Quality in Postgraduate Research
Conference, Adelaide, April 2006

QPR 2006

Quality in Postgraduate Research

Knowledge Creation *in* Testing Times

PART 1: Refereed Papers

Edited by Margaret Kiley
and Gerry Mullins

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THE UNIVERSITY OF ADELAIDE AUSTRALIA
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Quality in Postgraduate Research
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Quality in Postgraduate Research:

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Editorial

Gerry Mullins and Margaret Kiley
Editors

Since 1994 the biennial *Quality in Postgraduate Research* conferences have provided 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 conferences have proved popular with policy makers, supervisors, postgraduate administrators, educational researchers, postgraduate students and academic developers

The proceedings of the previous six Q*uality in Postgraduate Research* Conferences, 1994-2004, are available at http://qpr.edu.au/. This archive is a valuable resource for prospective presenters. For the purposes of the conferences, 'postgraduate research' has referred to higher degrees which have a substantial amount of research as a major component.

Universities find themselves challenged to develop and defend their role in today's knowledge economy. The role and impact of research education in the modern university is critical in this debate. Outstanding leadership and management skills will be required to maintain and develop quality in research education in this environment. The theme of the 2006 *Quality in Postgraduate Research* conference, *Knowledge Creation in Testing Times*, will provide an opportunity to explore these issues. The conference will be held 20-21 April 2006 at the Stamford Grand, Adelaide and details are available at http://qpr.edu.au/2006.

Abstracts and papers were invited that address the following themes:

- The university in a knowledge society
- Changing conceptions of quality
- Globalisation and capacity development
- Managing the quality of research education
- The role of doctoral education in revitalising the academy
- The impact and evaluation of research education
- Sector differentiation: Its impact on research education
- Leadership in postgraduate research education.

The nine papers included in this set of refereed proceedings represent an interesting range of responses to the Call for Papers. We are beginning to see the development of international benchmarks as outlined by Hall, Evans and Nerad and new models of the doctorate as discussed by Hodges, Malfroy and Vaughan. The notion of a 'community of practice' or 'community of learning' has been taken up by several authors e.g. Melles, as a useful way of discussing the research education community. There is continuing interest in research training, and Martin, Drage, Sillitoe and Clingin outline the particular challenges facing small/new universities. Examination has often been a topic at the conferences. Hall discusses the Canadian examination practices and Hill, Sankaran and Swepson write about their experiences of examining. A new area of research for the conferences is Honours as outlined in the paper by Shaw and Holbrook. And finally, as Albion discusses, online contexts for both research development and collegial interaction are emerging in several institutions.

The purpose of publishing these peer reviewed papers before the conference is to whet the appetite of participants and to provide delegates with a chance to

read what some of the presenters at the conference have to say before the event so that they can attend the conference with issues in mind.

We hope you enjoy this sample of the QPR program and look forward to an interesting and enjoyable conference.

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Feasibility of international comparisons of PhD program times-to-degree and completion rates

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Abstract

Can one usefully compare doctoral times-to-completion and completion rates for institutions in different countries, or are there too many confounders in the national contexts of the universities for such a comparison to be useful? Based on an attempt to compare three institutions, we find that issues of definitions and data availability are the major stumbling blocks. National and institutional contexts also complicate matters. Because of these complications, comparisons are difficult to make, but it might be possible to account for those confounding issues to gain some insights from such comparisons.

Introduction

For a number of good reasons, there is an increasing interest in comparing doctoral programs across national boundaries. There are expanding flows of students internationally, and those students would like to have better information about the choices open to them. Governments in a number of jurisdictions are interested in more 'efficient' production of doctoral graduates, and often look outside their borders for examples to make their points in this regard. With EU universities moving toward a common framework as a result of the Bologna Process, comparisons with other countries' doctoral education processes and outcomes are likely to increase. Finally, institutions themselves wish to 'benchmark' their own performance with good performance elsewhere in the world, to see if there are ways they can improve.

In this context, it is reasonable to ask if it is possible to make legitimate comparisons of doctoral programs that operate within different national and historic contexts. The three authors of this paper each have extensive experience in working in doctoral education in a different country. Our purpose in this paper is to attempt a comparison of some doctoral program outcomes, in an effort to identify the pitfalls and possibilities of making cross-national comparisons.

The first issue to be addressed is what topics it is plausible to consider in such a comparison. Certainly the underlying concern in any such effort is the overall quality of the graduate program taken as a whole. That, however, is a difficult concept to address even within a single country, as is described in the recent methodology report for a new survey of research doctorate programs in the US (Ostriker, 2003). That report identified several shortcomings in the previous such NRC-supported survey (Goldberger, 1995). The one that is particularly important for this discussion is that the survey was based on a "flawed measurement of educational quality", in which the "reputational measure of program effectiveness in graduate education…confounded research reputation and educational quality." Even if it were possible to assess the reputation of graduate programs, to attempt to do so cross-nationally would introduce unavoidable national, cultural, or linguistic biases for those doing the rating.

The one measure from the 1995 survey that appears to make sense cross-nationally is the median time to completion of the degree. Surprisingly, the 1995 study did not include a related objective measure that is probably equally important, namely the percentage of students who complete the degree. One might think that these two items, completion rates and times to completion, are relatively easily measured in any country, and therefore could potentially serve as a basis for cross-national comparisons. However, as the following pages will show, undertaking this type of measurement and comparison proved to be quite complicated. There are many variations and complexities hidden within the definitions of their measurement that make institutional comparisons far from obvious, and would make generic cross-national comparisons nearly impossible at present. As a result, we focused on trying to compare our own three institutions, so far as that was possible.

One earlier cross-institutional and cross-national study worked in terms of survival and hazard models to address completion rates and times (Bergman, 1994). That study focused on specific disciplines, and noted that in general "similarities in doctoral degree completion patterns may be predominantly attributed to disciplinary effects rather than to the attributes of an institution or a nation" (abstract). We have attempted to control for disciplinary effects in our study by classifying the results into four or five broad fields of study.

One word of caution before proceeding: often the same word is used with different meanings in the different countries, or different words are used to describe the same concept. With two of the three authors from North America, there is a bias toward that terminology here, although we try to make note of it when we are aware of a difference in language. The next section of this paper addresses the issue of feasible ways to measure completion rates and times. Following that, some quantitative comparisons are provided, drawing on numbers from our own institutions when possible. To understand or explain the numerical results, we then turn to a discussion of salient issues about the national context within which (post)graduate education occurs, including the educational systems prior to the PhD. The concluding section returns to the original question: are such international comparisons feasible or helpful?

Potential ways to measure time-to-degree and completion rates

A number of methods have been used to measure the two indicators of interest, but several can be eliminated for purposes of a cross-national comparison. This section discusses the set that has been used, and offers a rationale for focussing on only one for each indicator.

Consider time-to-degree (TTD) first. Four measures are in common use. The US Survey of Earned Doctorates (SED) (Hoffer, 2003) uses three (p. 20): "(1) the total time elapsed from completion of the baccalaureate to completion of the doctorate, (2) the total time elapsed while in graduate school [anywhere] to completion of the doctorate, and (3) the age of the doctorate recipients at the time the doctorate is awarded." A fourth measure used in earlier SEDs and elsewhere is the total registered time for the degree.

Of these four measures, only the total elapsed time is appropriate for an international comparison of graduate programs. Age at PhD completion, and time from baccalaureate to completion, are important for labour force planning, but that is not the focus of our paper. In addition, these two measures are culturally dependent. For example, Australian PhD students are older at the time they begin study than are US students (Holbrook, 2004), with the result that both of these measures would be distorted in a cross-national comparison. Similarly, there are disciplinary differences, with Humanities and Social Science students in the US tending to stop out of school between bachelor's and graduate work, unlike students in the Science and Engineering disciplines.

Registered time, the fourth potential measure, reflects the policies and regulations of each institution, and/or funding regimes in the different countries, and is therefore also not a useful measure of how much of the student's time the degree actually takes.

Elimination of these three measures leaves as the measure potentially useful for international comparisons the total time elapsed from first registration to the date that the degree is completed. Even this definition, however, leads to two issues of detail. The first issue is whether that first registration should be in graduate school anywhere, as in the SED; at the school at which they received the doctorate; or specifically in the doctoral program that was completed. The SED approach is not feasible here, as most institutions do not have detailed information on previous universities attended. Either of the other two definitions has both advantages and drawbacks. We three authors ourselves do not agree on which is better, and that disagreement reflects in large measure the nature of the graduate system we each work in. Ultimately, the abstract debate must yield to the data that are available for the comparison, and it is in that context that we will return to this definitional issue.

The second issue in the definition is when the degree is deemed to be completed. We have used the date when all requirements for the degree are completed, including external examination, revisions, and final submission of the revised copies. One reviewer suggested that the appropriate time is when the thesis is submitted for external examination, since the examination process, revisions, and the time to produce the library copies can together take as much as six months. It is our view that it is the fulfilment of all requirements that finally allows the student to get out from under the shadow of the doctoral degree requirements. Submission for the external examination still leaves the student with concerns, and usually work to do. In this regard, it is useful to note that HEFCE's recent study of PhD completions uses the completion of all degree requirements, and not submission date (HEFCE, 2005).

There is also the issue of whether TTD should be measured for entering cohorts, or for exiting cohorts (i.e. those who graduate in a given year). Bowen and Rudenstine (1992) conclude that the only correct way is to measure on the basis of entering cohorts, which is therefore what we propose for the comparisons, again depending on data availability.

With regard to completion rates, entering cohorts must clearly be the basis for calculation, since these rates are defined as the percentage of entering students who complete the degree. The issue is when they should be measured. Ideally, one would prefer to use a number of years from entry such that all, or at least almost all of the students have completed the program (or dropped out of it). As with times-to-degree, however, the nature of the data that are available will take precedence over any a priori definition. It therefore becomes important to be clear about the definition of completion rates that one is using, and to take that into account in the comparison. It is also important to be aware that completion rates can be strongly skewed by differences in enrolment patterns in different disciplines. Humanities, social sciences and education for example have high rates of part-time enrolments at some of our institutions, and thus inevitably lower completion rates and times within any specified period, unless analyses can be restricted to full-time students.

Quantitative comparisons

Our initial effort was to compare national numbers on these two measures, but that proved impossible for two reasons: either the data do not seem to exist, or the definitions underlying them differ too much across countries. For Australia, the closest to any kind of national numbers on degree completion are in a federal government study done in 1999 on the 1992 entering doctoral cohort of domestic students (i.e. excluding overseas students) (Martin, 1999). In that seven-year period, only 53% of the doctoral students had completed their degree, and 18% were still studying. Although the US SED has numbers on times-to-degree, there seem not to be any national numbers on completion rates. Canadian time-to-degree and completion rate data are available publicly only for the 1992 cohort (nine years later), and only for about 2/3 of the national doctoral enrolment (CAGS, 2004).

For both of these reasons, we gave up on looking at national data, and turned instead to data from our own institutions, to see if at that level, where we could have better control of definitional issues, a comparison is feasible and meaningful. We recognized that at the institutional level, and wishing to break numbers out into four or so broad disciplinary fields, it would be necessary to combine the data for several entering cohorts in order to have a large enough sample for meaningful analysis. Unfortunately, the University of Washington publishes time-to-degree information only for exiting cohorts (http://www.grad.washington.edu/stats/TTD/index.htm), and does not report completion rates; hence we were not able to use UW data for this comparison. Fortunately, there are US data recently published about Duke University (Siegel, 2005), and we have been able to use those instead. Table 1 shows the results across the three institutions for times to completion in four broad fields of study. We have been able to ensure a close match of departments within these broad fields for Melbourne and McMaster, but for the Duke numbers have simply taken the published values, listing Humanities and Social Sciences both under the Arts category, resulting in two lines of data for that category under Duke.[1]

Table 1. Doctoral outcomes for three specific institutions

	Melbourne			McMaster			Duke		
	N	% compl	median TTD	N	% compl	median TTD	N	% compl	median TTD
Arts	413	54%	5.7	219	53%	5.0	344	61%	6.7
							450	60%	6.0
Eng'g	323	69%	5.0	153	76%	4.3	259	60%	4.9
Life Sci	703	76%	4.7	142	77%	4.0	471	73%	5.5
Phys Sci	386	74%	4.7	158	75%	4.0	379	60%	5.0

[1]For Melbourne, the analysis was done as of 14 May 2003 for entering cohorts for calendar years 1992 through 1996. That is, students had between 6.37 and 11.37 years to complete their degrees. The McMaster study was done as of August 31, 2004, for entering cohorts from September 1993 through August 1998, providing between 6 and 11 years for the students to complete. The Duke study considered PhD cohorts matriculating from Fall 1991 through Fall 1995 as of Fall 2004, providing between 9 and 13 years for the students to complete. Although this is somewhat longer than for the other two institutions, given the median TTD it should not affect the comparison too much.

In all three cases the data refer only to students who commenced their doctoral studies on a full-time basis. One reviewer suggested that this is an inadequate control of differing proportions of Full-time (FT) and Part-time (PT) candidature, and suggested that FT-equivalent (FTE) candidature should be used instead. There are two practical problems with this suggestion. First, it is not obvious what rate of equivalence should be used for PT. Australia treats it as equal to half of full-time, but Ontario treats it, as 30% of FT. Which is correct? Second, to move to FTE as the basis would require going into the term-by-term details of every student's record. That in turn would make doing such comparisons as this one even more difficult than they already are, and would reduce the likelihood that they would be done at all. Restricting the analysis to students who began their programs on a FT basis at least removes the most obvious inequities from the comparison. In addition, it seems plausible that a student who began full-time had initial intentions of finishing on that basis, or at least more quickly than had they started part-time. It might be interesting to do a similar study for students who began a program on a PT basis.

The same reviewer argued that time on leave should be omitted from the calculation. We are of mixed opinion. While we have some sympathy for this view, there are three reasons for including leave time. First, it is often the case that work continues on the degree even while a student is on leave, whether the leave be for family reasons, for illness, or for employment issues. Second, the requirement to complete the degree remains with the student while she is on leave. Using calendar time to completion does not reflect the demands made on the university's resources, but may reflect the impact that the doctoral work has on the student's life. Third, and most important for the present study, is the practical point that the calendar time data were available from analyses already done at Melbourne and Duke. Omitting leave time would have entailed a complete re-analysis, by other people who have access to the individual-level student data.

TTD in all three cases is measured as total calendar time between start of program and date of completion, but there is an important discrepancy in the data with regard to the start date. Melbourne and Duke admit students directly to the PhD, but have calculated the start date from the time of first entry to graduate studies at their university. For those few students who first enrolled in a Master's program, but then upgraded to a PhD program, the start date was the date of entry into the Master's. At McMaster on the other hand, most departments require a Master's degree prior to entry into the PhD, and TTD for the PhD is generally calculated from time of entry into the PhD. A special analysis was run, to count the time from start of the Master's for those who transferred to PhD status without completing the Master's, in order to match the Melbourne analysis. But the time spent in Master's work has not been counted for those who completed the Master's before beginning PhD work. This is consistent with standard Canadian practice, as reflected also in the data in the report by the Canadian Association for Graduate Studies (CAGS, 2004).

Even recognizing that inconsistency in definitions, the first thing one notes in these numbers is that not only is the general pattern of completion rates consistent at Melbourne and McMaster, lower in the Arts than in the Sciences, but the rates themselves are almost identical in all but Engineering. At Duke, completion rates follow a different pattern, with essentially the same completion rate across all areas except Life Sciences. It is only in Life Sciences that the completion rates at all three institutions are similar. In the Arts, Duke's completion rates are noticeably better than at the other two schools, which may relate to the presence of their Center for the Humanities, and the fact that Duke has focused resources on the Arts disciplines, at least relative to the other two schools.

These completion rates are lower bounds, not final numbers. At both Melbourne and McMaster, for which we have more detailed data as well, there is a small percentage of students still in program at the time these numbers were tallied. The highest percentages are not surprisingly in Arts. At Melbourne, 24 of 413 entrants, or less than 6%, still remained enrolled or expected to return. For McMaster Arts, the corresponding numbers are 7 out of 219, or just over 3%. While the final completion rates may be higher than the ones reported in Table 1, they will not be markedly higher. There is also the question of how long one must wait to perform such calculations. Two of Melbourne's students who began in 1992 were still enrolled or expected to be as of May 2003. It should not be necessary to wait until every student has either completed or dropped out of a program before one can calculate useful statistics such as are discussed here.

For times-to-degree, McMaster generally has the lowest numbers (but this is affected by the treatment in the Table of prior Master's degrees); Duke and Melbourne have similar times in Engineering and Physical Sciences. Duke is almost a full year longer in Arts and in Life Sciences.

The conclusion from this table is that these two primary measures of doctoral outcomes, completion rates and times, differ in identifiable ways across the three institutions. The next section discusses some of the reasons for these differences, drawing on aspects of the national system more than on the individual universities.

Potential reasons for the differences

We have identified eight potential reasons for the differences:

- the nature of undergraduate education
- the structure of the PhD program
- the proportion of students completing a Masters degree prior to the PhD
- the presence or absence of a requirement for continuous registration, and its relationship to the financial support provided to students
- the governmental context including funding of the universities
- the definition of full-time study, and its consequences for tuition fees and student employment
- the proportion of students studying part-time, and
- the national job market as reflected in employment prospects for graduates.

Nature of undergraduate education

Undergraduate education in the US is less specialized than that in the other two countries. The Australian undergraduate degree is the most specialized, and builds on a secondary school education that is also more specialized than in the US or Canada. As is often the case, the Canadian university system falls somewhere between the US and the UK systems. In this case, since the Australian is largely modelled on the UK, the Canadian ends up part way between the US and the Australian. A Canadian student does not enter university with very much previous specialization, as one would in Australia, but more specialization is encouraged (and often required) within an honours undergraduate program than in the US.

As examples, we looked at Physics and English undergraduate programs in each of the authors' own institutions. The minimum course requirements, expressed as a percentage of the total course load over four years, are shown in Table 2. The differences among the three institutions are not as great in English as in Physics, where Melbourne's requirement is for twice as much physics as at Washington, and more math as well.

Table 2. Percentage of total four-year program required in specific disciplines

Physics	McMaster	Melbourne	Washington
total physics reqd	55	63	31
math	17	19	12
other science	10	3	5
elective	17	16	50

English	McMaster	Melbourne	Washington
total English reqd	50	53	42
other languages	0	0	8
other Humanities/Arts	0	0	0
elective	50	47	50

At Washington, "the College limits to 90 the number of credits from a single department that the student may elect to count in the 180 credits required for the baccalaureate degree." (http://www.washington.edu/students/gencat/ 20 April 2005). Hence no more than 50% of the work over the four years is permitted to be in physics, which is a lower proportion than is required in physics at the other two universities. This type of limit to specialization has historical roots. Clark, for example, describes the way in which the American undergraduate college developed as generalist education. In the late 18th century and into the 19th, "the four-year uniform college program was defined as the right place for the broad preparation of the educated person." (Clark, 1995). When research and doctoral education began to occur in American universities in the late 1800s, "the general undergraduate program was the immovable object" (both quotes from p. 121), which was maintained even as the research imperative led to the addition of new structures within the university. Because the undergraduate preparation is not specialized, graduate education in the US may have to fill in some of the gaps in the specialities of a discipline before a student can begin to consider undertaking advanced research for the PhD. This may explain some of the differences in times-to-degree.

Structure of the PhD program

The doctoral program structure reflects assumptions about the undergraduate background (but note that each of the three countries admits doctoral students from the other two). Australia has in the past had no required coursework for the doctorate, although formal coursework is increasingly being required in some programs (e.g. Economics and Commerce). Canada requires about one year of coursework, although that is often after graduate coursework as part of a Master's degree. Two years of coursework tends to be the norm in a US doctorate. If these differences in coursework requirements were the explanation for difference in TTD, one might expect time to completion to be shortest in Australia, roughly a year longer in Canada, and roughly two years longer in the US. This is not consistent with the order of the data in Table 1 (keeping in mind still the difference in the start time for the TTD measures). While the structures of the programs are perhaps a contributor to the differences in time to completion, they are clearly not the main cause.

Proportion of students completing a Masters degree prior to PhD study

The current official view of the Ontario Council on Graduate Studies is that an Honours Bachelor's degree alone is not sufficient for admission to PhD: a Masters degree is also needed. As a consequence of this restriction, over half of the PhD students at McMaster had completed a Masters degree prior to starting their PhD. In some disciplines, it is common practice to admit a student to a Masters program, and then if they are progressing well to promote them to PhD without finishing the Masters. (When this happened, the start date for the PhD was backdated to the start of the Masters for calculation of Table 1.) This happened to roughly three-quarters of the Health Sciences PhD students, about half of those in Science and Engineering, and few if any in the Arts disciplines. By contrast, most Melbourne students go directly from the Honours program into the PhD. Similarly, at Duke most students are admitted directly to the PhD following the four-year bachelors degree. It seems reasonable to expect that the advanced coursework of the Masters degree, plus the prior experience of doing a graduate level thesis should give the student an advantage in completing the PhD, if the Master's required a research thesis. However, data from the University of California system showed quite the opposite result: students without a Master's degree completed both their graduate study and their PhD itself in less time than those with a Master's degree, whether the Master's was from the same institution as the PhD or a different one (Nerad, 1991).

Continuous registration, and student support

One major difference among the institutions is the expectation regarding student registration during the summer term. Melbourne and McMaster (indeed Australia and Canada generally) expect students to remain fully registered (enrolled) throughout the year. They also generally try to provide financial support that is consistent with that expectation. In contrast at Duke (as at many US schools), it appears that enrolment for the summer term is required and expected only of those who have financial support from the university, whether scholarship or research assistantship. Unsupported students are free to allow their enrolment to lapse for the summer while they earn money outside the university, and then return to enrol again in the fall. This is likely to have a larger effect on calendar time to completion than many of the previous potential explanations.

