies for building students' sense of community and belonging in the academic community, including newsletters, information booklets, and seminar programs.

HIGHER EDUCATION MODELS

A notable exception to the emphasis on culture is a recent DETYA paper by Latona and Browne (2001) summarising research-based outcome factors associated with the timely completion of research higher degrees. The paper outlines three factors affecting the rate to complete, that is, institutional/environmental, individual supervisory and student cohort factors. Latona and Browne (2001) include in institutional/environment factors a sense of belonging, milestones and protocols and discipline-specific differences in undertaking research. For example, they report that students in science-based disciplines develop a sense of belonging through being part of a research team. In contrast, those students in the social sciences and humanities tend to work in a more intense relationship with their supervisor gaining a sense of community by co-authorship and participation in conferences. Individual supervisory factors include timely and relevant feedback from supervisors, frequent meetings and a positive relationship between student and supervisor. It is this factor in the postgraduate research experience that has claimed previously the greatest share of attention in the literature. The third factor identified by Latona and Browne (2001) is the student cohort. In this factor the authors categorise characteristics such as entry qualifications and enrolment status.

ORGANISATIONAL MODELS

The organisational literature identifies three factors associated with a positive learning environment; a positive culture, relevant structures and smooth systems. Culture refers to the shared perspectives or collectively held and sanctioned beliefs of the university (Nankervis, Compton & McCarthy 1999). Universities are generally collegial cultures, in contrast to bureaucratic, corporate or entrepreneurial cultures although pockets of these other cultures

can co-exist within the broader collegial culture. Collegial cultures assume co-operation and employee responsibility and strategies for changing collegial cultures must be cogniscent of the high level of individual autonomy characteristic of this culture.

Structure refers to the organisational arrangements for supervisors and students particularly the degree of specialisation, hierarchy and decentralisation characteristic of the organisation (Veccio, Hearn and Southey, 1996). In the case of supervisory arrangements, this may be the structure that determines the supervisory experience in terms of responsibility, power and decision making for both supervisor and student.

Systems refer to the communications processes that underpin organisational functioning (Veccio, Hearn and Southey, 1996). These processes transmit information within the organisation and in a subtle way communicate the norms, values, and beliefs inherent in the organisation. In a supervisory context they refer to systems for setting standards for supervisors and students, and also systems for setting administrative standards.

In this paper we argue that institutional/environmental factors and individual supervisory factors can each encompass culture, structure and systems. The resulting matrix can be used as a framework for developing postgraduate supervision. As the conditions within each university are different, each cell within the matrix will of necessity be empty. A contextual analysis of the university is needed before devising strategies for implementation followed by a checklist of considerations that should be used to plan strategically.

The following section outlines the dimensions of the matrix and suggests developmental strategies for each cell based on our experience at the University of Canberra.

Table 1 Developmental Framework for Postgraduate Supervision

	Institutional/ environmental factors	Individual supervisory arrangements
Cultural components		
Structural components		
Systems component		

INSTITUTIONAL/ ENVIRONMENTAL FACTORS

CULTURAL COMPONENTS

Cultural components of the institution/environment focus on recruitment and orientation to encourage students and supervisors to identify with the institution and, after identification, to develop a shared sense of community. Students need orientation to the school including an outline of the expectations of the research, and their roles and responsibilities. Often, if students understand the different roles and responsibilities, then supervisors can be encouraged to meet their roles and responsibilities. Students also need an orientation to the university and departmental/school academic mission, organisational chart, priorities, research achievements, teaching focus, and disciplinary culture. On a more practical note students need an outline of the equipment and facilities, and how to deal with common issues and problems. As well as informing students, a sense of community can be developed through newsletters, information booklets, web sites, bulletin boards, seminar programs, networking, research conferences, and student meeting rooms.

CASE STUDY FROM THE UNIVERSITY OF CANBERRA

We have recently developed a divisional web-site and an Orientation booklet for new students. The web site contains supervisory profiles that show supervisors' research interests, technical expertise and research experience. The web site also shows the roles and responsibilities of candidates, supervisors and others involved in supervision. The site directs students to others who know about important policies and procedures such as grievance procedures, and financial assistance for candidature, rules for scholarship and stipends, facilities, resources, administrative supports and services. There is a bulletin board where students and staff can place items of interest about upcoming conferences or research festivals. The Orientation booklet is intended to complement the web site although there is some overlap of important information. The booklet is written in an accessible practical fashion, emphasising activities in the division that can support social and intellectual networks and also the process of candidature from the students' perspective. The booklet also shows minimum levels of input or assistance that supervisors can be expected to make to higher degree students and that cover all aspects of candidature.

STRUCTURAL COMPONENTS

Structural components of postgraduate development at the institutional/environmental level involve all aspects of research management organisation and facilities. In universities, decision making traditionally has been organised around committee structures, the levels and layers providing a check against eroding standards. Traditional committee structures were highly decentralised and within them, comprehensiveness and representation was a defining feature of collegial decision making. Not surprisingly, such structures have made universities internally focused and slow to respond to external changes and opportunities. Recently, new management structures have emerged in response to DETYA's reporting requirements that are intended to be more responsive to change and to encourage greater collaboration in research activity. Research is being organised into clusters that will shape research output and allow a greater span of control by university administrators. As postgraduate research students are aligned with research activity, they too are affected perhaps more than any other student group. They are being organised into research clusters, their research output is increasingly incorporated into the overall output of their department or school.

CASE STUDY FROM THE UNIVERSITY OF CANBERRA

Our research management structure is organised into nine centres across the university, three in each division. Each centre has its own Director, budget and management team who report directly to the Divisional Research Institute, the research executive of the division. Our higher degree by research students are allocated to a centre on the basis of their selection of topic and primary supervisor. This allocation is intended to focus the research effort within the university and to encourage affiliation with a structural group beyond the immediate supervisor and school. This positioning of higher degree by research students within the various research centres also encourages explicit linkages with the university's focal areas of research. While science students have often benefited from their supervisors' large grants and research projects, those students in the social sciences and humanities, where there is less of a tradition of partaking in large research projects, can feel isolated. Although there may not be as many large projects in these disciplinary and subject areas, such re-positioning is likely to increase communication, collaboration and connection to a sense of community, and likely no doubt to impede purely curiosity driven research. The Division of Communication and Education has also recently appointed a postgraduate director and created a postgraduate office responsible for the coordination and welfare of postgraduate students.

The creation of this position and office has prompted further linkages across this Division and further developments in the postgraduate area, although the Division is currently grappling with ways of improving collaboration and communication between those who are in positions of responsibility in this area. Overly elaborated management structures, common features in the newer universities, can become objects of management in themselves!

SYSTEMS COMPONENTS

The higher education sector has been moving towards a 'user pay' system for some time. In 2001, the government set caps on the numbers of subsidised students (Research Training Scheme RTS places) allowed by universities, forcing a more coordinated approach to selection of scholarship and RTS candidates. In the newer universities with lower set caps than the more research-intensive universities, academics were forced to scrutinise potential candidates. Candidates, on the whole, needed higher qualifications and clear evidence of publications to be considered for entry. Entry was also more dependent on the quality of the research proposal and the potential to fit into a university area of research strength than ever before. In contrast, international students could be considered on an individual basis, their fee basis did not require the same intense governmental scrutiny. In this context, the potential became quite significant for different entry requirements for domestic and international students. In this respect, the sector needed to develop policy on the kind of higher degree profile preferred for each university and the use of consistent entry standards.