This explanation also relates to the differences across the broad fields of study. In the US and Canada, science and engineering (including health sciences) receive from various sources larger funding for their doctoral students (Nerad, 1991). Social science and humanities fields have the lowest institutional and national funding other than Teaching Assistants. This discrepancy is compounded by the fact that in science and engineering the research assistantships often permit students to be working on research closely related to their dissertation, which is not often the case in social science or the humanities. Thus the nature and source of financial support is a major explanation of the differential time to degree among broad fields.

Governmental context including funding

The fifth potential explanation of outcome differences is government policy, and particularly policies related to funding of universities. Although often less of a driver of PhD structure and outcomes than the governments would like, both of these are nonetheless significant constraints on the programs. In Australia, the funding to universities by the government has since 2001 been limited to four years of study for each doctoral student. (DEST, 2004) Section 8.2. (It was previously five years.)

The governmental situation in the other two countries varies by province or state. In Ontario as in Australia, universities are funded on the basis of student enrolments, up to a maximum number of students. The funding to a university on behalf of graduate student enrolment is also time-limited. A university can receive funding for an enrolled doctoral student for anywhere from three and one-third years to four and a half years depending on whether the student did a Masters degree and how long that took. In a number of US states there is no limit on the number of years for which the university is funded for a student. However, for a private school like Duke, this is a non-issue, as there is no direct government funding per student. The direction of the differences in TTD is consistent with this explanation, but the average times exceed governmental funding limits, so this is not a complete, or even a major explanation.

Definition of full-time study

One might expect 'full-time student' to mean the same thing in all countries, but it does not, and the conditions that attach to it are different. Melbourne limits full-time students to 6 or 8 hours of employment per week, and if a student is not full-time, he or she loses the federal scholarship most have. McMaster (and Ontario generally) limits full-time students to ten hours of employment per week "on average in any one term". The US has the most decentralized system, with different regulations in each state, university, and sometimes department. Full-time status is usually based on the number of units being taken; treatment of thesis-only registration is handled differently by each institution. Full-time students are often allowed up to 20 hours per week of employment at the university as a research or teaching assistant; there is no limit on off-campus work. As a consequence of these differences, the amount of time that a full-time student has available to devote to their studies (and specifically their thesis) may vary considerably across the three countries.

This item alone may be one of the largest contributors to differences in time to completion. Assume for sake of argument a 40-hour work week (although 60 may be closer to the mark for a student heavily involved in thesis research). Then a Melbourne student has 80% of their time available for research; a McMaster student has 75%; and a US student 50%. All else being equal, one could expect completion times to be in the ratio of the inverse of these, e.g. 3.75, 4, and 6 years respectively. These are relatively close to the actual numbers in Table 1, so this potential contributor to the differences may well be a major one. Note that it implies nothing about the relative merits of the different programs or structures, nor about the 'efficiency' of the various systems or universities.

Proportion of students studying part-time

A further distinction among the three countries' doctoral programs relates to the proportion of students who undertake doctoral work on a part-time basis. Unfortunately, there seem to be no consistent national data on this variable. The SED survey does not even ask about this question. Similarly, the Canadian study does not report on this variable, although the data were collected. Australian data suggest that part-time doctoral students are 45-47% of the total (Terry Evans, personal communication, December 2005). Nevertheless, anecdotal material suggests that the proportion of students studying part-time for a PhD is higher in Australia than in the other two countries. There is also considerable variation in this across disciplines. Obviously it will affect total time-to-degree, so it is a confounder that should be kept in mind, as was discussed above.

National job market, and employment outlook

If students know that there are jobs available in their field, they are more likely to complete the degree, and to do so more quickly. Hence the employment market by field of study is also an important determinant of completion rates and times. To the extent that the market for PhDs is a national rather than international one, this factor will have a differential effect on institutions in different countries.

Conclusions

Given all that has been discussed, we come back to the initial question: Are such international comparisons feasible, or meaningful? The first answer to that is that the lack of necessary and appropriate data is probably the greatest stumbling block at the moment, whether for cross-national comparisons or simply for cross-university comparisons within a single country. That problem is starting to be overcome, however, as more institutions recognize the need for such data. If the necessary data are available from several universities in several countries, what can be learned by comparing the numbers from institutions in different countries?

Probably the first thing to be learned is that one needs to look beyond the numbers themselves to know what they mean. In the three comparisons made here, we would say that the differences between the US context and that of the other two countries are probably too great to allow for a meaningful comparison. This includes differences in undergraduate and graduate program requirements, in the hours of employment permitted for full-time students, in the absence of a requirement for continuous registration, and in the proportion of students' time spent in part-time status (even for those who started full-time).

On the other hand, in the comparison between Melbourne and McMaster the differences in those same factors are not so large. Hence when various potential confounders can be shown to be of little effect, a comparison between universities in different countries can be valid or useful. In this case, the fact that times to completion tend to be a bit shorter at McMaster despite the presence of roughly a year of course work may suggest that the coursework does not slow down time to completion, or may in fact expedite it – except that there remains the confounder of the prior Master's degrees done by many McMaster students.

All of the preceding discussion has been implicitly about time to degree, and the reasons it may be different in the different countries. The longer it takes to complete a degree, the greater the chance that other life events will affect the probability of successful completion for an individual, and hence the percentage of students successfully completing. Particularly given the similarities in contexts between Canada and Australia, and the similarities in percentage completing successfully in three of the fields of study, the difference in Engineering in Table 1 should flag a search for potential causes. The very different pattern of completion rates at Duke suggests that they are doing something right in Arts that the other two institutions could learn from. They, on the other hand, could potentially gain from practices at the other two institutions in physical sciences and engineering.

In short, there are benefits to be gained from cross-university comparisons, even when the institutions are in different countries, but the numbers cannot simply be taken at face value.

Acknowledgments

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An investigation of the nature and contribution of Honours programs in Australia

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Abstract

There is growing interest worldwide in the nature of Honours programs including those that serve the transition from undergraduate to postgraduate research courses. This is at a time when there is also intense interest in the effectiveness of research training, timely research candidate completion, and in the contribution of research students to university research status. In Australia prior to the 1980s Honours programs were primarily intended to provide the link between undergraduate and postgraduate research work, but this situation changed and Honours programs evolved into a variety of forms to meet new needs. With this diversity we have lost sight of whether or not Honours research projects prove effective in attracting future postgraduate research students and in preparing them for research. In this paper the authors report research that suggests that for PhD students who have completed their thesis, having an Honours qualification does not predict examination outcome, but another highly relevant question is whether or not preparation through Honours increases the likelihood of research degree completion. The first section of the paper provides an overview of the literature on research about Honours degrees, the second section presents data on doctoral outcomes for those who obtained Honours, and the third illustrates the type of information currently being collected to explore to what extent honours students are 'prepared' for the expectations associated with, and the intensity of, a research higher degree.

Keywords: Honours, research training, doctorate, teaching & learning

The degree landscape in Australian higher education is one of constant change, currently characterised by an emphasis on Quality Assurance and a heightened interest in both university teaching and learning. Government policy and methods of funding are driving universities into an increasingly competitive market on an international scale and within this framework there is also a heavy emphasis on research quality and outcomes, including the effectiveness of universities in research training. The rapid growth in the number of doctoral candidates and the greater variety of doctoral degrees and entry pathways has tended to overshadow what was once the most common pathway - the Honours year. Not that Honours has remained static, honours programs too have evolved into a variety of forms to meet new needs. There are currently around 12,000 students enrolled in at least 400 Honours programs across Australian institutions (DETYA, 2004).3

Regardless of the diversity of programs and entry pathways, a good honours outcome in the 'traditional sense' (i.e. an Honours Class 1 involving a substantial research project) remains as the preferred indicator for success in postgraduate research. But is this expectation borne out? Are honours students more likely to succeed in research and why? Do honours programs with a research component provide a strong foundation for, or facilitate transition into, doctoral studies? These are questions that are rarely raised in the literature,

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[3] In 1990 the number of students enrolled in postgraduate courses was 78 851, in 1999 the number increased by 57% to 139 539. Of this 1999 figure 37 051 (27%) were research higher degrees, compared to 16 334 (21%) in 1990 (DETYA, 1999, p.50). Honours as a separate category was not reported in Department of Education, Science and Training (DEST, formerly DETYA) higher education statistics until 2000.

and are even less frequently the subject of empirical study. They are nevertheless salient ones in the quest for effective research training processes. Much more needs to be known about the nature and usefulness of undergraduate research experience and how undergraduates obtain research knowledge and understanding.

This paper provides the opportunity to merge information from two parallel research projects. It reports on findings in relation to the question:

1. Do those with honours degrees perform better in terms of PhD outcomes?

and it illustrates the type of information currently being collected to investigate:

2. To what extent are honours students 'prepared' for the expectations, skills and understandings associated with a PhD and how 'ready' are they for doctoral study?

The definition and scope of Honours programs

In 1995, the Australian Vice Chancellors Committee (AVCC) published a set of Fourth Year Honours Programs Guidelines for Good Practice that defined Honours as an add-on fourth year program which follows a three-year bachelor degree. The thesis component of most programs was noted as falling between 30-70 per cent and the primary goal was identified as research training. The document stated that academics involved in supervising Honours candidates should be active researchers with a sound background in research, and encouraged, where appropriate, supervision by qualified non-academics in other sectors. (AVCC, 1995). Five years later in the United Kingdom the Quality Assurance Agency developed a series of benchmark statements at the level of the bachelor degree with Honours. Producing 47 subject area statements proved to be exceptionally labour intensive, expensive, and slowed by debates over levels of subject specificity or generality (DEST, 2002) A similar attempt was made in Australia in the 1980s but was discontinued (DEST, 2002). Overall it has proved extremely difficult to map or benchmark honours programs. Even in those countries that have newly introduced Honours programs, such as the Netherlands, it has been shown that diversity in structure develops rapidly and makes comparison and tracking difficult, especially across disciplines (van Eijl et al., 2005). There is a need for more intensive analysis of honours, and in particular study across a range of disciplines as to the types of programs and experiences offered through honours programs.

In 2000, of 526 231 students enrolled in a Bachelor degree, 12 742 (2.5%) were Bachelor Honours students (DETYA, 2000, p19). The Bachelor Honours student load was distributed across the following discipline groups: Science (24%); Social Sciences (21%); Humanities (14%); Administration, Business, Economics & Law (10%); Visual/Performing Arts (8%); Engineering (6%); Mathematics & Computers (6%); Health Sciences (6%); Education (2%); Agriculture & Renewable Resources (2%); and Built Environment (1%) (DETYA, 2000, p.58). The graph in Figure 1 serves to show the marked differences in distribution of Honours enrolments by subject areas. It also shows high and almost matching enrolments for the Masters by research and doctoral degrees, compared to a less clear pattern in Honours. In a number of subject areas, such as Education and Engineering, there appears to be little by way of Honours enrolments yet strong research enrolments.

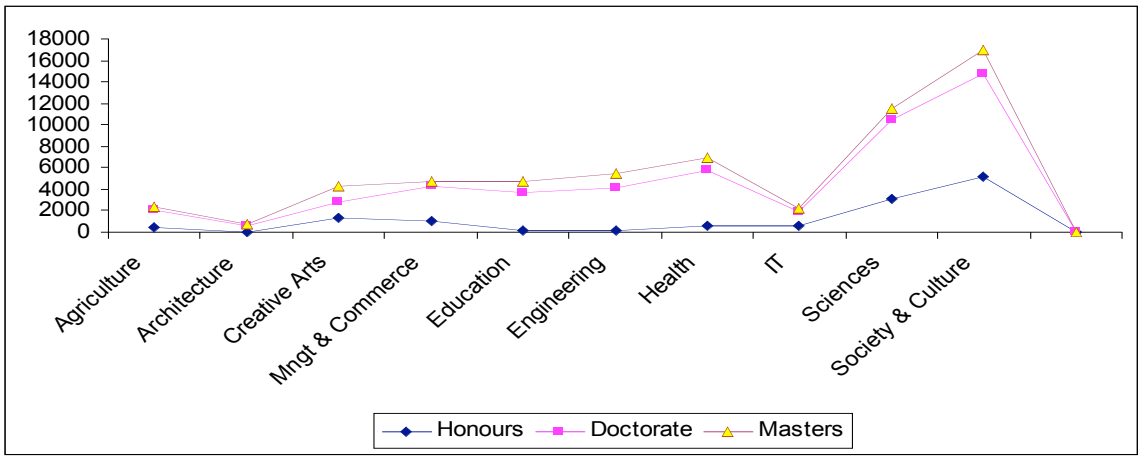

Figure 1: Student enrolment 2004: Bachelor Honours, Masters by Research, Doctorate by Research

It is difficult to give one definitive description of what constitutes an honours program. Ledgar (1996) defined Australian honours programs into two categories: Honours degrees and Degrees with Honours. Honours degrees refer to the year long program following a three year bachelor degree, requiring a high level of academic achievement for entry. These types of programs are most common in traditional disciplines such as the Sciences and the Liberal Arts. The program is usually focused on completing a research thesis. The terminology differs between institutions; for example, it may be referred to simply as an Honours Degree, an Add-on Honours course or an End-on Honours Program. Degrees with Honours refer to an award for a student completing a degree of four or more years with outstanding academic achievement. The latter are awarded in most professional degrees, including Education, Engineering and Law. In some cases students take a more demanding academic program during the latter stages of the degree than that required of a student undertaking the course leading to a pass degree. In other cases there is a built in Honours stream in the four year Bachelor degree course, referred to in policy documents as an Integrated Honours course. Concurrent Honours programmes run in parallel with the pass degree – this is a form of Honours that is gaining momentum in European countries where Honours 'colleges' are also emerging (van Eijl et al. 2005). Despite the numbers undertaking Honours, its relevance to the expanding doctoral sector and the increasing interest in the degree as a means to support the further development of outstanding students, empirical studies in the field are limited

The literature

Published literature that focuses on honours courses covers such areas as assessment (de Vries, 1999); examination (DEST, 2002); factors influencing enrolment (Prestage & Lichtenberg, 1996; Bourke, 1991; Powles & Patrick, 1989, 1991; Buckridge & Barham, 1984); student support (Martens, 1994); and academic standards across Australia (Anderson, 1993; Kwong, 1992). One of the main themes in the Honours literature however relates to the student experience. In a study of Honours students conducted at Flinders University (Hawes & Flanagan, 2000) half of the respondents reported difficulties, including lack of confidence, stress and time management problems. This theme extends to transition from Honours to postgraduate research. Postgraduate students in the discipline of Education perceived an 'abrupt transition' between undergraduate study and the experience of postgraduate research (Johnston & Broda, 1996, p.271). Aspects which were factors in the transition were the degree of structure provided in the research program, resources available for

assistance, changes in power relationships and the sense of isolation experienced (Johnston & Broda, 1996).

There is some indication in the literature that interactions impact on both the experience of a student researcher and the pathways that they take to research higher degrees. Kiley and Austin (2000) found that the Honours degree was the most common qualification prior to entering a research Masters or PhD. Moreover, the most important source of information about future research study and choice of institution for students in Australia proved to be discussion between the student and their Honours supervisor. Students also preferred to seek advice from people directly rather than to seek information through media sources. A sense of belonging and acceptance within a faculty are also important. Lovitts (2005) builds on this notion by discussing the nature of the experience of making the transition from an undergraduate student to an independent postgraduate researcher. She found that factors that contribute to degree completion include: the immediate setting in which the student works, the interactions that take place within that setting and the distribution of resources across graduates, particularly the availability of experienced supervisors.

Supervision is an important aspect of an undergraduate research students' experience. A study by Fitzsimmons, Anderson, McKenzie, Chen & Turbill (2003) explores supervision of Honours students in the Australian context, finding that the small group approach to supervising Honours students provided high levels of support and encouragement from both supervisors and fellow students and alleviated feelings of isolation. Hawes (2000) surveyed students and Honours coordinators at Flinders University and found that the transition to Honours posed problems, and also that students and Honours coordinators had different perceptions about the nature of the problems. Coordinators believed that the major problems faced by students were time management and other commitments, whereas these were given a lower priority by the students. The students were concerned about feelings of isolation, stress, and fear of failure. The disparity in perspective suggests students may not receive support in the areas where they need it most. A study in a British university from a small group of supervisors of undergraduate research in a health care profession found that gender of the supervisor may also influence the experience of a research student (Hammick & Acker, 1998).

McInerney & Robinson (2001) reviewed the Tasmanian School of Nursing Honours program, and then explored the experience of students as researchers and clinicians. Their research revealed the difficulties involved for Honours students conducting research in the field, in this case a hospital ward, and the problems associated with establishing innovative programs such as Honours within a professional context when many of those working within the profession are unfamiliar with research. The students were not only learning to be nurses, but at the same time learning to conduct research. Zuber-Skerritt (1987) also explored aspects of learning in relation to research students through case studies on action learning methodology. Similarities are drawn between problems such as isolation and loneliness experienced by Honours students and higher research-by-degree students, though the research indicates issues are accentuated for Honours students because of their greater inexperience in research and dissertation writing, and by the imposition of severe time limitations.

With respect to expectations and assessment, a study based in Ireland, explored tutor and student conceptions of the Honours research project and its assessment in the life-sciences (Stefani, Tariq, Heylings & Butcher, 1997). One finding that hints at the confusion facing students was the range of views held by staff on the nature and purpose of the research project. Another paper

reports on the introduction of a self-evaluation exercise to encourage students to reflect on their own learning and make judgements about their progress (Heylings & Tariq, 2001). Others too wonder about the effectiveness of assessment if the focus of assessment is primarily summative. It is proposed that a portfolio, similar to that used in art and architecture, is created to document student learning. The outcome would be individual treatment and an emphasis on integrated assessment and learning (Elton 2004).

Overall, research that gets to grips with candidate experience of Honours programs, what factors contribute to success, and to what extent early research training develops research skills, is rare. Another area that is essentially unexplored is the contribution of Honours to doctoral performance, but here we have data from the second author's current research that sheds some light on whether or not those with Honours degrees perform better in terms of PhD outcomes. One example of this emergent research is outlined in the next section of the paper.

Honours and PhD outcome

The second author is currently engaged in a study of PhD examination at 8 institutions. This involved the collection of candidate information for 100 students from each institution who had completed their candidature, as well as their written examination reports and examiner and committee recommendations (Holbrook and Bourke 2004; Holbrook et al. 2004a, 2004c). The candidate information includes the highest degree level at entry into the PhD. Of the completed students 46% entered with an Honours degree (although it is not possible to ascertain the form of the degree). Another 27% entered with a coursework masters degree and 17% with a research masters degree. Of the Honours group proportions differed between institutions (range 27% to 64%) and overall there were more females (53%) than males (47%). Those with Honours were also a significantly younger group than those with other PhD entry level qualifications and more of them stayed in full-time candidature than other groups. In terms of semesters enrolled those in the Honours group also took slightly longer to complete.

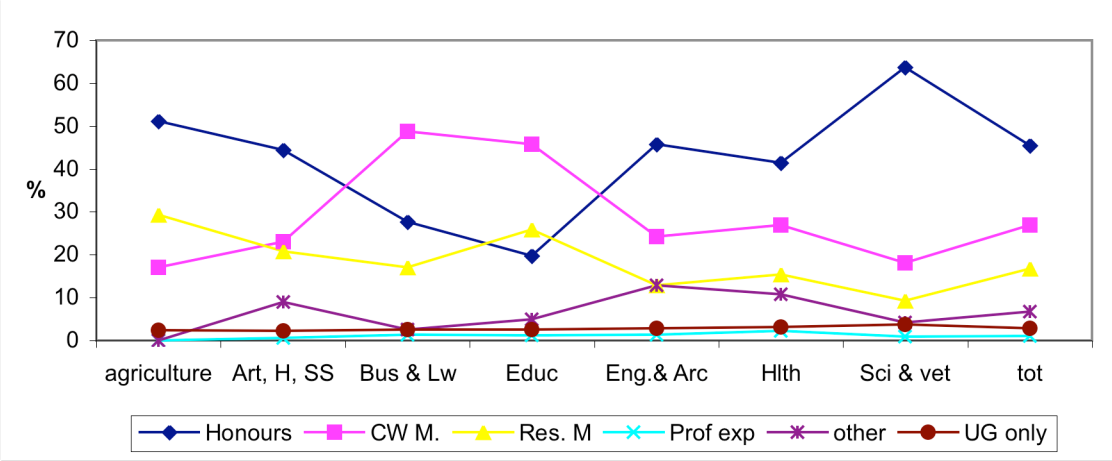

Figure 2 Distribution of entry degree by broad subject field for completed PhD students (N = 791)

When analysed by broad field of study (see figure 2) there are differences between disciplines. The proportion of students in the Honours group ranges from 20% in Education to 63% in Science. Despite the fact that we were drawing on a particular sample of completed PhD students and restricted to a small number of broad classifications of fields of study, the disciplinary pattern is not dissimilar to that for total honours enrolments in 2004 shown in Figure 1.

When Honours is compared to the total group with respect to thesis recommendation by the institution, the Honours group had a slightly better, but not significantly different outcome to the students who entered at a different level. Of those who were not required to make a change to their thesis, 61% were the Honours group as compared with 57% for all other candidates. Figure 3 provides further detail, and it is evident that those with coursework Masters entry level show a different overall pattern than Honours and research Masters, at least indicating that some experience of research has a role to play in bringing about a better outcome (i.e. the candidate is not required to make corrections or revise and resubmit their thesis). The only fail PhD in the sample entered with a professional qualification, which explains why Fail column stands at 100%.

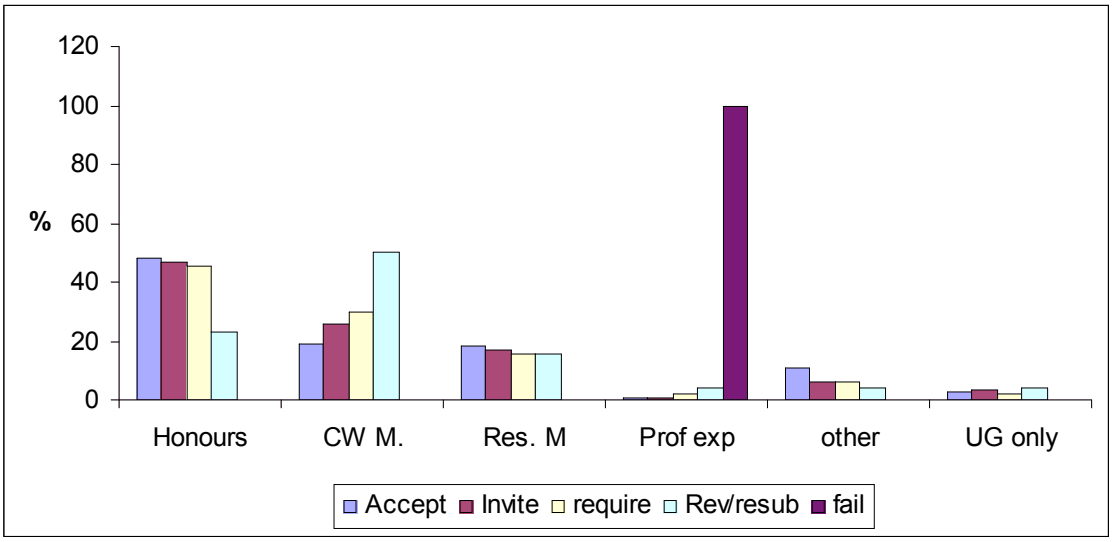

Figure 3 Final recommendation on the thesis by entry level qualification

In this study we did not collect data that would allow to us to compare the Honours group for those who completed a PhD with other candidates who did not complete. However, if we return attention to Figure 1 it is clear that relative to the numbers currently enrolled in Research higher degree candidature, Honours students are a reasonably small group, so it is worth noting that in our sample almost half of the candidates had an Honours degree even if they did not perform significantly better in examination on the recommendation measure.

Given the embedded belief within academe, and especially in the awarding of scholarships, that Honours does produce more research ready candidates, then it remains to tease out where that belief may reside and if it is accurate, especially given the knowledge above that Honours candidates do not necessarily perform better and are slightly slower in completing. It could just be that brighter students do Honours and that even without any immersion in research they would prove to be quality doctoral candidates who complete. It is to such questions that we now turn.

Determining how honours contributes to research identity, understandings and research skills

What dimensions of experience should we be examining to determine what honours might contribute to the transition into a research higher degree and why? There is an interest in the intention of honours students to go onto research higher degrees and some institutions have done their own in-house analysis, for example the University of South Australia, but the results are

currently not available in journals. There is also an interest in what skills and understandings are acquired, but similarly, publications are rare. It is clear that bright and motivated students are welcomed into honours, but how does this translate into what they are learning whilst undertaking an Honours program, and does their learning translate across to research higher degrees? One of the key questions for the first author's study is what honours contributes in terms of being a transitional phase into research higher degrees. There needs to be a holistic perspective about what you come to honours with, and what benefits are gained from completing an honours program.

Studies have dealt with the highs and lows of the honours experience, but these on their own do not provide a framework for answers to the question of what the contribution might be. It was necessary to devise a study which encapsulated all these elements to obtain a holistic picture across disciplines. The instruments devised reflect this, and the intention is to capture the preparedness of honours students for further research. The approach for the study coalesces into four areas – learning motivation; research environment; research self-efficacy; and research orientation. These areas will inform the key question about a students' research preparedness or readiness (Diagram 1).

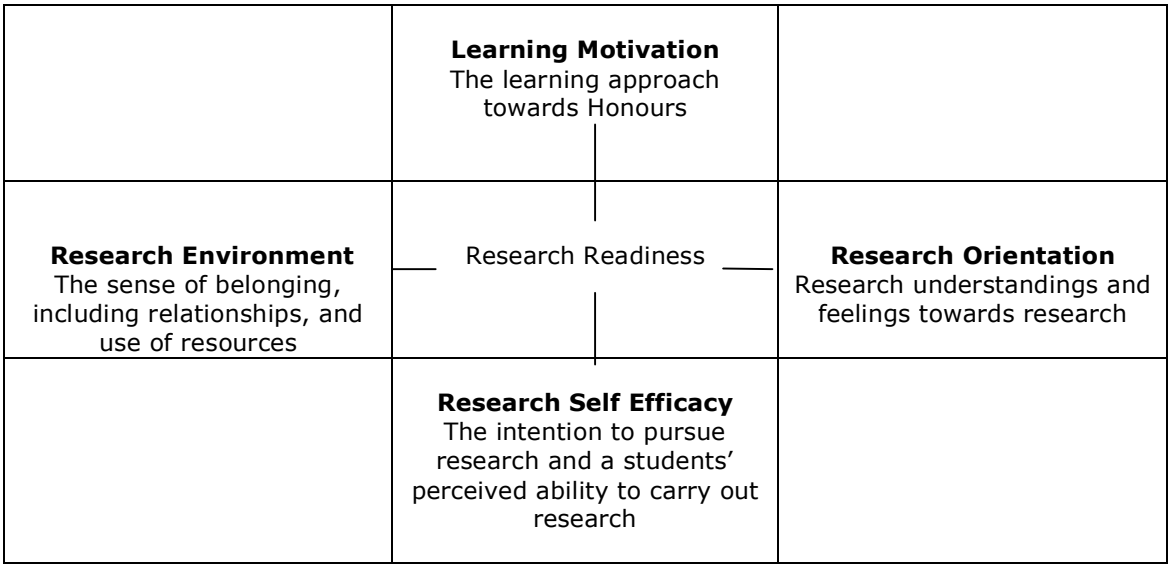

Diagram 1: Research Readiness Matrix

In order to collect data to inform these four areas contributing to research readiness, three types of data collection have been developed: a questionnaire, interviews with Honours coordinators and focus groups with Honours students. The multi-scale questionnaire is being distributed to all fourth year students at one higher education institution and asks for demographic information about the respondent; information about the structure of the Honours program; and details about the research project. The questionnaire also includes four scales (Table 1), three of which are developed from already existing scales and from the literature on undergraduate research student experience. The fourth scale is a new instrument which visualises the research journey for honours students, developed initially by Holbrook to identify futures orientation and the nature and density of futures imaging (Holbrook, 1998) and modified to plot the journey experienced by the Honours student. It is used to build on how the participant conceptualises their current understandings about research and predict how they see their research continuing in the future.

A respondent to the questionnaire has been selected to illustrate data from the areas contributing research readiness. This particular respondent is a female

Australian student, studying in the School of Biomedical Sciences. She is completing the honours year of a Bachelor of Biomedical Science, which is an end on program. The thesis makes up 100% of the course load for the year. The respondent believes she had no involvement in the choice of topic, has had weekly contact with her male supervisor and works in a research group. There is no specific training program within the honours program, with the main mode of teaching being lab work under the supervision of a lab manager. She has no interest at this point in postgraduate studies. The scales inform the four identified areas which contribute to research preparedness, including learning motivation, research environment, research self-efficacy and research orientation (Table 1).

Scale	Number of items	Example of item
Learning Motivation		
Intrinsic Value	4 items	I think what I am learning in this course is useful for me to know
Self Regulation	5 items	Even when study is dull and uninteresting I keep studying until I finish
Cognitive Strategy Use	4 items	When I am studying for a topic, I try and make everything fit together
Research Environment		
Learning Community Scale	6 items	I can talk to lecturers about problems I am experiencing
Research Environment Scale	5 items	I feel I belong to the faculty community
Research Self Efficacy		
Conceptualisation	5 items	Brainstorm areas in the literature to read about
Implementation	5 items	Generate researchable questions
Early Tasks	5 items	Be flexible in developing alternate research ideas
Presenting the Results	5 items	Synthesise results with regard to current literature
Research Orientation		
Honours Journey Plot	Self plot	The student plots and predicts their journey on the plot indicating the highs and lows, which may focus on the substance of the research and/or the emotions associated with the research journey. The plots yield data for further scale development such as positive and negative orientation to research, research imaging, & research trajectory

Table 1: Scales used in questionnaire to inform the areas contributing to research readiness

Learning Motivation is informed by three scales Intrinsic Value, Self-regulation and Cognitive Strategy Use. In particular the aim of these scales is to look at how students approach their learning and the extent to which students are motivated. There are a series of 13 statements where the respondent is asked to indicate on a six point likert scale the extent of their agreement with the statement (examples given in Table 1), from Strongly Disagree (1) to Strongly Agree (6). The scales are adapted from the Motivated Strategies for Learning Questionnaire which measures motivational beliefs and self-regulated learning (Chye, Walker & Smith, 1997; Pintrich & De Groot, 1990). The respondent agrees with statements about Cognitive Strategy Use (4.75) and rates Intrinsic Value (5.0) as her highest motivation indicating that she thinks about her

learning and is able to utilise internal strategies to motivate her learning. She tends to agree with statements about Self Regulation (4.0), indicating that she does persist with work when it is hard or when it is dull and uninteresting. The overall attitudes identified in the research orientation will also contribute to learning motivation, as will data from focus groups with Honours students.

Research Environment is informed by two scales developed from the literature on the experience of undergraduate student researchers, which identifies some of the difficulties undergraduate research students' experience such as isolation and time management (Hawes & Flanagan, 2000) and factors which affect the nature of the transitional experience from undergraduate to research higher degrees such as resources available, structure provided and the sense of belonging within the research environment (Johnston & Broda, 1996; Lovitts, 2005). The scales are named the Learning Community Scale and the Research Environment Scale, and consist of a series of 11 statements where the respondent is asked to indicate on a six point likert scale the extent of their agreement with the statement from Strongly Disagree (1) to Strongly Agree (6). The questionnaire respondent with statements from the Research Environment Scale (5.4) and she tends to disagree with statements from the Learning Community Scale (3.3)), indicating, for example, that she is able to access facilities such as the library to assist her in her research but that she doesn't feel part of the university and faculty learning community. In addition items in the questionnaire such as contact with supervisor; contact with industry or members of profession; whether research involves contact with a research group; and the types of facilities and access to resources required for the respondents' research are included. Interviews with Honours Coordinators will also be undertaken to complement the information provided by students about the research environment.

Research Self Efficacy is informed by a series of four scales which aim to explore students' perceptions about their research skills and to gauge whether they intend to pursue a research career. Research self-efficacy can be defined as 'one's confidence in successfully performing tasks associated with conducting research and has been found to predict graduate students' interest in conducting research' (Forester, Kahn & Hesson-McInnis, 2004, p4). The scale is based on Bandura's self-efficacy theory and is adapted from the Research Self Efficacy Measure (Forester et al., 2004), where the respondent rates confidence in their ability to perform tasks with respect to the research process, with 1 being Not at all Confident to 6 being Extremely Confident. Scales include Conceptualisation, Implementation, Early Tasks and Presenting the Results. The questionnaire respondent indicated confidence in all four areas: Conceptualising (4.8); Presenting the Results (4.4); Implementation (4.2) and Early Tasks (4.0).

Research Orientation explores research understandings and feelings towards research. New scales will be developed based on the Honours Journey Plot, in which the respondent is asked to identify the highs and lows, and key points from their research journey as well as projecting into the near future. The scales will be, 'positive/negative orientation' which picks up feelings about different tasks as well as an indication of overall feeling. The focus on tasks is encapsulated as 'research imaging', and the future projections as the scale 'research trajectory'. The plot picks up where the student is in their research program and allows us to determine areas where the student is not identifying key aspects of project development. In addition to the above, questionnaire items such as what factors contributed to choosing to do Honours and whether the respondent intends undertaking postgraduate studies will inform the area of research orientation.

An example of a completed plot by the same respondent is shown below (Diagram 2). It is interesting that she starts with high expectations and that she anticipates finishing on a high as well. Her experience with the methods; working on the literature; and writing the thesis has been low points, with the feedback from her first assessment being her lowest point. She found that the best part about the project was finishing major tasks such as the lab work and the literature review and that submitting the thesis will be her highest point. She demonstrates knowledge of research process in the Plot, and also identifies emotions such as not knowing anyone or what to do. The comments of the respondent are similar to findings about student concerns reported by Hawes (2000). Research Orientation will also be further explored with focus groups of Honours students.

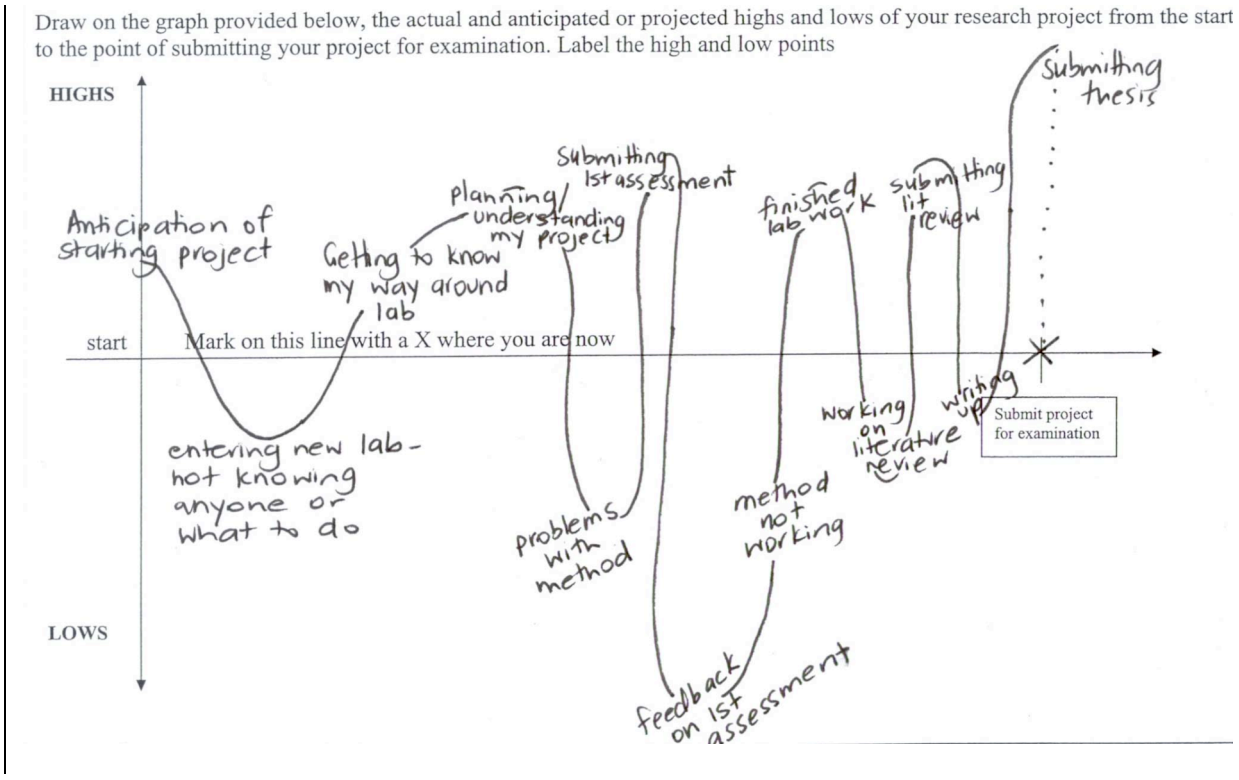

Diagram 2: Plotting and predicting the highs and lows of the Honours Journey

The framework identified uses four areas including learning motivation, research environment, research self-efficacy and research orientation to contribute to research readiness. The illustration indicates the scope of the data collection and the nature of the model to be tested.

Conclusions

Honours degrees are now many and varied, but the 'traditional' end-on Bachelor honours that has a research component is still regarded highly, and is employed as a reliable indicator of academic excellence, potential research excellence, and some degree of research preparedness. In some fields, the less traditional four year undergraduate degree with a minor research thesis awarded with a first class honours is also sufficient to enter a doctoral program in that field. While there has been a concentrated surge of research about doctoral supervision and assessment, investigation of the study of honours remains patchy and untested. How prepared are honours students entering doctoral programs across a broad range of fields to complete a doctoral thesis?

We have learned from recent research reported here that an honours degree level entry to a PhD will not necessarily lead to a better examination outcome,

but that does not preclude the role of Honours in improving the rate of completion. Empirical work linking completions and outcomes is sparse, as is literature on what leads to good completion rates in doctoral programs. So how interested in, and prepared for further research, are students with honours degrees and what can be expected realistically? What would research readiness at that level look like? The authors propose a model that combines learning motivation and research self-efficacy with research environment and research orientation to identify research readiness. This will explore further the experience of honours students conducting research, and whether that experience makes them more prepared to carry on to doctoral research across a range of fields with differing types of honours programs. As shown by the respondent from Biomedical Science, there is much to be learned about the nature of the research experience gained during honours, and in exploring the research readiness of honours students we may be unlocking some of the keys as to why students choose to progress to research higher degrees and whether their honours experience is instrumental in its completion.

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Examiner Stories: Knowledge creation for the testers

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Abstract

Higher Education literature has in the past benefited from practitioner stories. These have particularly come from research students and research supervisors, but there is a notable scarcity of examiner tales. Those that are there tend to focus on improving the quality of the thesis rather than improving and making transparent the quality and practices of the examiner. In the current climate of improving supervision quality it can be argued that deconstruction of examiner tales is not only helpful for examiners, but can also assist the supervisor in offering more thesis centred assistance to their students through accessing their examiner insights.

Geof Hill, Shankar Sankaran, and Pam Swepson were drawn together over a thesis that Pam and Geof were examining, and a second thesis that Pam and Shankar had examined. They recognised a mutual interest in the broader questions of examining action research theses. As they bonded in their informal community of practice they saw the benefits in terms of professional development of making transparent their examination practices. This led them into a more formal storytelling process, the outcomes of which have led to their own focussing on quality issues for thesis examinations and have the potential to generate conversations between other thesis examiners towards similar deprivatisation of higher education research examiner practices (Sankaran, Swepson and Hill, 2005). Prompted by Schon's (1987) description of the swampy ground in practitioner investigation, and continuing to use a community of practice, they revisited their 2005 stories to use them as a basis for exploring some of the problematic terrain in the examiner practice topography.

They are advocating storytelling and communities of practice around examiner practice as viable professional development contexts for research supervisors.

Introduction

Investigation into the practices of higher education thesis examination has established a small but significant niche within higher education literature in the past twenty years. Several studies are consistently referred to and these establish an agenda of the key foci of this niche.

Nightingale (1984) reviewed examiner's reports and university regulations pertaining to the various degrees. She concluded that the then current practices of thesis examination were dis-empowering in that they did not clarify the criteria by which a thesis would be evaluated. She recommended explicit assessment criteria be made available to both students and examiners.

Simpkins (1987) similarly examined the practice of thesis examination by undertaking an analysis of examiner's reports to determine whether examiners subscribed to common thinking about theses and research. The study revealed that overall there was a common construct of critical evaluation. He suggested that examiners expected a research thesis to draw on established methods of investigation and that there was also a willingness, at least of the examiners in

his study, to accept some of the assumptions expressed in the new research traditions. This was a significant move towards making explicit the examiner assessment criteria.

Hansford and Maxwell (1993) replicated the Nightingale (1984) study and focussed on the examination of Master's theses. Their study identified the range of reasons that examiners provide for a thesis not meeting the standard, and thus inferred the indicators of a quality thesis.

Mullins and Kiley (2002) have critiqued these (Nightingale, 1984; Simpkins, 1987; and Hansford and Maxwell, 1993) and other articles, for their use of examiner reports as the primary data in their investigations into thesis examination practice. They have suggested that by the time the report was written, the examiner had already gone through several processes of reading/examination, and hence the studies failed to capture the immediacy that is the experience of the examiner, novice or otherwise. This critique signifies one of the foci of investigations into thesis examination practice, being the nature of data used for the investigation into thesis examination practice.

In our reading of this literature on thesis examination we can see the emergence of a second focus. In these studies there is a tendency to focus on ways of improving the quality of the thesis. Writing from a perspective of Practitioner Investigation Anderson and Herr(1999) we would suggest that it is equally important to make transparent the quality and practices of the examiner (Sankaran, Swepson and Hill, 2005).

Methodology

Mullins and Kiley (2002) proposed the interview process as an alternative to examiner reports to attempt to articulate a range of examiner practices. Another alternative is to make use of practitioner stories (Ballantyne, Bain, and Packer, 1997; Clandinin and Connelly, 1986.)

Practitioner stories have been used effectively as data for investigations into research student practice (Comber, 1999; Francis, 1996; Hall, 1998; Hanrahan, 1998; Lovas, 1980) and research supervision practice (Maor and Fraser, 1995; Salmon, 1992). Practitioner stories appear to have not previously been used for thesis examiner practitioner investigation. This could be for the same reasons as have been given generally for limited investigation into thesis examination, that the use of such information breached confidentiality rules surrounding thesis examination (Johnson, 1997).