CASE STUDY FROM THE UNIVERSITY OF CANBERRA

The Higher Degrees Committees of the University of Canberra met to review applications for Australian Postgraduate Awards and Research Training Scheme places in two rounds. The first round occurred at the divisional level and the shortlist arising from this meeting was presented to the second round at the University level. Candidates with a first class honours or high distinction level pass in all graduate subjects were clearly preferred as were those with publications, prizes and awards. The research proposal was another important indicator of potential for timely completion, and thus increasingly important criteria for selection. After this selection process, divisional lists had to be collapsed into the wider university lists, forcing yet more scrutiny of potential students. A different system occurred for international students where significant staff within the postgraduate area reviewed files for suitability in relation to the current research of staff and their availability given the resources available within the division. No collective cap was placed on the numbers of international students although this fact was offset by the intense scrutiny of the files by all those who were to be involved with the student. These systems of scrutiny seemed to be working well although long delays in file management for international students is of concern and to date, there is no mechanism for allowing domestic fee-paying students into the university.

INDIVIDUAL SUPERVISORY ARRANGEMENTS

CULTURE

The culture of supervisory training is one of the most critical factors for postgraduate development. The Research Training Scheme requires universities to provide evidence of training for supervisors. While there is no one 'best practice' in the professional development of supervisors, most programs combine information, resources and skills development workshops in both formal and informal approaches. The most innovative programs, however, seem to be moving beyond information and skills development towards a more holistic approach that encourages supervisors to critically examine their practice and then act on these reflections[2]. A formal mentoring program (at Research Institute level) is one way to provide structured support for supervisors to develop professionally as reflective practitioners. The literature suggests a number of options for the format of mentoring programs: one-to-one pairing of supervisors; group mentoring of supervisors; or one-to-one mentoring relationships as part of a supervisory panel.

CASE STUDY FROM THE UNIVERSITY OF CANBERRA

In our university, at the institutional level, we utilise the information, resources and skills development workshops provided by the Centre for the Enhancement of Learning, Teaching and Scholarship. At the divisional level, we have instituted an internal mentoring scheme. Mentoring scheme partnerships comprise:
Either

1. partnering between an experienced supervisor and inexperienced supervisor where an experienced supervisor is defined as one who has supervised five or more research students to completion. (A research student is categorised as one belonging to a DETYA categorised research award as designated in the past five years). An inexperienced supervisor is defined as one who has supervised less than five research students or not supervised at all

or

2. partnering between experienced supervisors where one of the supervisors would like additional professional development on one or more of the following dimensions: procedural, substantive, methodological, or professional aspects of the supervisory process.

The Mentoring Scheme comprises a structured workshop component, periodic monitoring by a program coordinator and the maintenance of a critical incident log by the inexperienced supervisor. The structured workshop schedule is as follows:

- An *Orientation Workshop* where the aims and objectives of the scheme are introduced to potential participants, approval is gained for participation in the research project and participants are guided in selecting partnerships. After the workshop, expressions of interest will be sought from academics within the Division and partnerships will be formed.
- An *Induction Session* where the participants establish clear goals, outcomes, and processes for the mentoring partnership and where any participant issues and concerns are addressed.
- *Mid-Program Review* involving resolution of outstanding issues and concerns; assessment of progress both individual and institutional.
- *Closure* where participants assess progress and evaluate outcomes both individual and institutional. Recommendations for the further implementation of the scheme will be made, particularly in relation to university-wide implementation.

The mentoring scheme also includes updates with a designated program coordinator between workshops addresses any interim difficulties.

STRUCTURAL COMPONENTS

The literature on postgraduate student satisfaction emphasises providing clear support, guidelines and monitoring/checking of progress. There is some evidence that supervisory panels are one of the more effective ways to achieve these tasks (Cullen, Pearson, Saha & Spear, 1994; Parry & Hayden 1994). Supervisory panels were cited in one large study as the main predictor of postgraduate research student satisfaction (Cullen, Pearson, Saha & Spear, 1994). Although the precise reasons for the effectiveness of supervisory panels are not clear, it seems that they can play a key role in scoping the students' project, so that it is 'do-able'. They also can facilitate connections for postgraduate students within divisional research centres and allow both groups to gain valuable knowledge of other cultures—for example, through the appointment of supervisors from industry. Most importantly, they allow for robustness in supervision by addressing problems arising from individual interactions and from changes in personnel. Ultimately, this allows schools and divisions to detect endemic problems, not noticed easily in the dyadic supervisory relationship.

CASE STUDY FROM THE UNIVERSITY OF CANBERRA

Within our university we have introduced supervisory panels comprising primary and secondary supervisors, the director of the relevant research centre and where possible, an external supervisor. (External supervisors profitably include adjunct appointments.) While the primary supervisor takes ultimate responsibility for the student, the supervisory panel's role is to provide advice and further guidance in the study. Students need to seek feedback about the quality of their work from a variety of sources in addition to their supervisor, on the understanding that submission with the supervisors' approval alone does not guarantee acceptance of the work by examiners. The ideal composition of the panel should emphasise complementarity of roles rather than simply the number of people on the panel. One member may have substantive expertise, another methodological, yet another, procedural or professional. Each member can then complement the expertise of the other. The panel meets approximately six times at the critical periodic milestones in the students' candidature, that is, prior to the initial seminar, prior to data collection and the annual progress report, and after the first draft of the thesis. The supervisory panel is also expected to attend both the initial seminar and the final seminar. It is important to note here that supervisory panels were introduced after much consultation at all levels of the division and only after support was gained from key people.

SYSTEMS

Under the new Research Training Scheme regime, requiring timely completion of postgraduate students, there is a greater need to monitor the progress of students. Monitoring systems are needed to address problems and to communicate difficulties with relevant others; otherwise difficulties may compound. Systems for monitoring progress need to be reinforced with clear reminders of expectations about the normal and expected rate of progress of students. Systems also should be in place for advising supervisors about how to deal with questionable progress or disputes. Clearly guidelines on the web or printed material can be useful here. But so can regular meetings with others in supervisory forums, where supervisors can tacitly acknowledge norms for supervisory practice such as turn around times for feedback.

CASE STUDY AT THE UNIVERSITY OF CANBERRA

The candidate has a number of milestones to complete in the period of their candidature. These include the initial seminar and the final seminar where examiners mark the degree of satisfaction or dissatisfaction with each candidate. Progress through candidature is also typically monitored by the Divisional Higher Degrees Committee. The candidate completes the progress report summarising her/his work to date, their satisfaction with supervision, facilities etc and their general difficulties. The supervisor then completes the form and submits this to the Divisional Higher Degrees Committee. Students who feel uncomfortable revealing difficulties so openly with their supervisor and in written format can appeal to their course convener, head of school, Director of Postgraduate Studies, or the postgraduate association. The University is also planning to institute individual, confidential annual surveys for students regarding their research learning experience. These systems for monitoring progress are reinforced by reference to guidelines published on the web and replicated in printed material, notably the Orientation Guide to Postgraduate Study. Questionable progress then has a number of checkpoints where difficulties can be addressed and where this is not possible, the student can be suitably advised to seek additional help or failing this to discontinue. This latter option is very rarely used!

SUMMARY

In this paper we have provided a developmental framework for postgraduate supervision that is intended to integrate various aspects of postgraduate supervision. The framework comprised two important outcome dimensions drawn from the higher education literature and the three organisational developmental foci. The resultant matrix crosses institutional/environmental factors and individual supervisory arrangements with cultural, structural and systems components. Each cell of the matrix was illustrated with an example from the postgraduate strategy taken from policy and practice at the University of Canberra. The following Table 2 summarises the examples drawn from the University of Canberra to illustrate each cell of the matrix.