In their Practitioner Investigation into thesis examination, Shankar Sankaran, Pam Swepson and Geof Hill (2005), all acquaintances within an Action Research Society (ALARPM) were advantaged by their one-degree of separation with regard to two particular theses. Pam and Geof were examining the first thesis , and Pam and Shankar had examined another. This enabled them to turn their professional (thesis examination) practice into practitioner stories and then to use their stories as the basis of an analysis into generic thesis examination.

Denning (2001) suggests that storytelling is an appropriate way for individuals in organisations or human systems to see things in a different light and from that insight, to make changes within those systems. He suggests that stories will "work" if they are brief, but with enough texture and relevance to a specific audience; are inherently interesting; are true, rather than invented; embody a change message; and if the tacit knowledge of the stories springs the reader to a new level of understanding.

Our storytelling started informally. On the occasions when we met as professionals, our discussion would often turn to our experiences of examining.

Pam's and Geof's stories about examining a thesis were influenced by the thesis they had recently both examined and, as Geof's story later elaborates, initiated a first conversation between Pam and Geof about thesis examination. On hearing Pam and Geof's stories, Shankar recognised that he and Pam had also jointly examined a thesis, and they both resolved to incorporate those events into their story.

Initially we wrote our stories for each other, but found that the tacit knowledge in these stories did not "spring" us to new levels of understanding, as Denning's (2001) criteria suggested. We suspected that it was because our stories had been written rather than told, and we decided to tell our stories to each other, and in the presence of a Gita Sankaran, a naïve listener. We audio-recorded and transcribed the stories and explored the transcriptions for common themes.

We each reviewed our own stories, then each other's stories. Themes began emerging from the transcripts, firstly in the form of reference to each other's stories and then in words and phrases that expressed similar sentiments. We undertook a cross story analysis to identify themes emerging across all three stories. We looked for what was common between the stories, arguing in this stage of the analysis that what was common among we three thesis examiner storytellers may also be common to other thesis examiners. We reviewed the themes in the light of our research, reducing this general list of themes to ones that were directly pertinent to our practice as thesis examiners.

On completing the stories and our construction of meaning from the stories we began sharing these with people outside of our triad. We intended that our stories would be generative, prompting rippling conversations as other readers read them, agree or disagree with them, and essentially make a more formal reflection on their own practice.

In the current study we have returned to our stories of being examiners. Guided by Schon's (1987, p1) description of the swampy ground in Practitioner Investigation.

> In the varied topography of professional practice, there is the high, hard ground overlooking the swamp. On the high ground, manageable problems lend themselves to solution through the application of research-based theory and technique. In the swampy lowland, messy confusing problems defy technical solution. The irony of this situation is that the problems of the high ground tend to be relatively unimportant to individuals or society at large, however great their technical interest may be, while in the swamp lie the problems of greatest human concern. The practitioner must choose. Shall he(she) remain on the high ground where he can solve relatively unimportant problems according to prevailing standards or rigor, or shall we descend into the swamp of important problems and non-rigorous inquiry?

We have reviewed our stories and each other's stories and individually identified what we believe to be 'swamp' issues. We collaborated to identify what emerged as common 'swamp' issues, identifying two main 'swamp' issues for our further discussion.

Stories of our experiences as examiners

Shankar's Story

Soon after I joined academia in 1999 I was asked to examine a Doctor of Business Administration (DBA) thesis. Our DBA theses are examined by two examiners – at least one which must be external. And there was a shortage of internal examiners who had a doctoral degree in my school. I was initially asked

to examine theses written by out DBA students from South East Asia where I had lived and worked for more than 20 years. Supervisors assumed that this gave me an understanding of the student's environment. I was not sure how I should go about examining a thesis, as the criteria given to me were very brief and general. So I went and got some information from an academic staff in another college who had written papers about it. I was also unsure whether I could talk to the external examiner, as his/her identity was not known to me. As time passed internal supervisors started looking for me as an examiner in content areas where I was teaching or the methodology I was familiar with – action research. Then one of my colleagues who had moved to another university asked me to be an examiner in my content area. As I examined some theses for them, the university started asking me to examine theses in areas in which I was not familiar. I was not sure whether I was the right person. I thought, "I will send it back," but decided to read the thesis and found it to be quite interesting. I learnt a lot about the content area as well which became helpful with a new student I was supervising. Slowly, other universities started looking for me as an examiner for action research theses due to my setting up a centre for action research in the university. I had started becoming confident in my abilities as an examiner when one incident brought me face-to-face with reality.

I was asked to examine a DBA thesis about innovation. At that time I was actually quite busy because I was travelling to Malaysia for teaching and I was hard-pressed for time to read this thesis as well. So when I actually read the thesis I felt this thesis had something worthwhile to say, so in my own mind I felt that this was a passable thesis. I actually examined the thesis while I was on a flight to Malaysia. Then I read the thesis a second time when I got back to Australia to make sure that I got all my detailed comments on the thesis and I passed the thesis, with comments.

Then I was given the report from another examiner who was examining the same thesis whom I knew very well, Pam. And it was just after I sent my examination report that I saw her report. When I read her examination report I found that she had actually found the thesis to be inadequate. And I was not sure what to do. Should I talk to her about this? Then I found that between the two of us there was a divergence of opinion and I felt that this could not be reconciled. Therefore, I suggested to the DBA Coordinator that this thesis be given to a third examiner for examining because the two views were divergent.

Later I reread Pam's comments and I felt that she had a lot of things to say which were reasonable about the thesis, however, based on my own understanding of the requirements for a practitioner-based DBA thesis, it was not necessary for the student to be looking at several models.

Although I appreciated Pam's comments I still felt my judgement was fair.

Geof's Story

Soon after completing my doctorate, Shankar invited me to examine my first PhD thesis. He told me that I had been invited to examine because I had some knowledge and practical experience with action research. But I also believe it was because, as soon as I graduated as a Doctor, I put out to my community of colleagues that included Shankar that I was keen to examine.

While I had not previously examined at a doctoral level, I felt I had a fair amount of experience and background from examining a large number of Master's research projects. I had recently finished a large project that involved examining over 80 Master of Education Action Research reports, and while undertaking this, in response to student inquiries, I developed an explicit marking criteria for what I believed was a "good" action research report.

Once I accepted the invitation to examine, the first thing I did was to send a letter to the student via the university making explicit my criteria for a good thesis. By this time it had been amended so that it also included the doctoral requirement of contributing to the knowledge base. I felt that it was important for the student and the examiner to be in conversation, and I hoped that this letter might initiate that conversation. Later when I received the examination criteria from the university I reformatted my own criteria to fit into the university's assessment criteria. I found that this made the criteria more explicit and made it easier for me to respond to the university criteria.

When I got the thesis, I finished an initial reading within 24 hours. I was struggling with it! I think it was problematic because what the student said he/she was going to do did not turn into reality in the thesis. It frustrated me that the first PhD thesis that I was going to examine was turning out to be quite a problematic one. I was battling. I wondered whether this was because I was a new examiner, I was finding more problems with it. I spoke to Pam who was one of the other nominated examiners. I had been given the names of the other examiners and was advised that I could make contact with them.

I came away from my meeting with Pam feeling more confident about my assessment of the thesis' problem. Pam, who was much more experienced than I, had identified the same problem and proposed a different solution to it. With that in mind, I then read the thesis for the second time. I was still reading with an open mind, thinking that maybe it was the first reading and I might have been wrong. Or, if I was not wrong, then I needed to be very clear about what the problem was. By the end of that second reading, I really was clear about what I saw as the problem. And that then led into my third reading. As I read, I wrote a report that was as much trying to communicate to the university as it was trying to say to the student, "This is what I see is problematic." I wrote as if I sensed that there was a conversation between the student and me.

I learned that my examination was the most critical of the three examining reports, and I thought that that's where the experience would have ended, that the university would say, "Let's go with the other two, because both of those are saying that this is a suitable thesis." It was what happened then that really excited me about thesis examination!

The university firstly wrote and said, "This is how the other two examiners have examined it, do you want to re-consider your assessment in the light of what they've done?" That conversation was an on-going conversation and it eventually resulted in the student responding to my recommendations, and my re-reading the thesis changes. I thought that I would have been dumped as an examiner. I was actually quite excited that I was still being entertained as a viable reader of the thesis. Seeing the other examiner's reports was also valuable insight into how other people examined.

Given that that was my first PhD thesis to examine, I think the experience was a really rich one. What I learned through that, and was excited about, was how helpful it was to be in conversation with another examiner. Concurrently, I was also chatting with Pam, the other examiner, and Shankar about examination as we wrote this paper, and that was also helpful. So, I came out of it feeling a bit more confident as an examiner because I had had these two types of communities of practice; I am actually looking forward to the next thesis. I felt that I have consolidated a criteria for what I feel makes a good thesis and what is a good examination practice and I am keen to put those into practice again.

Pam's Story

Both Shankar and I were asked to examine the same DBA thesis on innovation. It turned out to be the most difficult thesis I had ever been asked to examine. The job was not made easier by the fact that there had been some delays in the university administration procedures and I received it fairly close to a proposed "graduation" date. Therefore, I agreed to examine it as quickly as I could.

This put me into a bind because I had agreed to try to help the candidate make the graduation date but was very unhappy with the thesis. Like a lot of examiners, I guess, I really want candidates to be successful. I only suggest changes if I think the candidate can make them reasonably and practically within a fairly short time-frame – recognising the amount of time candidates have already spent on their thesis.

In this case, I appreciated that the candidate had done an enormous amount of work, but, for me, the underlying framework of the thesis was inherently flawed and I thought the results were not validated. Such a thesis is not easily fixed. The other dilemma that I faced was that I know and have great respect for this candidate's supervisor. That was one reason I was not happy in finding such serious faults with it. The other reason was that I could not suggest any ways to make moderate modifications to it to overcome what I saw as fundamental flaws. Therefore, I failed it but was open to suggestions for changes from the candidate.

However, it turned out that Shankar did accept this thesis. The Higher Degrees Committee noted that Shankar and I had assessed this thesis in totally different ways and they decided that our differences could not be reconciled. Therefore they decided to forward the thesis to a third examiner. This meant that:

I never got to see Shankar's report even though he saw mine.

We were not able to engage in a discussion about our differences or try to find a middle ground.

I was not involved in making the decision to involve a third examiner.

To my mind, this is a really good example of the system not working. I think it failed the candidate and the university, I think, the examination system, by not facilitating discussion between examiners or examiners and supervisors fails both the candidate and the university.

Fortunately things are improving as was evident in the thesis that both Geof and I examined. It was really useful for me to have a discussion with Geof about that particular thesis and how I examine theses. I also appreciate the way that Geof takes the initiative in providing universities and candidates with his examination criteria. I guess I was trying to do that in less explicit, more indirect ways through my examiner's reports. But Geof's way gives universities some criteria for choosing or rejecting him as an examiner. However, the fact that candidates do not get our examination criteria, either formally or informally, so far down the track is something I think we both see as a problem and we would like to see more communication between candidates and examiners – like in the American system.

But there is a bit more to this story, some of it good and some not so good, at least from my perspective. I accepted the thesis in question - with modest modifications. Geof was much tougher on it and required major modifications. Because Geof was the tougher examiner, the chair of the Higher Degrees Committee suggested that the candidate's supervisor and he have a chat about how to progress. Now, that is a great idea. But neither the other examiner nor I

were included in these discussions. It seems that the Higher Degree Committee managed the process by giving one examiner's report greater weight than the other two.

I think that communication between all parties in the examination process is good, but I think it would be better if it was a little less ad hoc. Informally I heard from one of the candidate's supervisors that he took on board ALL his examiners comments and made some major changes. This is wonderful to know, but I think it would have been better if this was part of the formal feedback from the university to all examiners.

Discussion and recommendations

By analysing our own and each other's stories, we unanimously identified two main 'swamp' issues which we wish to explore and discuss here.

1. The confused communication and uncertain relationships between the key players in examining a thesis; i.e. the candidate, the supervisor/s, the external examiners and the university's Higher Degree Committee.

2. The problem of how 'novice' examiners becoming skilled professionals in that important task.

Swamp issue 1: The confused communication and uncertain relationships between the key players in examining a thesis

As doctoral candidates ourselves, we were always unclear of our relationship with our external examiners (Sankaran, Swepson and Hill, 2005). The 'espoused' theory of the examination process seemed to be that we were to be examined by someone entirely independent of our work to ensure that we were examined 'objectively'. However, this objectivity was confused in two main ways:

Firstly we were all involved in helping our supervisors make recommendations to the university on which examiners to approach. Secondly, despite the apparent contradiction of 'objectivity' by our being involved in nominating potential examiners, the actual processes of examination lacked clarity and transparency. Even at the point of submission of our theses, we had no knowledge of the criteria on which they would be judged and were unclear of the processes in place should examiners disagree on assessment. We graduated from three different universities and all experienced different ways of managing these disagreements.

As doctoral examiners, we have now run up against the same two problems.

1. Lack of clarity about why one has been chosen to examine.

2. Moderating different examiner assessments

Lack of clarity about why one has been chosen to examine

We believe that we have been chosen to be examiners for a variety of reasons: all possibly reasonable, but the reasons are not transparent to all concerned and not consistent.

Shankar says:

I was initially asked to examine theses written by our DBA students from South East Asia where I had lived and worked for more than 20 years. Supervisors assumed that this gave me an understanding of the student's environment.

As time passed internal supervisors started looking for me as an examiner in content areas where I was teaching or the methodology I was familiar with – action research.

Eventually *[another] university started asking me to examine theses in areas in which I was not familiar.*

Geof says:

[Shankar] told me that I had been invited to examine because I had some knowledge and practical experience with action research. But I also believe it was because, as soon as I graduated as a Doctor, I put out to my community of colleagues that included Shankar that I was keen to examine.

While I had not previously examined at a doctoral level, I left I had a fair amount of experience and background from examining a large number of Master's research projects.

Pam does not mention in her story her theory about why she was chosen to examine theses, but it was probably because that she is recognised in the action research community and was currently supervisor several DBA candidates herself.

To make the process of selecting an examiner more transparent for all parties; i.e. candidate, supervisor/s, external examiners and the university **we suggest establishing a relationship between the parties well ahead of when the candidate needs to submit.**

One way that we are suggesting that this could happen is by using Geof's approach of providing an approaching university with his examination criteria and asking that it is passed on to the candidate and the supervisor. While universities often provide their own examination criteria, our experience has been that they are so broad that they allow for enormous interpretation by individual examiners. This, in itself is not a good thing. But it does not make for clear communication between all parties. By providing his own criteria, Geof gives all parties some transparent opportunity to either accept or reject him as an examiner, and if they do accept him, then it gives the candidate an opportunity to prepare to meet his criteria.

However, we think providing our examination criteria to candidates and their supervisors, only at the last minute, has limited value.

As Pam says:

I only suggest changes if I think the candidate can make them reasonably and practically within a fairly short time frame ' (so that they can graduate 'on-time) But in one particular case she believed that 'the underlying framework of the thesis was inherently flawed and I thought the results were not validated. Such a thesis is not easily fixed… I could not suggest any ways to make moderate modification to it to overcome what I saw as fundamental flaws.

Pam's frustration in this case, reflecting the frustration or many examiners we expect, is that she felt it was too late for her to do anything constructive to help.

Moderating different examiner assessments

Our stories present two instances where examiners disagree and the different processes for resolving these differences.

In the first instance:

Shankar says:

I was asked to examine a DBA thesis on innovation…in my own mind I felt that this was a passable thesis…. Then I was given the report from another examiners who was examining the same thesis, who I knew very well, Pam…When I read her examination report…. I found that between the two of us there was a divergence of opinion and I felt that this could not be reconciled. Therefore I suggested to the DBA Coordinator that this thesis be given to a third examiner for examining because the two views were divergent.

Pam says:

Shankar decided that our reports were so different that he advised the Committee to forward the thesis to a third examiner…It meant that I never got to see Shankar's report even though he saw mine, we were not able to engage in a discussion about our differences to try to find a middle ground… and I was not involved in making the decision to involve a third examiner.

At that time it was not the practice of that university that DBA examiners knew who the other examiner was. That practice has since changed, as it evident in Geof and Pam's stories.

In the second instance:

Geof says:

It frustrated me that the first PhD thesis that I was going to examine was turning out to be quite a problematic one…. I spoke to Pam who was one of the other nominated examiners… I came away from my meeting with Pam feeling more confident about my assessment of the thesis' problem. Pam, who was much more experienced that I, had identified the same problems and proposed a different solution to it…I learned that my examination as the most critical of the three examination reports. The university gave Geof copies of the other examiners' reports and asked him if he wanted to reconsider his assessment.

Pam says:

It was very useful for me to have a discussion with Geof about that particular thesis…. (But) because Geof was the tougher examiner, the Chair of the Higher Degrees Committee suggest that the candidate's supervisor and he have a chat about how to progress…But neither the other examiner nor I was included in these discussions. It seems that the…Committee managed the process by giving one examiner's report greater weight than the other two.

We suggest that Higher Degree Committees more formally manage the relationship and communication between all parties; especially the supervisors/s and examiners to ensure an even-handed and transparent process.

It is good that examiners know the names of the other examiners. It is good that the university in this instance instigated a conversation between one examiner and the candidate's supervisor. But these processes fall short of a fully open and transparent system.

Swamp issue 2: Novice examiners

The advice in the literature is to avoid using novice examiners (Mullins and Kiley, 2002). The conundrum this presents though is: How is the novice examiner to become an experienced examiner without being given the opportunities to examine? Fortunately, we have found a couple of brave

institutes to give us this opportunity. But we suggest that opportunity is not enough.

Shankar says:

I was not sure of how I should go about examining a thesis as the criteria given to me were very brief and general. So I went and got some information from an academic staff in another college who had written papers on it.

Geof acknowledge his novice status as an examiner of doctoral thesis and when he had problems with his first one he said *'I was battling. I wondered whether this was because I was a new examiner'*. Geof was able to counteract his novice status by recognising and drawing on his previous experiences associated with academic assessment.

Although not a novice, Pam acknowledged the value of conversation with another examiner.

These comments reflect two possible approaches to helping a novice examiner become an experienced examiner.

The first is to help a novice examiner recognise their tacit standards of a quality thesis. Geof did this through a process of gradual reflective practice, moving from his experience of making assessment explicit for undergraduate students, to making the assessment explicit for postgraduate students completing research reports. The step to identifying new criteria for a doctoral level of research report was only a small one. Universities could initiate this reflective practice for novices by asking them to consider their criteria for a quality thesis when they are invited to examine.

The second approach that we have all adopted is through establishing communities of practice. We have found the process of discussing our common experiences and problems an invaluable way of improving our own practice. We are all now much more conscious of making our examination criteria more explicit and of initiating relationships with others in the system where we have opportunities to do so and to push for those opportunities through the Higher Degree Committees when necessary. We would recommend that all examiners, not just novices, consider engaging in communities of practice to improve their practice.

We also think having open communication within the system of thesis examination, in which examiners are informed of and given permission to contact their fellow examiners will help train novice examiners.

Geof noted the insight that he obtained as an examiner by reading the examination reports of other examiners of the same thesis, the confidence he gained as an examiner after his discussion with Pam, a co-examiner, and the insight he gained through discussions with the candidate's supervisor.

Pam noted the value she got from her discussion with Geof about one thesis and she valued his idea of specific examination criteria.

Conclusions and recommendations

On the basis of just our experiences it would be inappropriate to make general statements. We can make conclusions about our own practice that may resonate with others who read these stories.

There are recommendations which we have made back to the specific faculty that acts as the context for our study.

1. Our supervision practice has been influenced by our community of practice around thesis examination. Each of acknowledges that as we now supervise we are more aware of the potential examiner expectations associated with our supervisory practice. In particular our supervisory practice emphasises examiner choice as an important component of the lead up to submission and we each work with our students to seek examiners whom we think will be suitable matches for the content and research methodologies adopted by our students.

2. Our individual making explicit what we consider to be a good thesis, as we discussed criteria for assessment has improved our supervision in that we have been able to be more explicit with our students as to what examiners might be looking for from their position of naïve readers.

3. As supervisors, we encourage communication between our students and potential examiners so that the students can come to understand the constructs by which these examiners might read their work. We use our knowledge of potential examiners to assist students to improve the readability of their thesis.

It seems to us that problems we have identified arise from the current 'summative' evaluation process. We suggest that poor communication between all parties impacts on both the quality of the examination process, and possibly on the quality of the thesis as well.

4. We therefore suggest that universities' **Higher Degree Committees consider managing a more transparent formative examination process** by managing the relationships between the key players to address both of the problems that we have identified.

5. We encourage other examiners to work to tell their stories of thesis examination, for in those stories they may find, as did we, more explicit articulation of the nature of a 'good' thesis, and this is valuable knowledge to convey to students.

6. We encourage the search for the 'swampy' ground, as by discussing this ground with colleagues, either as examiners or as supervisors, leads to greater identification of strategies that might improve the quality of supervision and the experience of undertaking higher degree research for our students.

In the current climate of improving supervision quality it can be argued that deconstruction of examiner tales is not only helpful for examiners, but can also assist the supervisor in offering more thesis centred assistance to their students through accessing their examiner insights.

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Canadian practices related to the examination of PhD theses

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Abstract

Differences among Australia, Canada, and the US in outlook and practice regarding the examination of research doctoral theses led to a survey of Canadian graduate deans to clarify the most common practices in Canada. The results from the survey offer some potential ideas for Australian universities with regard to an oral defense or examination (*viva voce*), and to the inclusion or not of external examiners in that oral.

Preface

Practices regarding the final examination of research higher degree (RHD) doctoral theses vary among Canada, Australia, the U.S. and the U.K. The nature of these differences was brought out in several discussions with Dean Barabara Evans and Dr. Maresi Nerad while spending part of my 2005 research leave at the School of Graduate Studies at the University of Melbourne. In those discussions, I necessarily drew on my knowledge of specific practices at my own institution. The issues raised led me to wonder to what extent McMaster's practices were typical of Canadian practice. To answer that question, I surveyed my colleagues, the Canadian graduate deans. This paper provides the results of that survey, and offers some comparisons between Canadian and Australian practices.