Table 2 Developmental Framework Examples for Postgraduate Supervision

	Institutional/ environmental factors	Individual supervisory arrangements
Cultural Components	Orientation booklet	Information, resources, and skills development workshops
	Web site	Mentoring scheme
Structural Components	Affiliation of PG students within research centers	Supervisory panels
	PG Director Graduate Office	
Systems Component	Tiered systems of decision making for PG student selection	Systems for monitoring progress – annual progress reports.
		Grievance systems for addressing problems

Thus, the paper posits a framework for developing postgraduate supervision that is based on both outcome measures and organisational development factors. The framework can be used to devise developmental policy and practice after a thorough analysis of the context of each university.

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[1] Equivalent Full Time Student Unit.

[2] e.g. the Postgraduate Supervisors' Development Program at the University of Sydney; and the Professional Diploma in Research Awards Supervision at Leeds Metropolitian University in the UK.

NEW DEMANDS OF NEW PROFESSIONAL DOCTORATES

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Professional doctorates designed to meet the needs of particular groups (education, nursing, business, law, etc) are now becoming established and the PhD is broadening in scope to encompass a wide range of academic pursuits. However, the combination of the PhD and designated doctorates for designated groups does not exhaust the demand for doctoral level education. Is there a role for a doctoral level qualification for those who do not wish to follow the academic path of the PhD or the designated path of existing professional doctorates? This session will argue that there is such a need and will identify and explore some of the issues to be faced in addressing such a need.

The session will focus on discussion of (a) the target population for new professionally oriented doctorates ('new knowledge workers', those who operate in areas not covered by specialised doctorates, those who wish to negotiate a transdisciplinary program) (b) the conceptual apparatus needed to both allow such courses to be accredited and quality assured at the program and individual level? and (c) the knowledge and skill demands of those who will support such courses.

THE DOCTORAL EDUCATION EXPERIENCE: DIVERSITY AND COMPLEXITY

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This paper reports on a current qualitative study of the doctoral education experience. The study, funded by DEST, investigates the nature and extent of diversity and complexity of research education across four disciplinary groups in six universities.

Over 100 in-depth, open-ended interviews have been undertaken with students, academics, senior managers and administrators and presidents of postgraduate associations. Given the nature of the supervision context as a highly personalised teaching situation, there are many potential influences which need to be taken into account. In this study, the specific influences on the doctoral experience which are considered are the type of doctorate (PhD or professional doctorate), the mode of enrolment (full-time or part-time), and the stage of the research process (early, middle, late). These are contextualised for both discipline and institution.

The outcomes of the study will:

- Highlight systematic patterns of doctoral students' experiences and the social and intellectual context of their education
- Describe and analyse the nature and extent of institutional response to this diversity and complexity
- Offer a qualitative complement to the quantitative PREQ data by providing a picture of the diversity of the doctoral education experience and of the processes contributing to perceptions of satisfaction with outcomes and quality.
- Provide a baseline for later follow-up to examine trends and change in the doctoral education experience.
- Formulate recommendations and suggestions for improving the quality of the doctoral research experience.

A NEW BREED – THE STUDENT IN THE PROFESSIONAL DOCTORATE: STRATEGIES FOR SURVIVAL

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Professional doctorates by course work and thesis, or as structured PhDs, are emerging across the spectrum of disciplines. With their applied focus, they attract working professionals. These students tend to study part time combining the demands of a successful middle or senior level position with study, family responsibilities, and community activities. They are not able to devote their intellectual energies to the task full time. Yet they see such value in an applied and staged program of research that they are prepared to juggle competing demands in order to study.

At a time when Federal Government policy puts pressure on universities to focus anew on completion rates and thus on support for postgraduates, it is useful to consider the specific needs of the new breed of professional doctoral candidates. The study outlined here seeks to explore their needs, expectations and strategies for successful completion. The study follows the paths of students enrolled in a Doctorate in Communication with the view to monitoring and adapting the program appropriately. The students are partners in the project.

The researchers will conduct semi-structured interviews with students and supervisors, and focus group discussions conducted over the period of their candidacies. In this paper, we offer an overview of the study and preliminary data.

KNOWLEDGE IN ACTION: DOCTORAL PROGRAMS FORGING NEW IDENTITIES

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Pressures to link higher education to the workplace and industry environment have created a radically different climate for postgraduate research education, and as universities struggle to accommodate new ways of structuring doctoral degrees and new ways of producing knowledge, there are indications that many traditional structures and management processes are under pressure to change. There are also suggestions that the emergence of new degrees could provide opportunities for innovative practices in the design of new curricula, new assessment methods and new types of supervision. As part of an empirical study, this presentation will report on two doctoral programs which explicitly link the theory and scholarship of the academy with the practice and professional knowledge of the workplace and community environment. The presentation will explore strategies for managing research in this new environment for doctoral education, investigate the claims about new practice, and will discuss three aspects pertaining to the development of knowledge and new doctoral identities in these two programs: context, supervision and pedagogy, and knowledge production.

ISSUES IN THE DEVELOPMENT OF A STRUCTURED PROGRAM FOR RESEARCH STUDENTS IN THE DIVISION OF EDUCATION, ARTS AND SOCIAL SCIENCES, UNIVERSITY OF SOUTH AUSTRALIA

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This paper will address issues emerging from the introduction of a structured program with compulsory requirements for research degree students in the Division of Education, Arts and Social Sciences at the University of South Australia over the past three years.

Such issues range—and intertwine—across economic, pedagogical and personal spheres, from government compliance and quality assurance to academic tradition, equity, and student perception of value. The paper will address these issues from the perspective of an officer responsible to the Dean: Research, for the implementation, assessment and development of a structured program.

A Dean of Graduate Studies was appointed in 2001 and will lead the development and integration of a university-wide framework for a structured program in 2002. As well as this top-down guidance, the Project Officer: Research must gather and take cognizance of available feedback on the effectiveness of the program from those immediately affected – EASS supervisors, Deans ofResearch, and students. In addition to formal sources of data the researcher will report on what has emerged from a series of interviews undertaken to extend this information.

STRUCTURED PROGAM OF EDUCATIONAL RESOURCES FOR RESEARCH STUDENTS (SPRRS)

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Research students in the Division of Health Sciences at the University of South Australia are offered the opportunity to participate in the SPERRS year-long program. This program is fully in keeping with the current national commitment to research training and with recommendations from the Department of Education Training and Youth Affairs on the induction and career development of research students. The SPERRS program has demonstrated a potential to life standards of research training to ensure that students complete in a timely and successful manner and exit with employable skills. The perspectives of students and supervisors are integrated into the SPERRS program which is currently constituted as:

- Core component: half -day induction and two day intensive program
- Specialist component: academic writing, data analysis, information management
- Negotiated agreement: the supervisory partnership, the research proposal, annual review and examination processes
- Year long SPERRS calendar: workshop and seminars that cover library resources, research practices, self-management strategies, social and scholarly activities, software resources and technology assistance

This innovative program facilitated by Research Degree Coordinators involves senior academic staff with active research profiles, in face to face interaction with fellow supervisors and research students debating the perennial issues of the research supervision process, the joys and pitfalls of research, the need to communicate research findings and the trajectory of research degree candidature. This paper will showcase the SPERRS program as a successful initiative in enhancing quality in postgraduate research.