Introduction

There are potentially two main components of the final examination of a doctoral thesis: review of the document by external examiner(s); and a viva voce, or oral examination of the candidate. Generally speaking, the UK and Canada use both; Australia uses only the former; and the US uses only the latter. This paper starts with a short overview of the national contexts for final examination of doctoral theses for these four countries. It then turns to details of the Canadian situation, based on the survey already mentioned. Finally, it offers a comparison of the Canadian and Australian practices.

National context for RHD doctoral final examination

Australia

The situation in Australia contrasts markedly with that in Canada and the US with regard to governmental involvement in the examination of RHD doctoral theses. In Australia, the Research Training Scheme (RTS) mandates the use of external examiners, in that it defines eligibility of a student (for government funding to the university) as follows.

"A research programme is defined as having a minimum of two-thirds of its assessable content by research and the assessment process must involve at least one qualified examiner external to the institution" (DEST, 2004)

The 'Framework for best practice in doctoral examination in Australia' recently published by the Australian Council of Deans and Directors of Graduate Studies (DDOGS) specifies a larger number of examiners:

"…doctoral theses are sent out for examination by two or three examiners (at least two of whom must be external to the candidate's university). One or more of the examiners is commonly from an overseas university or research organisation." (DDOGS, 2005)

In general, there is no final oral examination (or viva voce to use the UK term) of the doctoral candidate.

United States

The situation in the US is almost the opposite of that in Australia. First, there is no central national funding or regulation of universities (other than through research grants). Second, in the absence of national regulation, none of the states have stepped into the breach and issued their own regulations calling for external examination of doctoral theses. Third, most universities require an oral defence of the thesis, or examination of the candidate regarding the finished thesis. And fourth, few if any universities make use of external examiners. The most frequently heard rationale is that to rely on an examiner external to the university would be to abdicate responsibility for the quality of one's own degrees.

United Kingdom

The UK, as mentioned above, uses an external examiner and a viva voce. Both Australian and Canadian practice are in some respects derivative of that in the UK, at least originally. The UK practice itself may well have developed from similar practices for undergraduate degrees, at least in early years of offering them, although the origin of the practice is not discussed in the considerable recent UK literature on examining the doctorate. Green and Powell's recent book (2005) devotes two chapters (11 and 12) to examining the doctorate, covering both the oral exam (viva voce) and the external examination in current practice, but not the origin of the practice. Tinkler and Jackson have published several items on this topic, starting with (Tinkler, 2000) and culminating with their book (Tinkler, 2004). Both of the books referred to have extensive bibliographies on the topic, attesting to its importance within the UK, but none seem to address origins.

Canada

In Canada as in the UK, both an external examiner and an oral defense of the thesis are standard practice, as will be documented in the survey results below. Surprisingly, there has been remarkably little discussion of the issues, especially given the continued debates and assessments of the practice within the UK and Australia. It is for that reason that the results of the survey given below may be of interest, both in starting a dialogue within Canada and in extending that discussion to Australia and the UK.

The Canadian survey

A survey was sent to the e-mail list of the Canadian Association for Graduate Studies on April 22, 2005. Follow-up correspondence was sent to the dean at specific institutions, both to ensure that as many of the larger universities as possible were included in this report, and to clarify answers in a number of cases. Twenty-six universities participated (see Appendix A). This report provides a compilation of those responses, including editorial comments. The report follows the order of the questions as asked in the survey, with the exception of Question 4, which has been placed directly after Question 1.

In the original survey, the questions were preceded by the following definition: "For the purposes of this survey, external examiner means an individual who does not hold an appointment at your own university, and who reads and sends a report on a thesis (or dissertation) written by one of your students. The examiner may or may not attend an oral defence; that is a separate question, below."

1. For the final examination of a doctoral thesis, do you require one or more external examiners, and if so how many?

This was one of the few questions with a unanimous response. All 26 universities use one (and only one) external examiner for doctoral dissertations.

4. Do you require that at least one of the external examiners be from outside Canada?

This was the second question on which there was unanimity. No university required that the external be from outside Canada.

2a. Do you require that the thesis be approved by the supervisory committee members before it can be sent to the external?

	Frequency	Percent
No	9	34.6
Yes	16	61.5
Total	25	96.2

Of the nine who said 'no', several indicated that it is the student's decision to put the thesis forward for final defence. Others indicated that all members of the examining committee (which might include supervisory committee members) receive the thesis at the same time.

Of the 16 who said 'yes', several indicated that there is an option for the student to proceed to defence even in the absence of supervisory committee approval. The University of Guelph described difficulties, with:

"students alleging that racism, interpersonal difficulties, or whatever were colouring the advisor(s)' willingness to sign off. The legal advice we received … is that we should allow the student to proceed if s/he wishes, but only if we can demonstrate that they have had full advice…. This issue of whether a student is "ready for defence" and the university's obligations in advising him/her, have been one of the thorniest in my term as dean."

They have developed a new form, which "has solved 95% of the problem," and have agreed to make it available via this report. It can be found at http://www.uoguelph.ca/graduatestudies/forms/examreq.pdf (accessed 18 Feb 2006)

2b. If yes, is unanimous approval required?

	Frequency	Percent
No response	1	3.8
No	10	42.3
Yes	5	19.2
Total	16	65.4

3a. What happens when there is a negative report from the external examiner?

There was a surprising variety of answers to this question. Practice ranged from giving the student the external's report and letting her or him decide whether to

proceed to the oral defence, through having the Dean of Graduate Studies decide whether to allow the student to proceed. As shown in the following table, seven allowed the candidate to decide whether to proceed (with two of these giving the student the external's comments directly). Eight made the decision within the Graduate studies office. The supervisor alone made the decision in two cases; in five others it was the supervisory committee that did so; and in one it was the department head. In four cases, it was the thesis examining committee that decided whether or not to proceed. In some cases this was simply majority vote of the reports; in others it was at an actual meeting.

Involvement in decision about dealing with negative external comments

	Student	SGS	Sup	Sup com	Dept head	Exam com	Not stated
Decision made by	7	8	2	5	1	4	2
With input from		1	2	1	1		

Twelve said the oral exam was almost always postponed; another five said it was sometimes postponed.

3b. If you use two or more external examiners, how do you reconcile differences of opinion amongst them?

The only time an institution used two externals was when the first report had been negative and the decision was to go to a different external, with or without revisions to the thesis. In those (few) cases, the second external's opinion governed.

5a. Do you have explicit eligibility criteria for external examiners?

Yes: 20; No: 5. Two of the 'no' answers listed some criteria in response to the next part of the question, but indicated that there are no official or published criteria.

5b. If yes, please briefly identify those criteria. For example, is affiliation with a university required?

To the specific question about university affiliation, the answers were: yes 2, no 5, and 'university or an equivalent record' 5. Other criteria that were volunteered were as follows.

Arm's length	12
Expert on topic	11
Scholarly record	8
Earned Doctorate	7
Supervisory experience	5
Associate or Full Prof	2
Active researcher	1

With regard to the 'arm's length' issue, the University of Victoria has a helpful statement about its importance, and some considerations in assessing it, on

http://web.uvic.ca/gradstudies/research/pdf/faculty/PhDExtExamGuide.pdf (accessed 4 Feb 2006).

6. Who obtains the agreement of the external individual to examine the thesis, e.g. the supervisor, the department, the graduate school? (If it is not the graduate school, skip to question #9.)

	Frequency	Percent
No response	1	3.8
Department	10	38.5
Grad School	9	34.6
Supervisor	6	23.1
Total	26	100.0

In a number of cases, either the department (chair or graduate advisor) or the supervisor made the initial contact with one or more prospective external examiners to ascertain their willingness and availability. The graduate school was then informed of the name(s), and needed to approve before sending a formal invitation. Those answers have been coded above as 'supervisor' or 'department'. The nine cases shown as 'Grad School' represent those in which the graduate school made the first contact with the potential external examiner.

7a. If the graduate school obtains the agreement of the external individual, are you given just one name, or a list of possibilities?

7b. If a list, how many names do you request?

There were 17 responses to this question, reflecting situations where the graduate school makes either the first contact or the official contact. In nine of the 17 cases only one name was provided; in three cases there were two names; and in five cases there were three names.

8 If the arrangements are made by the graduate school, what if any information do you request to allow you to confirm that a nominee is acceptable? (E.g. a full CV; a website URL; a one-page summary of a CV)

There were ten non-responses to this question. Those who did reply gave these answers:

- Only the name ("we do our own checking") 2
- Short description or short CV 4
- CV 7
- CV or URL or hardcopy from website 2
- CV and publications 1

9a. Do you require an oral defence as part of the final examination of the doctoral thesis?

One respondent did not answer this question; all 25 others said 'yes': an oral defence is required.

10 If an oral defence is required, is it mandatory for the external examiner to attend the oral defence?

No	9
No but encouraged	2
Yes	2
Yes or phone or video conference	11
No response	2

Practice seems to be evenly split on this issue, with the largest number relying on teleconferencing or videoconferencing when an external is unable to attend in person.

11. Are the members of the supervisory committee voting members of the oral defence examining committee?

Yes	16
Yes, two	3
Supervisor only	4
Only one	1
No	1
No response	1

The responses to this question suggest that all but one university accept the principle that the supervisor, and/or other member(s) of the supervisory committee is/are appropriate judges of the final product, and of the student's ability to defend it. Three of the four institutions that allow only the supervisor on the examining committee are the Quebec universities that responded.

12. How large is the supervisory committee?

3	11
3 or more	4
3 usually	1
2 or 3	1
2 to 5	1
4	1
1	1
depends on unit	1
unknown	1
no response	4

This seems an issue on which either regulations differ across universities, or there are no regulations at the university level and the responses are simply empirical reporting.

13. Does the examining committee for the oral defence include one or more examiners internal to the university who are not members of the supervisory committee? If yes, how many?

Twenty-two answered yes; one answered no; one had no rules on this; and one said not necessarily. (There was one non-response.) The numbers of internal externals used at each university are reflected in the following table.

	Frequency	Percent
No response	3	11.5
1	17	65.4
1 or 2	1	3.8
2	3	11.5
2 or 3	1	3.8
3	1	3.8
Total	26	100.0

14. If the external examiner is not required to attend the defence, how is the external examiner's assessment used as part of the oral examination process?

The two answers to this question can be represented by this quote: "Either the Chair or the supervisor reads out the comments of the external and asks the questions of the external. The answers are assessed by the attending examining committee."

14a. For example, is the external examiner's report provided in advance to the examining committee?

Six said yes; six said no; one said "only to the student, supervisor, and defence chair". There was no response from the other thirteen (who were for the most part those who require the external's attendance).

14b. Is the external examiner required to submit questions that are asked at the oral defence?

Seven said yes; five said no; one said it is encouraged.

15. Is the voting protocol for the outcome of the oral defence a simple majority, or are some participants given more weight than others?

There was far from unanimity in the responses to this question, as is indicated in the following table.

	Frequency	Percent
No response	2	7.7
Ext has more weight	1	3.8
Ext veto	2	7.7
Majority	14	53.8
Majority, which must include ext	2	7.7
One neg allowed	2	7.7
Unanimity	2	7.7
Unanimity less one, with ext with majority	1	3.8
Total	26	100.0

The external examiner appears to have a privileged position in six universities.

16. How far in advance of the oral defence must the external examiner's report be received?

	Frequency	Percent
No response	1	3.8
No policy	1	3.8
Before exam begins	1	3.8
A few days	1	3.8
One week (incl 8 and 7-10 days)	17	65.5
Two weeks	3	11.5
Three-four weeks	1	3.8
Date set after reports rec'd	1	3.8
Total	26	100.0

Here, as in some other responses, there appears to be a combination of regulation and practice in the responses. It is also not clear for the longer time intervals whether or not the exam date is set in advance of receiving the report. I had implicitly assumed that practice in the question, but it may not be a valid assumption.

17a. Is the student allowed to read the external examiner's report in advance of the oral defence?

Here is where the differences among our institutions stood out most clearly. Responses ranged from "yes, essential" to "no absolutely not!" The 'yes' was expanded to indicate that the student needs to be able to prepare responses to the issues raised. Again there were some pragmatic responses, indicating that although it was not officially permitted (or there was no policy on it), there were no doubt supervisors or exam committee chairs who showed the report to the student.

	Frequency	Percent
No response	1	3.8
No	18	69.2
Not officially	2	7.7
Up to supervisor	1	3.8
Yes	4	15.4
Total	26	100.0

17b. If not, does the student receive a copy of the report at the conclusion of the oral defence?

	Frequency	Percent
No response	6	23.1
If requested	1	3.8
No	3	11.5
No policy	1	3.8
Not officially	1	3.8
Not usually	1	3.8
With ext permission	4	15.4
Yes	9	34.6
Total	26	100.0

One of the 'yes' responses went on to raise an issue that we might all need to look into, as follows.

"In the case of a hung jury or a failure, each examiner must write a post-examination report for the Dean. These are considered confidential advice to an official under our Freedom of Information and Protection of Privacy Act and are not released to the student without the writer's permission. (I think we're going to end up in court fairly soon about this one.)"

Comparison of Canadian and Australian practices

The 'Framework for best practice in doctoral examination in Australia' (hereinafter 'Framework') published in August 2005 (DDOGS, 2005) provides an excellent context for comparing the Canadian practices identified from the survey with Australian practice. In many respects relevant for this topic, Australia and Canada represent the closest available comparators. Both countries have relatively small populations spread across large areas, in contrast to the US with a large population in a similar sized area, or the UK with a large population in a small area. The number of universities in each country is relatively small relative to the US and the UK. Australia's DDOGS lists 43 members (http://www.ddogs.edu.au) whereas Canada's CAGS lists 48 (http://www.cags.ca). In both countries, not all of the universities provide doctoral education. All three of these factors—population, land area, and number of universities—have a bearing on the ways in which it might be feasible to examine doctoral theses and/or candidates.

Canada's overall population is roughly 50% larger than Australia's—32 million in 2005 in contrast with 20 million in Australia. Both, however, are small relative to the US at 295 million, or the UK at 60 million. Population densities for Canada are higher than for Australia (3.6 vs. 2.6 persons per sq. km.), but both are very much lower than in the US or UK (32 and 250 people per sq km respectively). In both Australia and Canada, most of the population lives in a relatively narrow band on the margins of the country. Hence Australia and Canada have similar problems of distance to overcome for personal interaction within the country. Australia has the further problem of large distances to other countries, which Canada does not have. (For comparability, all numbers here were taken from http://www.cia.gov/cia/publications/factbook/index.html.)

Comparing the survey results with DDOGS "Framework", seven topics stand out for discussion. They are:

- The number and location of external examiners
- The decision on when a thesis can go to the external examiners
- Conflict of interest criteria for external examiners
- The presence or absence of an oral examination
- The inclusion of external examiner(s) in the oral exam
- The role of the supervisor in the oral exam, and
- The timing allowed for external examination.

The number and location of external examiners

The interesting similarity between the two countries is the consistency in calling for more external examiners than are required officially. Canadian universities consistently use one, where none are required by legislation or regulation. DDOGS calls for two or three, where DEST, in the RTS, calls for at least one. The difference is that Canadian universities do not mandate one external to the country, whereas the preamble to the DDOGS document states that the use of examiners from overseas "is an important means by which the quality of Australian doctoral degrees is benchmarked internationally and the *work of Australian doctoral candidates made known.*" (emphasis added). It may indeed be this latter issue that is the more important at present, and is not so much an issue for Canadian universities, who are less distant from the other English-speaking countries. Certainly many Australian universities are already acknowledged to be on par with other strong universities elsewhere in the world.

The decision on when a thesis can go to the external examiners

This issue is interesting because it is not mentioned in the DDOGS "Framework." As was indicated in the responses to question 2a above, it is an issue that has caused some difficulty at Canadian universities, and on which practice varies. On the one hand, we do not wish to send out for examination a thesis that does not reflect the university's normal standards. On the other hand, it is the student's thesis. It may be helpful to add a comment on this issue in the 'Framework', perhaps along the lines reflected in the University of Guelph form referenced above.

Conflict of interest criteria for external examiners

This issue is dealt with in the 'Framework' under the heading "Conflict of interest in the examination", and in the above survey results under questions 5b and to a lesser extent question 8. The University of Victoria was the only one to provide further details about the specific criteria. Their criteria focus as much on the relationship between the external and the student's supervisor as on any relationship between the external and the student, which the 'Framework' seems to emphasize. In our experience at McMaster, it is the supervisor's relationships that are sometimes more problematic. Tinkler and Jackson (Tinkler, 2000) point out how difficult it can be to ensure that there is no relationship between the supervisor and the external given memberships in discipline-based associations and even professional working groups. They discuss this issue in more detail on pp. 67-79 of their book (Tinkler, 2004).

The presence or absence of an oral examination

The 'Framework' does address oral examinations, but comments that they "may be appropriate in some cases," implying a weak endorsement at best. The two principal reasons suggested for the absence of a final oral examination in Australia are distance based: the candidate has usually left the university prior

to or upon submission of the thesis, often to go to a different country; and one or more examiners are usually chosen from outside the country, making their attendance at a defence or examination problematic. These issues can often be overcome by teleconferencing, or videoconferencing especially over the internet. They were decisive a few years ago, but are no longer so definitive now.

Mullins and Kiley suggest that there is a more fundamental reason not to hold an oral exam; one based on the issue of what exactly is being examined. They identified two different views among experienced examiners on what they were examining (Mullins, and Kiley, 2002).

"One view was that it is the thesis, as a complete and comprehensive document that will remain on the library shelf, that is being examined. The other argument put forward was that it is the student as a potential researcher who is being examined and, therefore, ambiguities and perceived, although not necessarily demonstrated, potential should be teased out and followed up in a discussion with the student."

It seems clear that the Canadian view is that it is the student being examined.

The inclusion of external examiner(s) in the oral exam

The problem of distance for travel for the external to attend a defense is common in Canada as well, which is no doubt why the responses regarding the external's attendance in question 10 above were mixed. Of the 26 respondents, 25 required an oral examination (or viva voce); the 26th respondent did not answer this question. Of the 25, half (13) required the external to attend the oral defence, but only 2 insisted that attendance be in person. All others permitted attendance by telephone or video-conferencing. Given the extent of the country (across six time zones), this seems a sensible way to control travel costs (and time), yet incorporate the external in the defence. Two more encouraged the external's attendance. The remaining nine institutions do not require the external's participation in the defence, but still require an oral examination of the student. McMaster is in this last category, on the grounds that we want the best examiner to read the thesis, regardless of where he or she is located or whether he or she is able to attend the defense.

The role of the supervisor in the oral exam

The 'Framework' is explicit about the supervisor's role: "The supervisor must not be an examiner." This statement appears under the heading for conflict of interest, so one might infer that the supervisor is deemed to have an unavoidable conflict of interest. Practice varies within Canada on this, as is clear from the responses to Question 11. The majority of institutions (16) permit all (usually 3) members of the supervisory committee to be part of the (oral) examining committee. It would appear that there is a difference in the view of the supervisor's role between the two countries. This may relate as well to the first item discussed in this section, which is how or when it is judged that a thesis can go to the external examiner.

The timing allowed for external examination

Anecdotal evidence suggests that in Australia there are often considerable delays in external examiners returning their comments. Confirmation of this can be seen in the "Framework's" section on duration of the examination, where it states "This is probably the most vexing issue for candidates and administrators." As can be seen from Question 16 above, most institutions have a deadline for the return of the external's comments that is set with regard to the timing of the oral defence. Only one university sets the date after the report has been received. Certainly at McMaster we have found that the firm deadline

of the oral defence has had a very good effect in ensuring the external examiner's report is returned within the month that we allow. As a result, the total time from the student's submission of the thesis (with the approval of the supervisory committee) to the defence is now down to only 7 or 8 weeks. Holding an oral defence can be used to expedite overall times for the thesis examination process, not to slow them down. This fact seems to be recognized in the 'Framework', in that it mentions the use of an oral examination "to provide an agreed date for the conclusion of the examination."

Conclusion

Australia and Canada are reasonable countries for which to compare practices around doctoral examinations. Practices differ in important respects, but each can benefit from knowing what the other is doing. The DDOGS 'Framework' will provide a useful basis for future discussions in Canada. It is hoped that awareness of Canadian practices may similarly be useful in Australia.

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Appendix A: Universities that responded to the survey

Alberta	Ottawa
British Columbia	Queen's
Calgary	Regina
Carleton	Saskatchewan
Concordia	Simon Fraser
Dalhousie	Toronto
Guelph	Trent
Lakehead	UNB
Laval	Victoria
McGill	Waterloo
McMaster	Western Ontario
Memorial	Windsor
Montreal	York

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Working in the new postgraduate research environment: Supervisory challenges for workplace research (supervisor support and development)

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Abstract

The pressures of the new postgraduate research environment to produce contextualised and workplace based research have created a pedagogical framework that entails challenges for research supervisors. This paper uses four case studies to explore the tensions and dilemmas for supervisors and students, and identifies challenges about representation of knowledge; the challenges of supervising community or organisational based research; the challenge of responding to dynamic workplace research projects and the challenges for the supervisor as coach and mentor. Each case study also highlights the large personal investment by both supervisor and students in the research process. The paper also raises questions as prompts for ongoing debates about the role of the supervisor, the purpose of workplace based research, the tension between university and workplace requirements, and the representation of new knowledge. The case studies illustrate the way in which supervisors and students working in these degrees are constantly negotiating around 'traditional' university practices, forging new practices and questioning the value of other practices.