THE CRAFT OF TEACHING QUALITATIVE RESEARCH: LINKING METHODOLOGY TO PRACTICE

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In this paper we shall address teaching practice associated with qualitative research education. Specifically, we will discuss craft wisdom an important but often obscured, educational practice drawing on the findings of a project in which we investigated a group of nursing academics' experiences and perceptions about teaching qualitative research. We will argue that craft knowledge offers teachers a means to inspire and engage (clinician) students to learn, not only the content and research skills required to do good qualitative research, but to learn more about the standpoint and sensibilities of being qualitative researchers. In this way craft knowledge does two things. First it helps to move beyond the content versus process polemic that often dominates educational debate. Second, by enhancing the quality of educational experience, it potentially helps clinicians to value qualitative inquiry and thus defend and use it to inform clinical practice.

PEER MENTORING FOR RESEARCH CAPACITY BUILDING AT DEVELOPING INSTITUTIONS

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South African Technikons were historically only allowed to offer basic three-year diplomas with a strong emphasis on job relatedness. Academic staff were not required to undertake research and supervise research students. The change in the higher education act and the introduction of research degrees at Technikons led to a need to promote research activities and train staff in practical research.

Technikon Northern Gauteng responded by offering staff financial support to enrol with local universities and Technikons for their masters' degrees. The outcomes of this process were not satisfactory because of failure to complete research requirements of degree programmes.

To overcome this, TNG started an action-research based capacity building project to promote research. The project used continual supervision and peer support to motivate staff in their research work. To date 23 staff members have been exposed to hands-on research training and undertaken research. There are currently 19 complete reports. Two these have been used to obtain accreditation for higher degrees at local universities. One member has submitted her report for a Master of Technology dissertation, and another is using it as a pilot study for a Masters programme.

Evaluations of two project cycles indicate that the biggest success factor in the project is the use of peer support groups and constant supervision. Based on the results of our study we propose the use of peer mentoring and supervision to improve the outcomes and quality of research development programmes in developing institutions.

SECTION SIX

SUMMARY

FINAL PLENARY PANEL DISCUSSION: ACHIEVING QUALITY AND TIMELY COMPLETION

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INTRODUCTION: PROFESSOR IAN DAVEY

The plenary session is called 'Quality and Timely Completion'. My colleagues here on my right are, in fact, responsible for the quality and I'm responsible for the timely completion.

The panellists are Leisa Richards who is the current CAPA President and whom has already spoken at this conference. When she is not being CAPA President, she's a PhD student in Biomedical Science at the University of Wollongong. She will be followed by Evan Arthur from DEST, the Department of Education, Science and Training. He is the Branch Manager for the Innovation Branch in the Higher Education Division of DEST. The third speaker is Erica McWilliam who is a Professor of Education at QUT and was the Team Leader of an EIP report on *Research Training and What Do We Learn from Doctoral Programmes and Professional Doctorates?*

Leisa Ridges
I think that we've had a lot of discussion over the course of this conference, and two of the largest things that have come up have been the Research Training Scheme and this emphasis on completions as a result of the Research Training Scheme. So, as we know, the two parts of that scheme that we need to deal with in this session are that completions are now tied to funding to universities, and that in addition to that, the completion times have been shortened.

The things that I thought of for this session are factors that influence completions. One thing that I thought of, and it links in with the Research Training Scheme, is the second component of the Research Training Scheme, which is that forty per cent of funding goes as research income to the university. One thing to look at as a consequence of that is that I hear stories of students being taken away from their PhD work to conduct work for their supervisors that's required for a grant application that they're doing this week because they're desperately trying to get more income in. Or, they're being taken away from their work to do other work that may be related to grants. I can speak from my own personal experience here, where I saw six PhD students in my Department pulled away from their work for periods up to four weeks to complete research that related to an industry project, and we were told that:

Yes, this industry project doesn't really contribute to our area of research; we probably won't ever really publish it; but all of you need to contribute to this because of the industry partner. If we do work for them, then they will fund your work next year and you're going to need them onside, so we all need to get together and work together for this reason because we're going to need the industry next year.

So there are some other issues that are coming out of the Research Training Scheme that are affecting completions, when people are getting pulled away from their projects to do other important work. And at what cost to quality is that happening: the quality of the work that they were taken away for, and the quality of their own work?

I guess that brings me to the question of manageable workloads. So, you get taken away from your work, or we've got shortened completion times, what's happening to the workload? Is it feasible for us to say *Okay, we want you to complete on time, so students start working sixteen hour days* and most people already are. Most postgraduate students are. What's the quality there? What's the quality of life there? What's the quality of the work that's coming out of that when those are the pressures that are on them? We need to address that.

When we talk about manageable workloads, we need to look at the role of the supervisor. The questions that arise there are, do we need to look at new supervisory techniques that assist students to manage and cope with their workloads, and to get the work done in the timeframe that is required? Of course when we talk about workloads, then we're going to talk about the project that is undertaken for the PhD, or the set of projects. So the question then comes down to, well, do we discourage speculative and innovative research? Do we try and pick research that we know can get done, that's pretty straightforward, and that will help with completions? I don't think that's the way we need to go, but we need to address that matter when we're looking at quality and we're looking at completions.

Other things that are going to influence completions are going to be adequate resourcing and provisions. That's very important. Again, this comes down to the government funding. So if we look at the Research Training Scheme, we see that funding comes at the end of the period, at completion time. So we've got to address there, what happens for those new universities who want to take on students and they need to fork out money at the beginning of students undertaking research? So, adequate resourcing is important.

With completions, I've seen with myself with this cutback in funding to universities and relying on other sources of funding, that students are (I mean, in my field—I can speak from Science) having to also become lab managers as well as being PhD students, because there are no technical staff there to assist with looking after the equipment—is the equipment adequate for what they need to do for their projects? So if we try and say, *Okay, we want completions*, we have to look at all the facets there. And if we want to have speculative and innovative research, then you've got to resource that research and make sure that there are things in place so that people can conduct that research in a timely manner.

The other thing that I wanted to talk about there with the funding was scholarships. It's one thing to say *Okay, we need adequate funding and resourcing at the university level*, but what about for the individual student? I think that some matters that we need to address are part-time students and how we support part-time students. Therefore, we need to look at part-time APA scholarships perhaps, and if we are going to look at part-time scholarships, then I think they definitely should be tax-exempt. So that's flexibility for the postgraduates.

When we're looking at the scholarships and we're talking about completions, it's very interesting. You have four years to complete your PhD. You can get a three-year APA scholarship and you can apply for a six-month extension. That is three and a half years, and then you've got a six-month gap there. So who forks out the dollars for that six-month gap? If we're looking at completions, then what happens there? The student will go and get work. A supervisor could fork out the money if they have the money there to possibly support them, but that's not always the situation. If we want students to complete, then we have to provide support there to enable them to complete. So why not fight for scholarships that are for the duration of the PhD, which is the four years? That's another thing we could look at.

I think what's important, and I'll end with how I started when I was asked to give comment, and that is, what is the outcome of the research degree? I think what's important is the postgraduate education experience. So there are other facets to just getting a thesis out. There's the teaching component. There's the training—the generic

skills that need to be in there. Can we afford to continue to keep that as part of the degree, or do we need to add it to the degree similar to the UK model where we have training first off and then we have the research? Do we need to think of having teaching and research as two separate components so that you can do your research, put out your thesis, and then you have six months with the university where you do six months teaching? Is that something we need to be thinking about?

We need to think about, at the end of the day, what do we want coming out of research degrees? What is the quality that we want of the postgraduate education experience? How, together in a unified approach, are we going to achieve that?