Introduction

The relationship between higher education and the knowledge economy, as well as the recent changes to the management of doctoral education in Australia, has had significant impact on the nature of doctoral research. A particular aspect of this new postgraduate research environment is a blurring of boundaries between pure and applied knowledge, re-conceptualisations of knowledge production, knowledge and work, research and practice (Garrick and Rhodes, 2000). This focus on situated and contextualized knowledge production is also partly due to the increasing numbers of doctoral students wanting to research their professional fields (Evans, 2002). This paper explores how these pressures create a pedagogical framework in doctoral programs that entails challenges for research supervisors.

This paper arose out of our shared view that the current literature, although providing expectations about, and specific examples of, new practices, does not sufficiently explore the nature of the newly emerging supervisory relationships and, in particular, the challenges that face supervisors as they adapt to the new research environment. As supervisors move over into this environment, there seems to be an assumption that the 'traditional' university practices will transfer across, whereas in practice, the new environment throws up new complexities for research supervisors. As well, there continues to be little recognition by those in more senior levels of university management of the nature of these dilemmas, and therefore provide little institutional support for the process of meeting the challenges.

This paper is a collaborative exercise between three authors from two different institutions, and is derived from a broad range of research, practice and insider experiences. Two authors are supervisors of students in a PhD by project degree and Masters Honours at a metropolitan university. Their research students are located in a diverse range of workplace sites, such as TAFE, government departments, industrial and community based organisations, located throughout Victoria, NSW and South Australia. The other author has completed a major ethnographic study of two different workplace based doctoral programs in two different metropolitan universities in Australia; one in Environmental Science and the other in Nursing and Midwifery. Each of the three authors has also recently completed a workplace based doctoral degree.

We wrote this paper drawing on our different experiences and chose to use four case studies to illustrate the tensions and dilemmas for supervisors and students. These case studies are not amalgamations of experiences but are particular experiences with individual students, used here to illustrate common dilemmas. Some details have been changed to protect the identity of individuals. The first part of the paper reviews the literature on doctoral education and its identification of some of the anticipated, and some of the practical, impacts on the role of higher degree research supervisor as they adapt to working with new types of research students, and in new types of doctoral programs, producing new types of knowledge.

As a qualitative study using a case study methodology (Stake 2003), this paper consists of four cases which are intended to highlight the supervisory challenges for workplace research. These cases have been used as a narrative device to provide a window into the lived reality of student and supervisory experience. The cases are likely to resonate with research students and supervisors. The data for the four cases emerged from an impact and process evaluation that was informed by Owen (1993). The evaluation included interviews with 21 research students. The interviews were structured around 12 questions relating to student experiences. Data from supervisors was gathered via a focus group to which four supervisors contributed. Two other supervisors contributed comments after reading the transcript of the focus group discussion.

Challenges for supervisors in the new postgraduate research environment

The role that a supervisor plays, and the nature of the work that a supervisor does, is influenced by the context in which he/she supervises, and so needs to be understood 'ecosocially, as a total environment within which postgraduate research activity ('study') takes place' (Green, 2005, p. 153). Part of that context is that there are now different student cohorts and different types of doctoral degrees brining changes to the traditional dyadic and hierarchical model of supervision (Brennan, 1998a; Yeatman, 1998). It is expected that, in this new environment, supervisors will have to learn more from their students and that the relationship will merge into a 'much more equal relationship, recognising the different expertise and interests of both parties in the supervisor-student relationship' (Brennan, 1998b, p. 74). Supervisors will have to accommodate as a student someone whose expertise may not only be more relevant to research in a particular site, but also someone who is often older or more senior in their positions than the university staff member involved as supervisor (Brennan, 1998a, p. 81).

This then challenges the traditional hierarchical model of supervision, based as it has been on the expert/novice relationship. A recent study of two doctoral programs with strong workplace focus (Malfroy, 2005, p. 176) found that:

> The relationships between supervisors and the doctoral students were more collegial, but still 'unequal' due to the

> strong academic agenda of doctoral study, despite it being framed around professional practice.

The study also found that although the relationship remained hierarchical, it was not in the master/expert and apprentice/novice model. Students in the programs were not viewed as apprentices, as most had no intention of aspiring to work in academia, but were viewed as professional practitioners who will continue to work in their profession and who come to doctoral study with a comparable, but different, set of skills and knowledge to academics (Malfroy, 2005). Supervisors are often not experts in the research topic area, but instead offer a 'less utilitarian and more critical-reflexive view of supervision and candidature' (Green and Lee, 1999, p. 219). It has been suggested that supervision of workplace research may require 'a level and range of expertise which is beyond that required for the generally more narrow focus of the PhD' (Evans, 1997, p. 180).

The introduction of panel supervision in Australian universities has also meant that more people now take on some part of the supervisory responsibility (Pearson, 1996), so that it is more generally the rule now that both formally, and often in practice, there is a primary supervisor working with co-supervisors. Another feature of the new research environment has been an increase in the institutional involvement and monitoring of candidates (Green and Usher, 2003), including pressures on supervisors to encourage students to complete their candidature within shorter timeframes, to present and publish during the candidature and to satisfy academic standards for examination, as well as workplace requirements for research outcomes.

In the literature, there are claims that industry/workplace based research may challenge the traditional range of supervisory practices by fostering new and productive partnerships with supervisors in the workplace (Brennan, 1998a; Lee, 1997). For example, Hodgson, Lloyd and Brownrigg (1998) reported that in their program, students had both a team of supervisors and as well as access to external experts though web based discussion boards. In a study which looked at postgraduate students jointly supervised by academic and industry partners, Powles (1998) noted that:

> new attention needs to be directed to the elements of good supervisory practice in three-way or multiple-partner relationships, which would be unfamiliar to many of the Scheme's supervisors, and in which students might require more help to conduct their research effectively in both familiar and unfamiliar settings.

Not only do these two-way or three-way relationships impact on the nature of supervision, but the increasing relationships between universities, industry partners and community organisations impact on understandings about the purpose of doctoral study and expectations about the type of knowledge produced from research study. The work of Gibbons and colleagues (1994; 2001) on modes of knowledge production identified features of knowledge created through situated and contextualised research activity, known as Mode 2. Critiques of this analysis in relationship to doctoral research, and suggestions for alternative modes, (for example, Neumann, 2002; Scott et al, 2004) indicate that there are more diverse types of knowledge production evident in doctoral programs. The discussions indicate that the relationships between workplace research and new knowledge are still largely undefined (Maxwell and Shanahan, 2001; Usher, 2002; Harman, 2002; Scott et al, 2004; Brennan et al, 2002).

These new relationships also raise questions about the role of research, with governments giving preference to research that produces economic benefits and supports society (Kemp, 1999) whereas others argue that this economic view of

research presents a restricted view and neglects the view of research as a transformative, creative process of discovery (Brew, 2001; Barnacle, 2005).

There are also debates about the way in which workplace based research is framed. For example, McWilliam (2005) argues practitioner research implies a major dilemma, in that there is the need to adopt a 'disinterested' or detached perspective with research, which in turn appears to be in conflict with the 'interested' perspective of the practitioner researcher. Research methods and supervisory processes need to:

> provide practitioners with a means of discovering their situation anew while at the same time valuing the tacit knowing that is produced out of their embeddedness in practice (McWilliam, 2005, p. 121).

These features of the new postgraduate research context are exemplified in the following case studies, which highlight the challenges of supervising in this new postgraduate research environment. In particular, the case studies highlight the complex personal and institutional investment in doctoral research.

Four case studies

The purpose of this paper is to explore the challenges from the perspective of the supervisor. The experiences of research students are an integral part of the challenges and they deserve their own story about the dilemmas they face. The four cases do not cover all the challenges; many others are available, such as the challenge of part-time and distance students and the difficulty of finding quality meeting time with busy professionals, however we chose four that we feel capture some of the dilemmas relevant to this conference.

Forging a new type of supervisory relationship

Margaret, a health care professional, was commissioned by the Director of the hospital in which she worked to establish a particular patient care facility at the hospital. Simultaneous with this workplace initiative Margaret enrolled in a postgraduate research program. The hospital director saw the research degree as a vehicle for improving workplace outcomes. Like many others in the emerging professions such as nursing, media and the arts where degrees are relatively new, Margaret did not have an academic qualification but had the highest available professional qualification. During more than 20 years of nursing practice, she had undertaken numerous professional development courses. Despite this professional expertise, she saw herself as 'just a nurse' and embarked on her masters program with a mixture of trepidation and excitement. So successful were her efforts that prior to submission the health care centre that she developed was recognized within the health system as a best practice facility. Consequently she was in demand as a consultant, speaker and member of government advisory committees. This transition was a speedy one, occurring over approximately two and a half years and was done in conjunction with a fulltime workload.

Although as a supervisor it was a delight to see Margaret develop professionally and academically there were a number of challenges. The first challenge related to how qualitative research methodologies could be used within the hospital project to achieve better outcomes. One of the underlying aims of academic research programs embedded in the workplace is that the workplace can actually benefit from the intervention and expertise of the academy. However achieving this aim is problematic.

Secondly, it was difficult to simultaneously manage the requirements of a dynamic workplace project and its wider implications with the requirements of successfully completing a postgraduate research degree. In Margaret's case, the health care facility was completed well before the submission to the university.

Moreover, by the time of submission, key stakeholders within the health system had recognized the health care facility as a best practice model. Recognition by the academy was alternatively viewed as important but anticlimactic. A related challenge was emphasizing to the candidate and to the hospital more generally that academic recognition, in the form of the successful completion of the degree, added authority to the project.

A third challenge was coaching and facilitating the student's transition from a working professional to a recognised expert in their field. The coaching model captures this challenge in that while the coach may not have expertise in the field, they do have the capacity to understand the context and a skill set that is able to promote research learning and professional development. One of the most important aspects of this coaching role was the freedom to ask questions and challenge practices that would not otherwise be exposed to analysis.

How can workplace achievements be more effectively integrated with academic requirements?

How can….?

The political and personal challenges of supervising community/ organisational based research

The focus of Anne's research masters degree was fostering links between urban and regional communities. Anne was committed to using local narratives as a catalyst for political and social change. Despite the lack of recent academic research experience Anne made significant progress and after approximately two and a half years she successfully upgraded to a doctorate. This significant achievement did not allay her feelings of inadequacy about her academic ability and the worthiness of the research project.

Anne's project was located within her rural community, her workplace and her family. As the project progressed Anne became increasingly aware of the complex inter-relationship between context, personal identity and roles, including her role as a researcher. The intimate nature of her connection to her research and to the project outcomes placed considerable strain on the candidate to do well and to produce a fair, accessible and authentic piece of academic work that would be relevant to her local community as well as to the academy.

Anne's research project posed a number of supervisory challenges. First, it was a challenge to manage two, at times conflicting needs: the personal which was aimed at overcoming Anne's low academic self esteem while at the same time encouraging her to distance herself from the messiness of the project so that she could rigorously and dispassionately analyse it. In the confines of the academy it may be easy to draw a clear line between these supervisory roles, in practice it is more difficult to discern appropriate responses. Some supervisors may argue that it is not the role of the supervisor to counsel a student but from my experience this is always required to differing degrees. Second, there was the challenge of forging a collaborative, flexible and collegial relationship while maintaining my institutional responsibilities as a research supervisor. A third challenge related to the political nature of the research project, a challenge that was exacerbated by the more intimate environment of a rural community. In this sense then the supervisor confronted a dilemma: on the one hand a need to be sensitive to the student's (like so many students pursuing research in their own workplaces) ongoing relationship to the project and its stakeholders; and on the other, the fearlessness and commitment to knowledge dissemination that is supposedly valued in the academy. The acceptance of the project by Anne's local community was vital bar by which to accept the overall success of the project. It was the outcome that she would live with long after the academic

exercise was over and it was these issues which tended to dominate many of the supervisory conversations.

How can a supervisor help students develop the balance between 'disinterested', i.e. detached, and 'interested, i.e. involved, perspectives on research?

How can a supervisor balance the desire for a collaborative, flexible and collegial relationship while maintaining institutional responsibilities as a research supervisor?

How can a supervisor build the confidence of an academically inexperienced student?

Challenges of responding to dynamic workplace research projects

Kim, who was a senior official in the Ministry of Education, enrolled in a workplace based doctoral research project. The initial focus of the project was the decentralization of education, in particular the implementation of school and community based decision-making. Kim's project emerged directly from a new policy direction that had been promulgated by the government. One of the objectives of the new policy direction was to improve educational outcomes especially in socially disadvantaged areas by increasing community involvement in school decision-making.

Kim's research was funded by a multilateral agency and he was actively encouraged to pursue the doctoral program by the director of his department. Kim proposed an action research approach for the project. As Kim's supervisor, I agreed that this approach was well placed to expose the lived reality of the stakeholders and the political forces that influenced their world. It also had the advantage of being responsive to emerging needs and of assisting the practitioner to manage any change process. At the same time I was conscious that a research project that was responsive to the context and that was concerned with implementing change, added complexity. Responsiveness is not absolute and Kim as a practitioner researcher had to juggle the competing demands of government policies, bureaucratic priorities, a diverse stakeholder group, the project objectives as well as the need to demonstrate satisfactory progress towards a doctoral degree.

Within 12 months these competing demands had impacted on the focus of the project. It became evident that the implementation of the decentralization policy had resulted in some uncertainty and even conflict as the agenda of a number of key stakeholders was reshaped in the light of new knowledge and experience. This was especially the case in the area of financial management where the respective roles of national, regional and local government representatives and officials was unclear and in some cases in conflict. As a practitioner within the Ministry of Education, Kim could not ignore the impacts of, or changes in, the decentralization policy. The impact and changes were not confined to Kim's practice as a senior manager – his research project was also affected. In fact a major research project challenge was mapping the dynamic context of the project.

Resolving the challenge of completing a research project in a dynamic workplace context does not occur in the rarefied world of the academy or by being methodological pure, but is resolved in the messy world of research project practice. Insisting that Kim adhere to the research plan that was articulated at the time of his first review did not seem a realistic path to follow in order to secure a timely and successful completion. At the same time, it was unlikely that a project that was constantly changing could be successfully completed. In these circumstances I was confronted with providing realistic options that were built upon the reality of the dynamic context but that also ensured progress towards the completion of a worthwhile doctoral project. One

option was to advise Kim to insert himself into the centre of the project so that instead of decentralisation being the focus of the research, the focus becomes the difficulty of Kim managing a particular aspect of the decentralisation project. Clearly there are numerous other options that a supervisor could suggest. However in framing these suggestions the supervisor needs to develop an understanding of the agendas of the other stakeholders such as the multilateral funding agency and the Ministry of Education. Understanding the context and the competing agendas in a dynamic workplace research project is easy for the insider, the candidate or the outsider, the supervisor. In Kim's case there are obvious shortcomings in suggesting that the practitioner becomes the focus of the project. One such shortcoming is the risk that the research project becomes an exercise in self-indulgence and that the applicability of the knowledge that is generated cannot be used more widely. There is also the danger that such an approach may not meet with the approval of an examination panel.

Another challenge in dynamic workplace projects such as Kim's is advising the student on how to manage the inevitable trade-off between methodological rigor, with the pressure to secure accurate and timely information that can be used to inform action.

What can a supervisor do to ensure a realistic research path to follow in order to secure a timely successful completion, when the context is the messy world of practice?

The challenge of representing knowledge

Claude, a TAFE teacher enrolled in a research masters degree with the intention of investigating ways of improving environmental education. Using an action learning/action learning approach one project quickly turned into a number that covered both urban areas within the regional city and rural areas in the surrounding districts. A key theme that emerged from the overall research project was the importance of environmental connectedness. It was at this stage that the question of representation of the research asserted itself. How should a workplace research project concerned with environmental connectedness be represented? It seemed that the products of a project seeking to promote environmental connectedness ought to connect with the local community even if this meant that it did not readily fit with the traditional requirements of the academy. I advised Claude to take a risk in the way that he presented his project and, in particular, the form of the written text that explained the project.

Knowledge, its characteristics and how it is used, lies at the core of this challenge. Ought propositional knowledge, the knowledge that dominates the academy, have had a dominant position in Claude's project, or should the knowledge needs of the workplace and the community take pride of place? While the stakes in Claude's case were not as significant as it would be in a doctoral project where there is an expectation that the research would generate a "significant and original contribution to knowledge of fact and/or theory" (RMIT University, 2002) the underlying question remains. Traditionally, the requirement for originality has been constructed with the characteristics of propositional knowledge sitting quietly but powerfully behind the scenes like a grand puppeteer. Disciplinary knowledge with its sacred like propositions enjoys a privileged existence within the academy.

The privilege accorded propositional knowledge has been challenged. More than forty years ago Polanyi (1958) articulated the role of tacit knowledge in shaping our actions in our world. Tacit knowledge was the great 'unsaid' and, as a consequence, was not incorporated into the pantheon of recorded knowledge. Influential in this continuing challenge has been the work of Gibbons who identified two modes of knowledge – Mode 1 and Mode 2. Mode 1 or traditional

knowledge is based on scientific practice and is "generated within a disciplinary, primarily cognitive, context" while Mode 2 "knowledge is created in broader, transdisciplinary social and economic contexts" (Gibbons et al., 1994). According to the authors, there are a number of differences between Mode 1 and Mode 2: disciplinary/transdisciplinary; homogeneous/heterogeneous; hierarchical/non-hierarchical; tending towards permanence/tending toward transience. Underpinning Mode 2 knowledge is social accountability and reflexivity. One impact of the tension between Mode 1 and Mode 2 on this project is that whereas Mode 1 would seek to minimize the practice setting, Mode 2 privileges the practice setting.

As Hager (2001) noted, academic processes have been shaped by the standard paradigm of learning (the acquisition of universal ideas that can be written down) and it is this paradigm that dominates the academy. A postgraduate research supervisor is confronted not just by the challenge of knowledge but also by the existence of power. Foucault (1980) explicitly linked power and knowledge – knowledge creates power and the powerful, the legitimate knowledge in society. In seeking to resolve this challenge the supervisor can be caught between the needs of the project and the participants in the workplace and the mysterious rites of the university examination process. In the case cited above I, as a supervisor, was confronted by a dilemma. On the one hand the safety of conformity so that the 'academic' text and the project that supports it is more readily accepted, especially by those who use propositional knowledge as their frame of reference. On the other hand, a more creative approach to representation that more adequately captured the research project and the workplace practice more generally but which increased the risk of rejection.

As it happened, after three years of work Claude decided not to complete his master's degree. I was devastated when he broke the news of his decision to me. However he was more sanguine and in a subsequent letter he claimed he found the masters experience very fulfilling and an invaluable source of professional development in his work as an environmental education practitioner. Although as an educator I found Claude's letter uplifting, as a research supervisor my reaction was more mixed. The RMIT 'Research By Project' program has three aims: first, a more knowledgeable and skilled practitioner; second, a contribution to professional and scholarly knowledge; and third, a body of work or change in practice. Claude appeared to have largely fulfilled these educational objectives. Yet, from a bureaucratic perspective he and I were unsuccessful and moreover, in a period of financial scarcity I, and the University more generally, had expended significant resources for little or no return.

This case raises questions about the suitability of university research degrees to provide a suitable outcome for a 'change in practice'?

It also raises questions about whether a supervisor should persuade a student to 'let go' of a more work – based research topic and to instead turn it into a more 'university' acceptable topic.

It also raises questions about whether a 'withdrawal' is really a 'failure'?

Conclusion

In this paper, we chose to draw on specific cases to highlight the particular and practical nature of supervisory challenges, in order to complement the theoretical debates in the literature about the contemporary postgraduate research environment, the knowledge economy and new knowledge production. Within this context, there is evidence of new types of supervisory relationships emerging, based not on the expert/novice model, but based on a model in which the supervisor performs more like a coach and mentor, both encouraging

and critical. In particular, the cases illustrate the nature of the challenges for supervisors and highlight how difficult it is to simultaneously manage the requirements of a dynamic workplace project with the requirements of successfully completing a postgraduate research degree. This tension is apparent in issues about the type of research outcome, the applicability to the workplace, the expectations of the university and the personal investment by both supervisor and students in the process. The supervisors and students working in these degrees are constantly negotiating around 'traditional' university practices, forging new practices and questioning the value of other practices.

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Academic literacies, communities of practice, discourse models and genres: A teaching and research framework for writing advisors of second language research students

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Abstract

This paper outlines an ethnographic approach to researching (and teaching) academic literacies, employing cultural models and an understanding of the socially-situated production of the thesis as genre as a robust theoretical and methodological framework for examining and teaching second language academic literacy. The academic literacies approach investigates the socially situated production of written academic genres in the disciplinary discourses of the supervised writing process. In conjunction with the anthropological concept of cultural or discourse models, academic literacies is explored here primarily as the most compatible framework for qualitative research into second language writing of research genres. This paper discusses the relevance of the academic literacies approach to postgraduate writing pedagogy and aims to establish the theoretical and applied relevance of the academic literacies framework and cultural models to higher education research into discipline specific thesis writing practices.

Introduction: Academic literacies and writing in higher education

Researching and teaching academic literacy to research students requires an underlying theoretical commitment to the nature and purposes of writing in higher education. Three models currently compete to define academic literacy – study skills, academic socialisation, and academic literacies as social practice.

The study skills approach treats writing as a generic university practice constituted by a set of definable transferable skills, e.g. be coherent, write topic sentences, which students learn to fix writing problems. It is an approach which is evident in study skills textbooks and is the institutional rationale for learning skills centres (Craswell, 2005; Davis & McKay, 1996; Hart, 2005; Matthews, Matthews, & Bowen, 2000; Oliver, 2004; Peat, 2002). Practical study skills approaches to written genres in higher education eschew empirical analyses of actual texts, propose generic (trans-disciplinary) conventions, and rely on common sense categories such as audience, argument, and logic as key concepts (e.g. Craswell, 2005). As Hyland (2000) observes, the assumption that some set of trans-disciplinary academic conventions and practices (skills) will be adequate to teaching and understanding academic literacy is fundamentally flawed since writing 'reflects and in turn constitutes, social and institutional practices derived from contexts which are principally disciplinary' (p.145). The 'common sense' transparency of such terms and their assumed univocal meaning are in need of research and pedagogic interrogation; this is one of the key claims of the academic literacies approach (Lillis, 1999; Lillis & Turner, 2001; Street, Jones, & Turner, 1999).

Academic socialisation approaches acknowledge the importance of the disciplinary culture, e.g. engineering, medicine, biology, in determining acceptable forms of writing and speaking at university. Applied linguistics approaches genres as definable rhetorical structures or moves in texts with pedagogy aimed at academic socialisation or accommodation of student writing

to such forms (e.g. Swales, 1990; Swales, Barks, Ostermann, & Simpson, 2001; Swales & Feak, 1994). Approaches informed by academic socialisation see the task of faculty and advisors as helping students to acculturate or socialize to the discipline specific conventions of discourse communities through similar teaching approaches to the study skills model. Academic socialisation places emphasis on making transparent the genre conventions underlying disciplinary conventions. Academic socialisation is apparent in linguistically oriented genre and corpus-based approaches (Hyland, 2000; Swales, 1990). Such an approach is consistent with pragmatics approaches to English for Academic Purposes (EAP) (Allison, 1996; Swales, Barks, Ostermann, & Simpson, 2001), and EAP texts based on these principles (Huckin & Olsen, 1983; Hyland, 2003a, 2003b; Swales & Feak, 1994, 2000). A feature of this approach is the rhetorical and linguistic analysis of existing academic genres, eg. the research article, with a view to making explicit to students what these conventions are. While academic socialisation is an advance on study skills approaches in that it involves empirical analysis of text forms and function, the limitation of such an approach is that the discourse community is generally assumed to be homogenous, and literacy is not situated in cultural, ideological and socio-historical context.

The third approach, the academic literacies approach, approaches writing in higher education as a social practice bound by ideological, historical, and social values. It challenges the transparency of genre conventions to students and faculty and foregrounds the institutional contexts of literacy that construct writing and speaking (Lea and Street, 1998). The academic literacies approach, 'views student writing and learning as issues at the level of epistemology and identities rather than skill or socialisation [and] … views the institutions in which academic practices take place as constituted in, and as sites of, discourse and power' (Lea and Street 1998, 159). It is an approach which is sceptical of the discourse of transparency in the disciplines (Turner, 1999) which assumes that criteria terms such as be explicit, critical, argument, structure, etc., are transparent, univocal, and in little need of interpretation: 'such conventions are treated as if they were 'common sense' and communicated through wordings as if these were transparently meaningful' (Lillis & Turner, 2001, p.58). In addition to the multiple meanings of such terms in practice, the discourse of transparency is upheld by the conduit model of language in which meaning and knowledge are separated and language is an 'adjunct, the means whereby knowledge, which is discovered and stored in the mind, is represented and communicated to other minds' (Lillis & Turner, 2001, pp.62-63).

The academic literacies framework promotes a broadly ethnographic approach to the situated production of texts in institutions which is compatible with cultural models as a tool of discursive inquiry and genre-based research. Such an approach complements the textual (e.g. linguistic and rhetorical), socio-cognitive (eg. studies of reading and interpretive behaviour) analyses of academic genres familiar in applied linguistics with ethnographic (e.g. observational accounts of communities of practice) and socio-critical research procedures (eg. socio-cultural and ideological studies) (see Bhatia, 2004). In cross-cultural settings, such as discussed in this paper, the discursive production of research texts is analysed using (socio) cultural models as proposed by Gee (1996) and others (Foley, 1997; Hymes, 1995) in investigations of literacy practices. It is suggested that such a combined multi-method qualitative approach will help represent education as a practical accomplishment (Freebody, 2003), rather than as a theoretical abstraction.

The need for an adequate socio-cultural framework for second language literacy is not recent (McKay, 1993). Study skills and academic socialisation approaches to academic genres avoid addressing the broader institutional and socio-cultural contexts of English proficiency as one of the agendas for second language literacy (McKay, 1993); an ideological agenda which others see as central to

classroom practice (Benesch, 2001; Canagarajah, 2002; Pennycook, 1998). As Ann Johns (2003) has recently noted, the socio-cultural embedding of text production – the academic literacies approach – still plays a limited role in genre-based pedagogy for second language writing. In her proposal for a socio-literate approach to developing academic literacies (Johns, 1997) texts are socially constructed in communities of practice through conventions, histories, culture and other contextualized discourses. To adequately employ the academic literacies framework in second language literacy in higher education a robust notion of genres and cultural models is essential. This paper argues that the scepticism associated with the academic literacies approach is warranted, and that it is inherently a more complete approach than the study skills and academic socialisation approaches.

Genres in communities of practice

Learning to write academic genres involves developing a capacity to produce written texts according to academic conventions with an emergent understanding of the social practices of the disciplines (Hyland, 2000, p.145). Academic genres, such as the literature review, are constituted by communicative acts that are recognized by relevant communities as an authentic instance of the genre. Specific texts within a genre will show a high degree of similarity in structure, style and content (Swales, 1990). For medical writing, for example, generic rhetorical 'moves' have been outlined, (Horton, 1995; Nwogu, 1997), although they oversimplify actual variation. Particular disciplinary assumptions about epistemological frameworks or discourses and rhetorical structures, eg. IMRaD (Introduction, Methods, Results and Discussion), in the teaching and research literature in medicine and the health sciences simultaneously propose and confirm the existence of historically constituted shared assumptions (Bynum, Lock, & Porter, 1992; Horton, 1995; Matthews, Bowen, & Matthews, 2000; Skelton, 1994; Sollaci & Pereira, 2004). However, even these 'typical textualization patterns' (Bhatia, 2004p, 25) can be and are manipulated by experts. Although conventional approaches to genres in composition and applied linguistic studies separate genre knowledge from genre practice, since genre knowledge is only measurable through performance in text the distinction is somewhat artificial (Johns 1997; Bhatia, 2004).

Academic literacies approaches attempt to make transparent the social networks that form the communities of practice who legitimize written genre conventions in the disciplines. Community is a rhetorical representation of the expert audience who determine and sustain the conventions for genres (Miller, 1994). Communities of practice promote particular epistemological frameworks, and are often the subject of internal tensions (Bizzell, 1992; Brodkey, 1987; Gilbert & Mulkay, 1984; Hyland, 2000). Within communities of practice, such as sub-disciplines of academic medicine, experts will tend to assume the universality and transparency of the conventions they expect in texts and these generic assumptions will be backed up by some textbook representations. Individual academics (eg. research supervisors) may be blind to the documented historical contingencies, disciplinary variation, and cultural specificity of the texts they ask students to produce (Bazerman, 1988; Bazerman & Paradis, 1991; Bynum et al., 1992). Their generic assumptions will be reflected in their discourse about research (and their complaints about the inadequacies of students!). Both academic socialisation and academic literacies frameworks approach literacy as inducting students into a new culture through making explicit (and challenging in the case of critical academic literacy) the conventions of the relevant academic discourse community or community of practice (Brodkey, 1987; Lave & Wenger, 1991; Wenger, 1998).

The writing adviser and academic literacies researcher needs to bring awareness of the contingencies of community to writing research. This knowledge can be

used to reassure novice student researchers that their impressions of such contingencies are accurate and that writing is structured within somewhat flexible rhetorical constraints. Knowledge of these contingencies is also critical to researching the discourses of literacy that faculty experts employ to uncover the claims of these situated discourse models (Gee 1999). Such awareness can be used in conversation with expert faculty about helping students translate practical research knowledge into text. Resisting the assumed homogeneity of the rhetorical structure of research texts is more compatible with academic literacy as the situated production of text.

From culture to cultural models in academic literacies

While academic literacies approaches take a sceptical approach to discourses of literacy in higher education, second language students are often constructed in particular ways as inherently deficient in their capacity to learn and write. The situated literacies approach with its focus on in-depth case studies can help challenge the homogenizing effect of some of these discourses while also providing potentially a more nuanced confirmation of some of the deficit claims regarding international students.

A range of assumptions are made in higher education about the inherently different approaches to learning Asian students bring to higher education, including postgraduate NESB research students (Ballard & Clanchy, 1984; Cownie & Addison, 1996; Okorocha, 1997; Sillitoe, Crosling, Webb, & Vance, 2002; Violet & Renshaw, 1995; Wisker, 1999; Zuber-Skerritt & Ryan, 1999). Cultural and epistemological (theories of knowledge) differences are assumed to motivate the difficulties with writing that Asian students experience (Cadman, 1997; Canagarajah, 2002; Candlin, Gollin, Plum, Spinks, & Stuart-Smith, 1998; Ramanathan & Atkinson, 1999). However, a number of writers, including this researcher, question the value of some assumed cultural differences as intrinsically deficit (Biggs, 2003; Chalmers & Volet, 1997; Melles, 2004; Ninnes, 1999; Ninnes, Aitchison, & Kalos, 1999).

Deficit claims are often made on the assumption of undifferentiated uniform academic practices reinforced by study skills texts and others. Stereotypical assumptions about students also homogenize students into debatable groupings, eg. Asians, that ignore variation and dissipate the agency individuals may employ in research and writing. Finally, claims about the inherent limitations of non-Western approaches also ignore the variation in academic practices within academic disciplines and sub-disciplines alluded to above. Rather than viewing Western (Australian) academic conventions as homogenous, an academic literacies approach troubles this consensual image. An imagined convergent Western cultural model of literacy is used to contrast with an imagined convergent community and cultural model of Asian literacy practices. A more nuanced approach to second language writing is proposed by some scholars which alludes to, although it does not employ, cultural models as a tool of inquiry.

Atkinson (2003) suggests the need to 'to devote greater attention to the more-or-less tacit and unthinking social and cultural practices … which continuously operate in our contexts as academic writers, writing teachers, and members of various socio-cultural groups' (p.52). Ramanathan and Atkinson (1999) claim that a mainstream academic ideology of individualism that does not necessarily fit well with cultural approaches taken by ESL students underpins four principles of academic composition – voice, peer review, critical thinking, and textual ownership. They suggest this individualism is particularly challenging for students from Asia and that to understand NNS on their own terms in cross-cultural writing research requires 'a complex, multidimensional understanding of individuals-in-context' (p.66). In the humanities and social sciences, as Cadman (1997) remarks, Asian second language students struggle to develop a writer

identity and the 'need to set up one's own position in the written text' (p.8) which, she argues is due to the different epistemologies in which they are trained. Casanave (2003) also suggests that more 'in-depth cases studies are needed of individual L2 writers to adequately understand the responses of ESL students to writing demands in higher education institutions. The strength of some of these claims is the need for more complex situated analyses of text production. The limitation of some of these studies of second language writers is that they smuggle back in purportedly supra-ethnic, eg. Asian, epistemological and cultural difference on the basis of limited qualitative analysis of student practices.

A sceptical attitude to the assumed cultural deficiencies of Asian students and a sensitivity to the production of adequate writing products may be theorised within a discourse analytic perspective on academic literacy where cultural or discourse models play a key role. Gee (Gee & Green, 1998) proposes that cultural models, a key theoretical concept in anthropology (D'Andrade, 1995; Holland & Quinn, 1987; Kamppinen, 1989; Shore, 1995), can help explain different academic literacy practices. The concept of cultural models as a tool of inquiry to explain different academic practices is neutral with regard to the superiority of one model over another. Cultural models attempt to explain how the situated meanings individuals adduce and produce in spoken and written contexts correspond to culturally specific interpretive domains (Foley, 1997). In practice, cultural models correspond to socio-cultural variation within societies across class and ethnic divides as opposed to just cross-cultural variation. Thus, we may expect variation not only across overt national boundaries but also within societies, such as Australia, characterised by multicultural social and educational practices. In connection with schooling in the US, Gee demonstrates how alternative cultural models, eg. Afro-American, of storytelling are rejected in the classroom. (It is apparent how cultural model is indebted to early work by Bernstein (1971) on elaborated and restricted codes).

This discourse analytic approach proposes that in interview accounts of writing processes, feedback on writing, and student-tutor writing interaction we find situated meanings which may be explained by proposing cultural/discourse models as socially distributed explanatory frameworks. Such meanings in academic settings are up for negotiation. Thus, for example, the sometimes inappropriate response of second language students to quotation, citation, or paraphrase of sources may be linked to different cultural/discourse models of recognizing authorities in texts, models which can undergo change over time. Different models may also emerge in research practices and in supervisory relationships. Again, such models are not fixed and may undergo change. It should not be assumed, however, that groups of individuals will 'import' into the learning context a common set of interpretive practices (cultural models). Examining such models through research can contribute to pedagogy by exposing the assumed transparency and value of such models to public view and critique. A questioning of the transparency of discourses of literacy informed by cultural models remains central and can also contribute to learning and potentially debate.

Employing academic literacies, genres, and cultural models as research and teaching frameworks

Study skills and some applied linguistic genre approaches to thesis writing often assume that a generic rhetorical structure exists for theses, e.g. introduction-literature review, methods, etc., including particular communicative purposes for each subsection. Even recent textbooks such as Oliver (2004), which recognize some variation, reinstate this basic structure (introduction, literature review, methods, results, discussion). A number of recent studies of the rhetorical structure of theses have questioned this assumed homogeneity. In his

overview, Swales (2004), for example, claims this is a substantially over-simplified and misleading representation of the current state of affairs. The idea that an autonomous generic literacy exists is false although it is bolstered by conventional study skills approaches to written genres in the disciplines. The notion that students can adapt to discipline specific genres without a better understanding of the values and histories of such genres is, I contend, also misguided. Academic socialisation approaches such as genre-based second language teaching need to move beyond ideological neutrality in this sense and develop a more thorough critical pragmatism for practice (Cherryholmes 1999).

The implicit acceptance of variation within textual practices is central to the academic literacies framework and acknowledged as central to understanding genres as socially situated texts. An academic literacies as social practice framework provides a perspective on writing as institutionally situated by disciplines. Such an approach will adopt genre as a designation for discipline specific text forms and conventions, which need to be situated in institutional and (ultimately) historical context. Academic literacies is sceptical of the transparency of oft used terms like be explicit, logical, etc., employed in faculty feedback on writing employed in study skills approaches; these terms are potentially subject to multiple interpretations in practice by students and faculty. Such interpretations that are proposed by students and faculty may be seen to correspond to cultural models of academic literacy. Given the non-transparency of such models they can create obstacles to student learning in the thesis writing process.

The academic literacies approach has implications for writing advisors and supervisors guiding student to write theses according to the genre conventions of specific disciplines. The location of the writing advisor as campus mediators and researchers (Johns, 1997) gives them unique access to the contexts of the production of research texts. In addition to exploring the discourses of transparency and of cultural deficit, writing advisors are placed to expose the ambiguities and ideological investments of discipline specific practices and beliefs regarding thesis writing. Through situated research of discourses employed in spoken and written representations of genre conventions, writing advisers may arm themselves with knowledge to provide mediation between students and faculty experts within specific communities of practice. As in current academic literacies research, ethnographically-oriented discourse analysis will constitute the main framework for a situated understanding of textual practices.

Two examples from my own work of exploring academic literacy practices (group work and critical appraisal) go some way to this (Melles 2004, 2005). Individual tutorials and workshops on thesis writing practices in health disciplines, another of my current teaching areas, are also informed by a sceptical attitude to dominant discourses of literacy. The scepticism towards the historically contingent practices of text genres in the disciplines is an essential form of legitimacy for the writing advisor as campus mediator because it allows one to display to faculty and student alike an informed rhetorical expertise. I have found, for example, that the ability to know that the current discourse of research in public health privileges a pragmatic mix of qualitative and quantitative research methods is a concrete, professionally affirming example of such expertise which can warrant or legitimate the advisor's intervention in the text. Empirically-based knowledge of the conventions of the written research genres, literature review and thesis, is another area where expertise and legitimacy can be displayed and employed. Thus, in general, the academic literacies framework as a research and teaching framework offers writing advisors an opportunity for professional legitimacy, which they should pursue.

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Changing supervisor practice using on-line communities of practice

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Abstract

When academic staff who supervise research students are encouraged to de-privatise their research supervision practice by sharing it in communities of practice, they open that practice to critical peer review. This can create an opportunity to move from acquiring knowledge about supervision, to improving one's practice of research supervision.

For the past twelve months Queensland University of Technology has been making use of an on-line moderated discussion to create communities of practice in which research supervisors share their practice and comment on each other's practice. The early responses indicate that when participants engage in conversations with each other and the moderator about elements of their supervision practice they are affirmed and encouraged to continue in this or other forms of reflective practice about their supervision.

Context

There has been considerable discussion about Supervision of Higher Degree Research in the Australian Higher Education literature for the past twenty years. Within this discussion, several professional development initiatives aimed at improving the quality of supervision have been a response to Federal Government intervention in the field. The creation of several new universities as a result of the abolition of the binary system of higher education at the end of the 80's generated a need in universities for professional development in supervising higher degree research. College academic staff who had not previously supervised research were, under the auspices of a university, suddenly expected to supervise research students (Johnston, 1999). Similarly Kemp's (1999) federal intervention into funding formulas for higher degree research, essentially providing funding only on the completion of the degree, brought about a second wave of demand for professional development in research supervision. Nelson's (2002) federal intervention reinforced the earlier demand for professional development for research supervisors and added to the agenda demands for higher degree research training for research students.

When universities began offering professional development programs for research supervisors they initially delivered them in a face-to-face mode (Zuber-Skerritt, 1994; Conrad, 1996). Several hardcopy resources (for example Tracking Postgraduate Supervision, Edwards, Aspland, O'Leary, Ryan, Southey and Timms, 1995) were also developed at this time. More recently, educational development in Higher Education have enabled the emergence of a range of web based resources and on-line programs for research supervisor professional development. One such program was fIRST (ATN Universities, 2002) which used a number of on-line activities to help research supervisors improve their research supervision practices. Another was a web-based resource Journeying Postgraduate Supervision (Aspland, Hill and Chapman, 2002) which used research supervisors stories to make research supervisor practices explicit and linked these practices to the appropriate higher degree research literature.

Within the literature on professional development for research supervisors there has been some discussion (for example Pearson and Brew, 2002) on the value of research supervisors sharing their experiences with each other. This concept

has also been mentioned in general management literature under the label of 'Communities of Practice' (Wenger and Snyder, 2000) and has been described as the cutting edge of professional practice improvement.

Supervisor Solutions, on which this paper is based, is like fIRST in that it encourages engagement from research supervisors to explore the nature of their research supervision within a community of practice, and it draws on the Journeying Postgraduate Supervision (Aspland, Hill and Chapman, 2002) approach in valuing research supervisors' explicit experiences.

Communities of Practice are, as the phrase suggests, a gathering of practitioners with intent to share practice. They create an opportunity for practitioners (in the case of this article – research supervisors) to share their experiences of being practitioners. This initially helps to articulate the nature of that practice and make explicit what is often tacit. It also helps a practitioner to become self-aware, a first step to reflecting on the practice, and encourages critical reflection of practice by situating reflection in the practitioner's own experiences (Pearson and Brew, 2002) using this as a basis for quality improvement. This, as Manathunga (2005) suggests, opens up the private space of research practice and avoids the resentment which she suggests is associated with many university professional programs that encourage exploration of practice, by valuing the practitioner 'values …and builds upon prior knowledge and understandings'. This is in keeping with Wenger and Snyder (2000) who suggest that the move from personal or private practice, through articulation of practice towards shared practice within the community is a starting point for de-privatising the practice, and Denning (2004) who advocates the value of using real practitioner experiences as a resource for others.

On-line communities of practice have been a natural progression from face-to-face communities, and are often linked to on-line professional development programs.

An on-line Post Graduate Research Supervision development program

QUT was part of the consortium of Australian and New Zealand universities that developed fIRST.

Journeying Postgraduate Supervision (Aspland, Hill and Chapman, 2002) was developed with the assistance of a QUT Teaching and Learning grant. This project solicited stories of best practice research supervision and presented them in web format to facilitate multiple pathways through the material, and linked the accounts to (then) current literature about research supervision. While it had stand alone value as a web based resource it was also used within an on-line Post Graduate Diploma (in Higher Education) subject on research supervision in which participants, academic staff, subsequently developed practitioner research into their own research supervision practices. The resource and the on-line program rested on the understanding that when supervisors are given the opportunity to talk with each other about the dilemmas of their practice, this creates a rich learning environment and one in which change and improvement are more likely (Edwards, Aspland, O'Leary, Ryan, Southey, and Timms, 1995; Aspland, Hill and Chapman, 2002; Brew and Peseta, 2004).

A second on-line professional development program, Supervisor Solutions, developed through QUT's Office of Research and Research Training was similarly based on the value of research supervisor's community of practice. Its philosophical position was that good supervision practice, and hence timely research completion, relied on continuing supervisor skill development and supervisor reflective practice (Schon, 1983). It was designed as a generic research supervision resource that would enable research supervisors to tap

into a wealth of information about a range of issues associated with higher degree research supervision and to also be an interactive on-line professional development program, providing a platform for professional conversations around a range of research supervision topics

The aims of Supervisor Solutions are:

- To assist research supervisors by offering:
- Self-paced reflective modules on various aspects of supervision practice, including tools, ideas, workshop formats, online activities
- Information on QUT policies, procedures and forms
- Information on how to find help for students
- Readings and links on supervision practice
- Opportunities to discuss aspects of your supervisory practice with colleagues.