Evan Arthur

What I'll try and do is not go into any great detail of thinking behind all the implementation of the Research Training Scheme because clearly we don't have the time to do that. What I'll attempt to do is just canvas some of the issues that you face in bringing in and maintaining and adapting a scheme such at the Research Training Scheme.

The first thing to say is that it is not the case that there are any particularly easy or inevitably correct answers to the problem of how you allocate funds to individuals, to institutions as complex as universities. The scheme we're working in is that you have a Commonwealth government which has a certain amount of money. We are not, in this particular context, working in a situation where money can be linked directly to the numbers involved. It is a capped amount of money. Therefore, you have to have a mechanism by which you can allocate funds between competing claimants.

And—I made this remark yesterday and I'll probably be misunderstood again, but even so I'll say it again—at the Commonwealth level, you are very, very information poor. At the Commonwealth level you do not know, and will never know exactly, the merits of research training, of research being undertaken, within particular departments, within particular universities. You will know a number of things, but in the nature of the complexity of human society and human arrangements, there are limits to how much you can know when you are sufficiently abstract from the reality. Therefore, you'll have to deal with the data that is available and make choices on the basis of that data.

In terms of what you're going to choose, you're going to look at what the research is for and try and allocate funding in ways which will be conduce to getting what you think the money is for; getting the best possible outcome for that money. In this area, obviously in crude terms you are trying to get good research, you are trying to create new knowledge which is of value, with the very interesting questions of how you define value, but still of value to Australian society in the widest sense, and indeed internationally. You are also trying to add value to human beings. You are trying to train people in ways which will be useful to give them skills which will bid them well for their future lives.

Now what do you do? There are a number of factors that you can use to allocate funds, and we have used and will continue to use those kinds of factors. You can look at load measures. How many students are there? How much money should go for each student? There are outcome measures. How well is the research being conducted? And the standard measures of that in the Higher Education sector tend to be publications and research income. Those are not new; they have been around in various ways with various weightings.

The major thing about the Research Training Scheme is that it changed the emphasis. It looked at the situation at the time that it was introduced on the basis that there were issues about the quality of the research training experience, and looked at, are there ways, using a funding formula, which can change the balance of people's emphases between the numbers that are being put through the research training area and the quality of that experience? The mechanism that was chosen to do that was, as we have heard, to focus on completions—to make a major weighting in the funding formula to be related to the completion rates of degrees, on the basis that it was a proxy which was related (not equal to, but related) to the quality of the research experience.

Now, that decision was taken for the reason I've indicated. We are now in the first full year of implementation. This year there will be changes in funding flowing from that, with a capping mechanism so that no one is winning or losing by more than five per cent. And the losers are not quite happy with that and the people who would win by more than five per cent are desperately unhappy with that.

A number of points have been made both outside this meeting, but also in the session that I was at yesterday, and I'm sure at other sessions, about the way in which the funding formula is impacting, and possible negative consequences of that. I said yesterday, and I'll say again today, we are very interested in trying to produce a result which works. We are not interested in producing and maintaining formulae for the sake of formulae. So we are interested, very straightforwardly, in hearing in detail people's views of the impacts of the change, and we're quite happy to put advice to government as to changes in detail, or in more than detail if a sufficient case is made out that needs to be done.

Just to mention quickly on top of that, the other issue that has been raised with us and which I think is also of concern to a number of people, is the 'Research and Research Training Management Reports' which require universities to report on what they are doing in terms of research and to provide certain data on that. From our point of view, the crucial issues to that are really two: that they provide an opportunity for critical reflection about what universities are carrying out in the area of research and an opportunity to state how they are doing that effectively; and they also have data elements which allow to a certain extent that performance in those claims be validated. Again, those are there for a purpose. If people have reservations about the extent to which the purpose is being served by the instrument, we want to hear about that.

The final comment I'll make is that indeed it is true that the second year reports which were intended to be published have not been published yet, and we will be endeavouring to publish those very soon.

Erica McWilliam

I want to say something about danger and about grieving in the academy. What I want to talk about briefly is the new culture which has academics grieving the loss of what we might call the 'unique informal culture that once was research training and supervision'. Mary Douglas says that *Risk is no longer about odds; it is now about danger*. The danger in higher degree research and of supervision and its training must be minimised, and when we talk about danger we're talking about the danger of failure—the failure of institutions to deliver what they purport to deliver. Quality. We're talking about the unsustainability of programmes—prospective programmes. We're talking about the danger of waste—the waste of non-completion and the resources that go into non-completion. We're talking about the danger of low or no standards, or the inability to declare our standards. We're talking, therefore, about the danger of soft marking. We've seen a lot of that in recent times, and universities scrambling to show that, in fact, they have that well under control. We're seeing talk of the danger of plagiarism and concerns in relation to cultural difference in that area. We're seeing talk of the danger of co-authoring, and a whole range of issues around academic practices associated with higher degree research. We are also seeing development of the notion of dangerous clientele, non-traditional clientele who may be more dangerous than perhaps young, full-time males whose mothers still give them a lunch and pack them off to university.

We've heard from Michael Gallagher that the next generation of higher degree research, as with everything else, will be more professionally risk-managed. It will be so. Now, in this respect it means that the thing that we call 'know-how' will not be coterminous with what we will now call 'professional expertise in research training'. And that will be true for better and worse. For better and worse. So we are being dragged often by funding mechanisms and for other reasons to become expert as research trainers, as distinct from the thing that we did in the privacy of our rooms with individual students. It is a different place populated in a different way with different sorts of resources and a much more public and accountable atmosphere.

Now, the result of that is that academics are grieving. They are grieving the loss of the things that once counted as their expertise and their pleasures in that process. So a lot of the things that academics invested in, they are now being told are insufficient. I can understand from the CEO's point of view that that is extremely frustrat-

ing—that what they see is academics who refuse to change. What I think we need to understand, and as Peter Taylor has made this point in his work on academics and the grieving process, that grieving means that academics are changing. We don't grieve if we don't know that something has gone and that something is different. So we need to understand, I think, how that grieving looks in terms of a contemporary culture, and the way in which academics may resist certain sorts of development.

Some people seek to develop me in ways I choose not to be developed. And, of course, the developer has knowledge, and some of the people are from Health and Safety, and some of the people are from HR, and some of the people are from IT, and so on. Now I both have to resist and accommodate the ways in which I'm being developed. Just as in the Third World development can lead to regression, so too there are forms of mono-cropping for the market that we need to be careful about as we move to this new culture. I think we should value the local market gardens that we have that flourish and that keep academics alive, and that keep giving them the pleasure of their work. At the same time, we have to avoid romances about those market gardens and to understand that there are new procedures which we will have to be part of.

It is a new forensic culture which has our work out on a well-lit table. That work must be moving and visible. Learning doesn't actually look like anything, thinking doesn't look like anything. Quality audits certainly look like something and they look like a lot of paper moving around. We are in a forensic culture, we are in an audit culture, for better and worse. I think we need to understand the strengths of that culture and, at the same time, we must continue to protect our capacity to think.

RESPONDENTS

Mark Tennant, University of Technology, Sydney
I want to take up the issue of generic skills. Our two keynote speakers mentioned generic skills. The keynote speaker this morning mentioned them in relation to the generic skills of international students. Evan Arthur mentioned generic skills in his talk yesterday as being one of the rationales, if you like, for the establishment of the Research Training Scheme. I'm just wondering if any of the panellists would comment, particularly Evan, on how the Research Training Scheme provides financial incentives for development of generic skills, and what can we do about generic skills if we regard them as being important?

Evan Arthur
The Research Training Scheme, per se, has clearly been a funding formula not capable of drilling down particularly effectively into the issue of generic skills. However, we do attempt in some way to address the issue within the Research and Research Training Management Report, in that it's part of that report, that universities are expected to be able to describe what they believe to be the skills (that are in the normal formulations that one uses in such contexts) that they expect of their graduates, and to be able to distinguish postgraduates from undergraduates so that we attempt, as I said, to provide some opportunity for universities in a structured way to critically reflect on that issue and, one would hope, to have mechanisms to address that within their own structures.

Erica McWilliam
I'm aware of experiments with a graduate certificate in knowledge management or information management which parallels the doctorate. The idea is that generic skills won't be synonymous necessarily with disciplinary-specific skills. People might like to comment; some of you might actually have been experimenting with this yourself. There's a struggle around the notion of a foundational programme that cuts across faculties and across disciplines. We might all agree that Endnote is something we'd like all students to know about, but we might not agree on some of the other issues.

Some people have suggested a Graduate Certificate in Knowledge Management, created across all faculties, but people only get that when they get their PhD, so they don't rush away with that and then not complete the PhD. I think there's been a range of suggestions about the way in which we take seriously what people might need to

know across the wide range of doctoral programmes. I'm sure Leisa might have a perspective on what she thinks might constitute generic work and how we might approach it from a university's point of view.

Leisa Ridges
Interesting. I think that it's becoming more important now that we've put this emphasis, thanks to the Research Training Scheme, on completions to provide this training in generic skills. So let's say it's computer literacy. Let's say it's research training. It's time management. It's management per se. It's working in teams. We could probably list lots and lots and lots of things, but I think it's become important that if we want completions, that we actually need those skills to complete.

I don't want us to lose focus here, that we're talking also about completions and quality. Quality is important and part of quality of the postgraduate education experience is to get those skills. It's interesting that Evan mentioned this idea about 'add value' and he stopped there and gave some emphasis on how do we define value of the outcome of the research degree. I think if we want to look at the value of it, if there's some concern that the research has no value, then doesn't that put even more emphasis on the importance of generic skills that are there? So transferable skills that come out in addition to being researchers, and experienced researchers because that's what they're doing for three years, and that that adds to the value of the degree, those generic skills.

I'll just add something else, and that is the question that was asked was *What are the financial incentives in the Research Training Scheme to provide the generic skills*?, and your reply there was that you're looking for universities to find ways to provide that. But I think the problem is that universities are finding it difficult to have the resources and the provision to provide that. Yesterday a point I didn't bring up was that on your slides, when you were talking about some of the reasons why the Research Training Scheme was established, one of them in there on the bottom which wasn't touched was 'to improve generic skills'.

Margot Pearson, ANU
I would like to suggest that there's a real worry, it seems to me, about talking about generic skills as though they are additional content in the degree. There is a body of literature out there that some of you I'm sure know about, which suggests that, in fact, teaching these things out of context is a sure way of making sure they're not transferred to anything. Consequently, it concerns me that at the highest level of education, we should be suggesting adopting a model which I thought, even at the level of TAFE and so on, it seems that people are actually buying out of because it doesn't work. So, having said that, you might say *Well, what do you do?*

Well, there are two ways of going about it that I can suggest because I don't want to be totally negative about this. One of them is a model that has been suggested in the UK, which is to get students during, and at the end of their degree—a research degree, this is—to actually come up with a reflective portfolio in which they identify the skills that they have learned in addition to completing their project, and get them to therefore be aware of the very things they have learned such as time management, et cetera, without really noticing. Because, in fact, what often happens is that one only notices one doesn't have or hasn't acquired such skills, when in fact you failed to put it in place. So that's one way of going about it. That doesn't disrupt and affect the process of experiential learning that is at the core of doing a research degree.

The other approach which I think also has some merit, and we have to some extent started to discuss this in a report that's just been released on *Postdoctoral Training and Employment Outcomes*, where the issue also arises, is to actually start to think of some of the work that students are looking for assistance when it comes to Endnote, time management and so forth, that's actually a form of coaching. In other words, if a student is not picking up or becoming sufficiently competent, you might say, in these skills that are necessary to complete their degree, then indeed they might go off and get a bit of coaching in how to do it, just as you might, for instance, if you're learning to play tennis—get a bit of coaching on your strokes. You might go off and get some coaching on some of these things that you find you don't have sufficient skill in to get that degree to the quality that you desire.

In either way that I've suggested, you avoid separating out generic skills as body of content additional to the research degree, and therefore competing for space, which is a very big problem, but also completely decontextualise, and therefore, I would suggest, educationally undesirable.

Evan Arthur
I completely agree. They are definitely conceptually two different things. There is indeed discipline-specific knowledge, and there are skills. That is not in any way to say that the best way in a pedagogical sense to impart skills is divorced from discipline-specific, and that's absolutely not what the Commonwealth is saying. The Commonwealth is saying it wants to see students who acquire both disciplined knowledge and widely useable skills. We have absolutely no interest in trying to prescribe how that occurs because if we did, being as remote as we are, we would undoubtedly get it wrong. We have no interest in that at all.

Just to make one other clarification about my hesitation on value. That hesitation is driven by the concern that when I use that term, people think that a government official must be speaking strictly in utilitarian terms. Now, I'm a person who once had a great deal of specific discipline knowledge on stoic epistemology. I find great difficulty in arguing the utilitarian value of that, but I thought it had value.

Margaret Vickers, University of Western Sydney
I'm one of the universities that doesn't have very many research places left for students any more. Now, the problem that I see with the increasing pressure on completions and the risk management associated with students being admitted to those fewer and fewer places, as an advocate of people that are marginalised in the community, what are we going to do about the people who are already marginalised—about them being further marginalised? People with disabilities, illnesses, non-English speaking backgrounds, women, older members of the community—what are we doing about that? Because I see, with the diminishing number of places, that's just going to get worse and worse. Can you comment please?

Evan Arthur
I can't comment in detail, but I can say that it is a formula which is going to work across the university sector. It's not intended obviously to work in that kind of way, of affecting the way in which choices are made at the individual student level. If there are in implementation major effects of that, then I'd think that's certainly one that has been mentioned to me before and which we need to look carefully at. I would say that there is an issue which I don't want to hide away from at all in terms of differentiation amongst universities. When the overall package of reforms was introduced in 1999, one of the issues that was out there was whether or not the model of it having an equivalence of expectation of all universities, in terms of being involved in research, would be sustained in the future, and the formulae that were introduced certainly may well have the effect, and it was not necessarily an unintended effect, of providing additional concentration in terms of research intensity in Australia. Those issues were canvassed at the time, and those issues are still out there.

The current Minister has flagged his interest in wide-ranging debates on the Australian higher education sector in the context of decisions he will seek from governments towards the end of this year. He has flagged in that process the issue of specialisation of universities and concentration of research effort. So there is certainly a dialogue to be had about the role of Australian universities, and whether all Australian universities will be expected to be engaged in research. I'm not saying I'm not in a position to answer that question, because the Minister's made it very clear that there will be a process and there will be views brought on that at the end of the process. But it is clear that that issue is out there for public debate.

Leisa Ridges
I'd just like to hone in on a specific of that question and see if you could answer that, and that is that let's just say that specialisation comes in and there are some universities who don't participate in research. Of those universities that

are going to participate in research, when we look at the diminishing numbers of places for research students, how do we deal with the fact that that in itself is somewhat discriminatory towards the equity groups, and how do we address that?

Evan Arthur
Overall, we're not looking at a decline in the number of research student places. If there are movements, there will be declines in individual institutions. That's certainly true. But we're not looking at declines overall.

In terms of the detail of how you address equity issues both in research and indeed right through higher education endeavour is a question which has been addressed in the past by a range of programmes including targeted funding and requiring universities to report on their performance. It will continue to be an issue of particular interest to government, and continue to be a very difficult issue.

Erica McWilliam
I'll just simply reiterate that what Pat Thompson called 'the discourse of efficiency' is certainly not likely to help us to increase diversity. At the same time, I think we should be aware that risk managers do know that our populations are non-traditional and diverse, and they are not simply wanting to normalise the population. They know that it's not just about having young, full-time male people. They are, however, trying to place people on an imprecise continuum of normality, and I think that is part of the question; how do we know who we wish to invest in and what sort of investments do we make? I think there is certainly an issue for us, for example, in our professional doctorate—our coordinator sitting up and saying *I'm going to have to make choices now that I didn't before at this front end about who comes in*, and being very concerned that we might end up losing quantum as a result of letting in the 'wrong people'. So she is on red alert about the 'wrong people', and we hope those people don't include pregnant people, and other 'suspect' people.

Unidentified Respondent
This is a follow-up to that issue. Basically it's fairly clear that it is easier to get into some universities for people who are from equity groups. It probably appears most of them are the losers under the Research Training Scheme. Basically, currently under the Research Training Scheme there's no formula or no way of acknowledging that equity, for example, is a value that we want to continue to keep in research education. I'm just wondering if people have got ideas about how you would put that into practice because, if we don't, a number of the universities aren't going to have research places to give access to.

Evan Arthur
I wouldn't claim to be able to give an answer to that now. What I would say is that we are in anything but a static policy context at the moment. We're not in a situation where the government is saying *This is the policy and so it will remain*. The Minister has flagged he wants to have a wide-ranging review and he's also flagged, at the higher education context and a number of other education contexts, his very considerable personal interest in issues of equity and of exclusion from education. If you look at the record of his public utterances, you will find that prominently in those utterances. So that you have a policy context at the moment where it is obviously impossible for me to speculate on what might in detail be addressed, but clearly it is opportune for people who have concerns about this issue to take whatever opportunities are available, formal or informal, both now and with people other than myself, to bring those thoughts and to ensure that they are given proper weights in the review process which we'll be going through this year.

Mark Finnane, Griffith University
Evan, you said, and you've indicated in your comments today and just now, that it's not a static policy context, and for example, on the details of the Research Training Scheme, that DEST, and presumably the Commonwealth government, would certainly listen to a detail case made for improvements in the scheme. One of the great griev-

ances, I think, of the universities in relation to the scheme is the capping of the total number of places that the government was prepared to fund. I wondered if you could speak to the issues that you think might be relevant to look at a revision of that particular policy?

Evan Arthur
The question would have obviously a budgetary context and no, I have no ability to speculate at all. I mean, it would be clearly, in this as in a wide range of areas, open to various elements of the Higher Education sector to bring a case to government of the need for additional budgetary resources, and the government will examine that and make its decision. That's obviously all I could say.

Mark Finnane, Griffith University
I suppose it would be useful for this audience to know about the kind of policy considerations that go on within DEST with regard to projections of the national economic needs and social benefits arising from the production of research higher degree students. There must be issues about measuring the impact and the potential needs of a society like ours that DEST might advise the government about.

Evan Arthur
Indeed, and those things are open for all people to see. If you look at the process of discussion which led up to the announcement of *Backing Australia's Ability*, we saw very clearly the terms of discourse which were engaged in, and particularly the discourse that was engaged in that time was a case very strongly put by particularly the science community that there was a direct benefit, in this case in utilitarian terms, to society from an increased investment in research with particular emphasis, in that case, on science and technology research. That certainly was a context, as I say, which was recently visible to all and which produced a particular result.

BradleySmith
My questions are supplementary to Mark's. Recently Minister Kemp, in the determinations on Melbourne University Private, made a condition on Melbourne Uni Private having a three per cent research student load. That goes in part to the question of "What is a university in terms of student mix?" Does the Department have a view on the numbers of research students in the university as part of a defining moment of a university? I mean, would you agree with Minister Kemp as a starting point?

Evan Arthur
That was, as I understand it, taken in the context of some quite specific agreements which had been originally entered into with the Victorian government, with Melbourne University, which led to the establishment of Melbourne University Private and the detail of it, I'm not aware, but as I understand it that was an interpretation of that particular existing agreement rather than a general statement. I don't think, to my knowledge, we have at the moment anything resembling a formula which says 'This percentage of students equals a real university'. It is clearly the case that the Minister has signalled his interest in a debate on exactly those kinds of issues. Is it, to put it in crude terms (probably in accurate terms), the vision that there was one new generic type of university through Australia which people have tended to refer to as the 'Dawkins Model'. Is that still valid for Australia? The Minister has flagged he wants that question to be debated. Now, given the way that policy evolves these days, that will be a debate in which there will be a number of players, and it will not be the case that the Department's view will be the only one, perhaps even not the major one, the way that debates occur these days, in such a process.

Erica McWilliam
Just to say for people who would like to be in that debate, there's the 4th International Conference of Professional Doctorates on the 29th and 30th of November in Brisbane this year held at the University of Queensland with the three universities involved. Evan Arthur has kindly agreed to be there, and Robin Batterham will be there too, and I think that might be a very good time for us to think through some of these issues and do a bit of Round Two with Evan and others.

Helen Kavanagh, University of Adelaide
I'd like to explore the concept of research training. Say, for example, I'm a circus pony. I am not expected to make up any of my own tricks. In fact, people would be surprised if I did. But as I've been trained to perform all these wonderful tricks, it seems to me that the emphasis would be on the trainer. If someone wanted to talk about the quality of the circus tricks that I could do, the emphasis would be on the trainer rather than the pony. And I just wondered, assuming that now I'm a postgraduate research student and not a circus pony, and I am expected to make up my own tricks, and I know I'm not a pony any more (I'm expected to create new things and new knowledges and new ideas) how that fits into the concept of training, and how that fits into the whole definition that DEST has put on me that I am involved in research training?

Evan Arthur
My response to that would be that, to the extent that you're proposing an either/ or situation, I don't accept that it's an either/ or. It is, as I indicated I think earlier on, a question of balance—that yes, absolutely, the endeavour is to perform your own tricks, to make new discoveries in a particular discipline area. But it is the minority of people who will then go on to spend the rest of their lives doing further discoveries in that particular discipline area. It is likely for the majority of people that they will be taking their skills and applying them in areas quite remote from that. I can assure you, the areas I am currently applying my skills are well and truly remote from stoic epistemology. And you do acquire skills in that process, and there is training in that process. The question is, where does the right balance lie between them? I am not going to even vaguely hint that it would be reasonable to have an opinion on that. But I do think that, yes, both things are there, and government policy has been directed of late to move the balance in a particular way and, with any government policy, you always have to be careful that, when you do push things in particular directions, that you don't have what in a different context one might call 'collateral damage', or that you don't over-succeed. So yes, we need to be very careful that we're not pushing things too far in any particular direction.

Erica McWilliam
I actually don't think there's a pure vocabulary for saying what we do. I know that, again, we grieve the loss of things. There would be people in the room who would be aware of theorists who would argue that education is a form of training, who would actually put training at the top, just as they'd argue that the State is a form of government. So I don't think there's a pure way to talk about what it is, but I understand people do grieve and have a sense that something's been lost there.

I think that the word 'training' does connote a more public landscape, a different landscape in which things are occurring. I think it's quite an important discursive shift. I think it does do particular sorts of work. It means that we can't be inside private rooms, private offices, one to one. I think it does flag that, and I don't think it's a bad thing.

I think we'd better be careful about what we lose if we just say we were moving from supervision, or training, or whatever else we want to say. So I think we need to know that this world is being newly formed for us and I think we need to be looking at that without—we don't need ready-made conspiracy theories. I just think we need to be careful about the words we choose to describe what it is that we do. I think that shift is important, the one that you're flagging, and we need to think about what it means for us.

Neville Marsh, QUT
Perhaps we could ask the panel to tell us what they believe is meant by the term 'timely completion'. We've heard a little bit of data this last two days on how we're doing at the moment. We have some clues. We have a three-year scholarship, a four-year HECS exemption, five years in most institutions to complete a PhD, but it would be useful to know what we mean by timely completion, what targets we ought to be aiming for, whether in fact DEST one day will have a target.

Leisa Ridges
Okay, well the way that I would always try and figure out something like that is to go to the extremes first and then try and find the balance. I don't think there would be any PhD student out there or any research student out there who would want to take eight years to complete their PhD. It starts encroaching on all other facets of your life, and if we're going to talk about quality and completions, that's just a pretty poor quality of a lot of different areas. So if we're talking about a completion time then, I think what we have is a four-year completion out there on the table, and that's what the Research Training Scheme is stipulating. But I think if that's the completion time that we're going to go for, then we need to consider what support is in place and what is required to enable students to complete in that time. So: the nature of the research; the provisions surrounding that research; the training of the student to enable them to undertake that research; the preparation of the student. I'm not saying that you're not learning things as you go along by doing that research, but the preparation of the student for that research, i.e. that might come down to supervision and choosing your project knowing what is involved in your project and being fully aware of that as you set about undertaking our research.

So I think timely completion is completing in a time that it doesn't mean that it's taking up a huge chunk of your life, so let's work with the four years. But timely completion is being able to do that in a manner which means you get quality research at the end of it, but you've also had a quality education experience while you have done it, and you've had quality of life as a result of that time and during that time.

Evan Arthur
I haven't got much to add to that. It seems to me that, first of all, there is not, and will never be, any exact science in this. The particular way in which we do doctorates in Australia is different from the way other countries do them, in what's in them, the time available, other results, some interesting historical processes. You have at the moment, I think, a reasonable consensus that the period you're talking about in terms of the standard you expect, the stuff included within it, and the timeframe, bringing that to a relative four years.

Erica McWilliam
There is also another way of talking about it, which is productive separation. I think what would be interesting to consider, in terms of Margaret Mead's research going on as it did for years, what might constitute a productive separation from long-term ethnographic studies, say? In my own PhD work, I did a longitudinal study and I probably wouldn't do that now, which is what I think is one of the concerns about timely completion becoming a form of mono-cropping.

I think that if we look at what we might mean by 'productive separation' and try to hold the diversity of projects that we want, there are some very messy sorts of projects—practitioner research type projects, action research projects, ethnographies and so on—which are often very time-consuming. What we wouldn't want is to shut that down in the interest of timely completion. So I think what's important, from my point of view, is when might a timely completion not be a productive separation, and how might we hold onto the idea of productivity in the largest sense of knowledge creation and intellectual life?

Leisa Ridges
I agree with what you say there, that the nature of the project shouldn't be hindered. I wanted to say that when I was talking about four years there, I probably shouldn't limit myself to four years, but I'm referring there to full-time. You've also got part-time, and part-time should be encouraged in the diverse student body and how we undertake our research these days, so that's really important as well.

Tom Clark, University of Melbourne, Postgraduate Association
Just a brief reprise on research training. I think part of the point there, and this has come up at the three quality conferences I've been at, is that postgraduate research students see themselves as engaging in something much broader than research training, generally feel insulted by the limiting nature of the term, and I and my colleagues are

perplexed that we have to keep coming back to this nomenclature debate—why the policy cannot adopt a more respectful terminology, although it has been put on notice at least four years ago that the terminology was inadequate in the eyes of the primary stakeholder it seeks to address: postgraduate research students. That was a reprise.

The other point I want to make: I appreciate, Evan, that you don't want to tell universities how to do their business. And when I say you, I mean the government doesn't want to tell universities how to do their business. I think that's a constructive development.

Without stating it, I think you're acknowledging that there are systemic effects of the Research Training Scheme. You've said if we can show major problems then the government will look at those, and I wonder what your thresholds are for a major problem. But in terms of the systemic effects, we see an acceleration of disciplinary dieback, we're seeing increasing concerns about punitive approaches taken by universities towards supervisors and students when completions are running overtime. I think these are systemic problems. I think part of the problem here is that the government has laid down a very powerful policy instrument which, as Hillary Pearse pointed out, measures—is a proxy for efficiency, not actually for quality. Completions are a proxy for efficiency. The response of universities has been, I guess, to find ways to become more efficient. I haven't had any sense from government that it acknowledges that universities have focused on efficiency in ways that the government might find harmful, or that the government is going to do anything about the systemic effects. And I wonder to what extent the government is prepared to acknowledge that there are systemic problems already in evidence as a result of the Research Training Scheme?

Evan Arthur
I certainly agree that such a thing as the Research Training Scheme has systemic effects. It's intended to have systemic effects. That's clear from the design. The issue of whether there are systemic problems and at what level the government would consider that the issues have been raised are sufficient to change the policy, obviously I cannot speculate on at the moment. That's a matter for government to determine. All I have stated is that both in an informal sense we are interested in dialogue on that, but in a formal sense the government has put a process in place for review of a whole range of questions in Higher Education, and there is an opportunity to put views to that. Whether or not the governments would make changes at what degree of evidence a particular Minister would regard as compelling, obviously I can't speculate on that.

Peter Taylor
We've had a lot of discussion just in this session on completion. I'd like to come back to the issue of quality for a second. We saw in Howard's presentation yesterday that even though there's been a massive increase in intakes into doctoral programmes—research programmes—the number of completions is really not matching that at all. That implies that there is, in fact, some changes going on within the nature of postgraduate research experiences.

When I was doing my doctorate I stopped and looked back at successful theses and went back quite a few years and was quite stunned to see the quality of some of those earlier theses that had been approved. I'm a little bit concerned that there is a standards inflation going on in relation to quality, and that we're not really naming that. There is an issue, and Erica's raised this in relation to soft marking, but there's an issue in relation to hard marking. And particularly when you put some limits around the time to completion, that perhaps it's time for us to stop and look at actually what we're trying to achieve within these programmes and to put some limits on it.

CHAIR'S CONCLUSION

I'm going to make a comment on that, because I think that's a very, very interesting point at which to stop and ponder. I mean, there was a Golden Age when everyone could read and write, but if you believe people who are at primary and secondary schools and so forth, there never was a Golden Age. We know that and perhaps that's an issue that we do need to think about. It opens up a whole new debate and because I'm a stickler for time and we're two and a half minutes over, I don't really want to follow it. I would like you to join with me in thanking our panellists. I think they have provided quality.

But before you do, and this is not a male singling out a male, I just wanted to make a comment about Evan who clearly got most of the questions as though he is the architect of this demonic scheme that is being visited upon us. Clearly this is a political process that is causing this and it's not just DEST. It's about politics and we must always remember that. Evan can't comment on that, but nonetheless I thought I would. Thank you very much.

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