(Supervisor Solutions, http://www.research.qut.edu.au/restdncen/, December 2005)

The program is offered via a web page with eleven portals to the topics that make up the program's curriculum.

- How to use the site.
- What is Good Supervision?
- A Perfect Match (The Supervision relationship)
- Face-to-Face (Managing conflict)
- The Write Stuff
- A Guide to Etiquette
- Cracking the Whip (Motivating students)
- Approval ratings
- Connections (career support for students)
- The Big Picture
- Cross Border Experience (working with NESB students)

In each of the topics there are a range of resources as well as activities to enable a research supervisor to reflect on their supervision practice with the assistance of published research about supervision. Each module also has a platform to support participant engagement. This is presented in the form of a catalyst question that invites the program participant to make a comment based on their own experience.

For example the conversation starter for the module on 'Cracking the Whip (Motivation)' is *What are your indicators that a student is not progressing and what are your resolving strategies?*

Community of Practice

Supervisor Solutions participants respond to the catalyst question.

For example: A participant made the following comment in response to the question: *What are your indicators that a student is not progressing and what are your resolving strategies?*

Most students I work with do not feel confident about their capacity to handle the writing part of the thesis and procrastination can be pronounced. A useful way through this and a good way of dealing with any emerging block to the writing has been through seminar presentations. This verbal sharing of the

work, and its contextualisations and findings, give confidence and very much helps in making this information more consciously available to the student.

It can still be a struggle but the feedback provided by an audience in the form of questions and observations is very useful in breaking through any corrosive isolation and associated loss of confidence. The students always make contact with the huge range of information that they have accumulated but not consciously claimed.

Participants' contributions to the catalyst question are reviewed by a program moderator. The moderator's role is to manage the range of conversations that appear within the on-line program which includes reading and responding to them. The moderator also vets contributions to ensure that they support the conversation etiquette and show respect for each other's experiences. This is an important feature of a community of practice. When the moderator comments on a contribution, this establishes a peer dialogue between the participant and the moderator.

The moderator response to the earlier example was:

I agree. I find that when we shift a student from writing focussed expression to an oral focussed expression this often releases the creativity and can help them discover ways of expressing something that was not emerging in their writing. I also think it is a good idea to audio record these presentations so that they can make use of their spontaneous explanations and answers and eventually turn these into the written form.

Participants are encouraged to read and comment on each others contributions thus generating a conversation and a community of practice around the particular conversation or the range of conversations related to the catalyst question. As has been suggested by Brew and Peseta (2004) these descriptions of practice acted as a catalyst for other supervisors (readers) to reflect on their experiences.

For example: A Second participant commented on the dialogue represented in the previous example.

I think the key to maintaining motivation and avoiding the perfectionism factors is to demonstrate to the student that the thesis, creative practice and exegesis is manageable if it is broken down into smaller chunks and then that way there is a sense of achievement along the way. (Reference to other participant who had made the contribution in the earlier example) signalled this when he talked about presentations along the way - a sense of achievement. I went to a presentation at the beginning of my PhD journey and something the speaker said has stuck me with. He talked about the thesis being like 6-7 5000 word articles. Once he said that I realised that I write almost this in refereed journal, conference presentations and 'trade' journals in a year anyway. The PhD suddenly seemed manageable. This maintains motivation. The other think I constantly have to remember is that I do not have to be the external motivator for the student. The motivation must be intrinsic.

The moderators comment for that contribution was:

Two interesting perceptions that can help unblock a student from the enormity of the writing task and help them to see it in terms of small tasks. The Portfolio Thesis is a real advantage in recognising the link between refereed articles and a thesis text. Gerry Mullins and Margaret Kiley(2002) have written about thesis examination under the title of 'It's a PhD not the Nobel Prize' and this reinforces that we need to keep in perspective what is being expected of thesis students, both from the point of view of examiner and of supervisor.

While it is acknowledged that different faculties may have different traditions associated with their higher degree research, Supervisor Solutions endeavours to foster a common tradition of reflective practice.

First reflections

The moderated version of Supervisor Solutions has only been in operation for twelve months. During that time five cohorts of participants have undertaken the program. The first two programs offered exactly the same set of modules over varying time spans. The third, fourth and fifth programs offered a different mix of modules each over a five-week period. The third, fourth and fifth programs attracted new participants undertaking the moderated program for the first time as well as previous participants, undertaking additional modules in the program.

Over this short time span salient features of this type of professional development program began to emerge:

- The program and the resource attracted different types of participant engagement
- It became evident that reflective practice, on which the program is based, was a concept and practice that need to be promoted rather than assumed.
- There is an on-line pedagogy that works to encourages engagement and de-privatisation of practice.

Different types of engagement in this on-line program

The moderated program and the electronic resource are one in the same in that they operate out of the same web site base. The difference between participants using the site as a resource and using it as part of a professional development program is that the later enrol for the moderate version of the program and undertake to complete several modules over a designated period.

Different participants have engaged with this particular on-line program/resource in different ways.

1. Participants use the site as a resource. They may do this without registering for a moderated program and their use of the site may only be evident in the feedback portal that the site provides. Because the site is regularly updated, and the curriculum regularly reviewed, the site acts as a viable one-stop-shop for supervisors seeking resources and research to improve their supervision practice and to solve day-to-day problems they experience as research supervisors.
2. Participants use the site to reflect on their own practice. Most of these participants are recognised in that they register for the moderated iterations of the on-line program, and, while they may not complete the requirements to help them attain accreditation recognition for the professional development time spent, they still benefit from the opportunity to have a professional dialogue with someone else (the moderator) commenting on their descriptions of their practice.
3. When participants begin to comment on each other's practice, and to provide insights and support for each other through on-line conversation, they experience the benefits of de-privatising practice that are available through a community of practice (Wenger and Snyder, 2000).

The different levels of engagement reflect the different agendas and learning styles of participants in this type of program. For some participants, discovering the site and the resources to which it provides links meets the immediate day-

to-day supervision needs for solving in practice problems. The site can provide a one-stop-shop for academic staff exploring a range of real problems within supervision. For some participants, the opportunity to engage with other practitioners is the attraction, and hence they opt more for the moderated program offered through the site.

Practitioner exchange of practice is where this type of resource becomes most useful. It combines the knowledge about the specific practice with the personal experiences related to that knowledge. When practitioners are encouraged to talk about their practice, their tacit knowledge is brought to the forefront, and there is an opportunity to make it explicit. Many research supervisors have an amount of tacit knowledge most of which is developed through their own experiences of being supervised. Explicit knowledge is more formal codified knowledge conveyed from one person to another in systematic ways such as, documents, images and other deliberate communication processes. In making the tacit knowledge explicit it enables that knowledge and the practices the knowledge reflects, to be examined, improved or shared (Nonaka & Takeuchi, 1995). With encouragement for the development of Communities of Practice (Wenger and Snyder, 2000), professionals can also experience a second transition from knowledge to meaning as they see how different practitioners apply the available knowledge to their specific situations.

Drawing on experiential knowledge can also tap organisational knowledge. When employees are asked to talk about their professional practice, practitioner patterns become more evident (Denning, 2004) and thus there can be a contrast between the literature and the ways in which people apply that literature in their personal practice.

When practitioners are asked to talk about their practice, this act of moving it from personal practice to publicly explicit practice acts to de-privatise the practice. This creates opportunities to update or correct practice. Because supervision practice has essentially been learned in an osmotic way in the research supervisor's previous experiences of being supervised, there is a chance that their knowledge is outdated or even incorrect. This can be very much the case with the changing set of agendas influencing higher degree research, particularly with regard to completion targets and funding.

Promoting reflective practice

The research supervision practice for many research supervisors is based on their own experience of being a student. These experiences are often un-tested. Reflective practice enables a supervisor to make their practice explicit and expose that to critical reflection.

Despite reflective practice being encouraged in a range of university undergraduate courses, and also encouraged in supervision literature (Pearson and Brew, 2002), it is not necessarily a universally practiced professional development tool. Introducing simple suggestions (such as the role of experiential knowledge in supervisory practice) can raise a range of important issues related to improvement in supervisory practice. It can sometimes lead to moments of realisation that the way a person is currently supervising is exactly the way they disliked being supervised when they were in the role of the doctoral student. Introducing literature and contemporary research can act as catalysts to practice improvement.

The apparent lack of reflective practice for research supervisors could stem from many of the time management issues that affect the delivery of research supervision practice. When there appears to be insufficient time to even meet with students, let alone to read their work, there appears even less time to be able to reflect on the ways in which that practice has been undertaken.

Providing a vehicle by which that reflection can take place, in some ways puts a priority flag on the importance of this work, not only for research supervision, but for any professional practice.

The early responses to this program have indicated that when participants engage in conversations with each other and the moderator about elements of their supervision practice they are affirmed and encouraged to continue in this or other forms of reflective practice about their supervision. This can extend to areas such as the match between their concepts of research and their practice of supervising that research. This can lead to them critically evaluating their own practice.

Pedagogy that enhances a Community of Practice.

It is one thing to recommend reflective practice; it is another to facilitate processes whereby practitioners share their practice and begin to comment on each other's practice. In the same way that teaching in research supervision is often overlooked, so the pedagogy in facilitating practitioners to share their practice is also often overlooked.

The increasing use of on-line discussions for a range of university subjects has emphasised the importance of discussing electronic pedagogy. In the case of this on-line program that specifically has meant:

- acknowledging the technology abilities and potential technology phobias
- affirming practice
- encouraging critical reflection

Acknowledging the varying technology abilities of participants.

My moderation of the program has made me aware of the variety of levels of technology ability of the program participants. Despite having access to up to date technology, participants in the program vary in their ability to engage in an on-line program. For some they require step-by-step instructions on how to access various elements in the program. Sometimes this may even mean telephone support while they begin to work their way through the program. At the other extreme are academics who are in their element with technology and who have themselves developed sophisticated on-line resources and portfolios. Their view of the program may often be that it lacks the appropriate technology edges to enable them to work in this particular medium. The moderate pedagogy needs to fall somewhere between these two extremes. Being mindful of some of the sophisticated ways that an on-line program can be run and at the same time not making it out of reach of those technologically challenged. This will sometimes mean different types of communications with different participants, and regular reminders of how to seek assistance.

Affirming practice

The act of de-privatising one's practice is challenging. The challenge is made more so if, having shared the practice you are then criticised for not doing something (the deficit model). Adopting an alternate pedagogy of affirming the practice sets up a trust relationship from which you can then encourage critical reflection of the shared practice. I call this the 'Yes' approach. Where at all possible I will affirm the practice that has been shared because in that affirmation I am also affirming that it is good to share practice.

"I agree". (From excerpts of the conversation)

There is a dilemma in this approach in that there may be instances where the described practice is at odds with contemporary literature about that practice.

The practice of supervision, at least as it is told by students being supervised, is filled with both 'bad' and 'wrong' supervision practice (Hill, 2002).

Then the 'Yes' approach is tempered with the 'Yes, and…" approach.

> I agree. I find that when we shift a student from writing focussed expression to an oral focussed expression this often releases the creativity and can help them discover ways of expressing something that was not emerging in their writing. (excerpts from conversation)

The additional comments can be either in a restatement of the offered practice, adding some terms that may help to link the stated practice to other literature, or adding a new idea to the idea already offered.

I also think it is a good idea to audio record these presentations so that they can make use of their spontaneous explanations and answers and eventually turn these into the written form. (excerpts from conversation)

The pedagogy of affirming practice rests on an assumption that that critique can come in time and by affirming a person's practice you encourage them to continue sharing practice and exposing themselves to the various agenda's which will help them to critique their own practice.

Encouraging critical reflection

Having encouraged people to share practice, the next step is to expose them to literature or to other practitioners with different views so that they begin to rethink their practice. This moves them towards critical reflection of the practice.

> Two interesting perceptions that can help unblock a student from the enormity of the writing task and help them to see it in terms of small tasks. The Portfolio Thesis is a real advantage in recognising the link between refereed articles and a thesis text. Gerry Mullins and Margaret Kiley (2002) have written about thesis examination under the title of 'It's a PhD not the Nobel Prize' and this reinforces that we need to keep in perspective what is being expected of thesis students, both from the point of view of examiner and of supervisor. (excerpts from conversation)

Where to from here?

With only five iterations of the program so far undertaken, and only a few participants exposed to all the modules available on the site, these are early days with this particular professional development program. The early indicators from those people who enjoy the engagement with the site are that this type of program provides an important mode of learning within a suite of professional development programs. It particularly suits the time poor who are unable to allocate blocks of time for face-to-face programs.

As the program is offered in re-iterations, those participant who re-enrol act as an indicator for the use of this program in professional development over a longer term.

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Building momentum in an online doctoral studies community

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Abstract

Doctoral programs have been evolving over recent years. One factor in that evolution has been the growing number of students seeking access to advanced study while continuing in full-time employment. Recent developments in distance and online education support the offering of doctoral programs at a distance but entail additional challenges around the initiation of distance students into the wider academic community in ways equivalent to those available to traditional on-campus students. One possible response is the development of online communities that support equivalent interactions to what might be experienced in an on-campus doctoral program. This paper describes the beginnings of such a community and the early efforts to initiate and maintain momentum.

Keywords: online community, doctoral program, open source

Program background

During its relatively short history, the University of Southern Queensland (USQ) has developed a strong reputation for distance, and more recently online, education. Its performance in those fields has been recognised by national and international awards. Of its 2004 enrolment of over 25 000 students, all but about 5 000 studied at a distance and 5 000 were located outside Australia. Over 1000 students were enrolled in programs offered entirely online.

When the USQ Faculty of Education introduced its Doctor of Education program, commencing in 1996, its history of distance education encouraged it to offer the doctorate by distance. This was considered to be an appropriate response to the emerging needs of professional educators for access to further education while continuing to work. The opportunity to study for, and complete, a doctorate without relocating has proved popular with students. The first graduate from the EdD program completed in 2002 and there have been graduates each semester since. However, there have also been withdrawals from the program and delays in the progress of other students. Although the program has enjoyed a measure of success, it appears that there is scope to better meet the needs of some students.

Of approximately 70 students enrolled in doctoral programs (EdD and PhD) within the Faculty of Education in 2004, fewer than 10 were full-time on-campus. The majority of doctoral students were studying while working in locations as diverse as Brunei, Canada, Dubai, Japan, Malaysia, New Zealand, Singapore and Thailand. Most of the communication between faculty members and doctoral students is accomplished using email, supplemented by teleconferences for special events, such as when students are required to make synchronous presentations of their work. On-campus attendance at key points in the program is encouraged and many students do come on campus for periods varying from a few days to several months and at frequencies varying from not at all to two or three times each year.

From its inception, the EdD program included a 4 to 5 day residential school scheduled to coincide with the beginning of the program for each cohort. Students were encouraged to attend the school at least once during their enrolment in the program, preferably at the commencement. Many students,

especially those living relatively close to the USQ campus, returned to the school on second and subsequent occasions. The residential schools included sessions related to particular courses and a variety of other sessions intended to build skills for graduate study and a sense of belonging among students. More recently, as the proportion of international students has increased, attendance at the residential schools has been voluntary in recognition of the substantial costs that would be incurred by students attending. Students unable to join the group on campus have been linked in by teleconference for specific sessions.

Since the Doctor of Education program was introduced, there have been efforts to promote the use of computer-mediated communication (CMC). Individual courses offered in the program have always had access to CMC tools, although the specific tools have varied, including listservs, newsgroups and WebCT course spaces. The first residential school included sessions in which students were introduced to the use of an email list that had been established to promote interaction among faculty members and students. Subsequent residential schools have included sessions introducing the CMC tools current at the time. Despite the ready availability of these tools, individual email between students and faculty members has remained the most consistent form of computer-mediated communication used within the EdD program.

Although there has been no systematic collection and analysis of data related to CMC use, observation and anecdotal evidence suggest that most students and faculty members in the EdD program were inexperienced with the relevant CMC tools and lacked confidence in the ability to overcome any technical difficulty without support. Many of the EdD courses are designed to support students working with an advisor in their own specific area of interest. Thus there is little or no requirement for group interaction. That and the limited CMC capacities of students and faculty members probably contributed to the preference for using relatively familiar tools such as direct email.

During 1999 and 2000, there were trials in which students and faculty members in selected courses were provided with webcams and opportunities to participate in low bandwidth videoconferencing using iVisit software. As with text-based CMC, lack of confidence with the technology limited its use except by one or two enthusiasts. When the faculty member who had promoted the technique moved to another university its use quickly declined.

In 2004, the annual EdD residential school was substituted by an online conference held over a two-week period. The conference was mounted within BlackBoard, an environment that was familiar to some faculty members and students but a new experience for others. The conference included online "presentations" offered by faculty members about topics such as particular research methods, supported by topic discussion areas in which students could ask questions and share their experience. Despite the unfamiliarity of the environment for many participants, the majority of students and faculty members responded very positively to the online conference experience.

Doctoral studies and community

Approaches to doctoral education vary. PhD programs in Australia, including at USQ, are typically based on the British model in which the degree is undertaken entirely by research with the guidance of at least one supervisor. Students are expected to have any necessary background in content and methodology at the time of enrolment or be capable of learning what is necessary without the benefit of coursework. Where there is a group of students studying related topics with the same supervisor or colleagues, they typically provide each other with some degree of mutual support in what might be described as a community of practice (Lave & Wenger, 1991). However, it is possible for a student in such a doctoral program to be isolated from peers.

The EdD program at USQ has been structured such that the first third, equivalent to a year of full-time study, comprises course work and the remaining two-thirds of the program is undertaken as a research project under conditions generally similar to the PhD. In that respect it bears some similarity to a North American doctoral program. However, because the program is designed to be undertaken part-time at a distance by students continuing to practise in their profession, even though students are taking the same courses, their opportunities for face-to-face interaction are limited or, sometimes, non-existent. In this respect it is quite different from an on-campus experience in which students attend classes together, share workspace and facilities, work together in teams for teaching and research, and regularly engage in some joint social activity. Interaction among distance students working on their own research projects is unlikely to arise spontaneously and would need to be planned for and supported.

If the process of doctoral education were viewed as one of guiding individual students through a process by which they develop a capacity for independent research then the value of interaction among students might be questioned. However, in a broader view, communities built around the ideas of an academic discipline are the building blocks of doctoral education and initiation into the relevant community is the core outcome of the process (Upham, 2003). Traditional on-campus doctoral programs offer students frequent opportunities to engage with each other and faculty members in contexts such as research projects, teaching and social activities. Each of these opportunities contributes to the building of the academic community and may create links that persist into professional interaction beyond graduation.

Changes in doctoral education in Australia have been noted over the past decade. Pearson (1999) noted the rapid increase in numbers of students associated with increasing diversity in the population and the need for more flexible study arrangements arising from continuing commitments by more mature students to family and employment. These trends run counter to the traditional assumption of on-campus, full-time study with opportunities for socialization into the academic community through formal and informal interaction with supervisor(s), other academics and peers.

The importance of appropriate induction and support for doctoral students has been acknowledged (Asmar & Peseta, 2001; Neumann, 2003). Despite prior successful experience of university study, doctoral study is a new, and sometimes confusing, experience. Asmar and Peseta draw parallels between school leavers entering their first undergraduate program at university and graduates entering a doctoral program. They found that, of 9000 graduate students at the University of Sydney in 2000, only 50% "felt part of a group of staff and students committed to learning" and argued that there is a "demonstrated need for enhanced academic and personal interactions among graduate … students" which should be provided in a systematic way.

The EdD program at USQ presents similar challenges to those identified at other Australian universities (Pearson, 1999; Asmar & Peseta, 2001). In its first years, it attracted mostly Australian students who, although many lived interstate, were familiar with the processes and language of Australian universities, able to contact the university relatively easily by telephone, and reasonably likely to be able to attend the annual residential school. In recent years, the proportion of students in other countries has increased. They are frequently unfamiliar with Australian university terminology and processes, find telephone communication difficult because of the need to make international calls and synchronize across multiple time zones, and may be prevented by distance and cost from attending a residential school. Moreover, some face the additional challenge of having to work in their second or subsequent language.

Induction into an academic community is an important element of doctoral education that is becoming more difficult to manage as the student population changes to include more part-time and distance students with significant responsibilities in addition to their studies. Because the traditional approaches to such induction are no longer sufficient in the changing environment, new approaches must be sought. Asmar and Peseta (2001) describe some practices that have been introduced, including the use of websites and mailing lists.

The challenges outlined above were recognized in a recent national report on doctoral education in Australia (McWilliam et al., 2002). Among its recommendations were that flexible teaching be used as "an opportunity to maximise networking, and to introduce participants to senior / international peers and/or researchers" and that universities "further develop and maintain online resources and communication technologies in support of participants who are work-based."

USQ has built its reputation as a distance education university on the basis that the educational outcomes of its programs should not be differentiated according to mode of study. If this is to be true for doctoral graduates then it is important that distance students are initiated into the relevant academic community as effectively as those who are able to study on-campus. That will require that we provide them with opportunities to interact with other members of the academic community in ways that are equivalent to those available on campus. The use of online environments appears to offer the best available approach to supporting appropriate interactions of students with supervisors, other academics and peers.

Online communities supporting learning

The design of online tools and environments to support communities for learning has attracted considerable research interest over the past decade. Nevertheless, Barab et al. (2004) comment that few studies offer clear criteria for what is meant by community and there is little known about the educational value of community support for learning.

Riel and Polin (2004) describe three "distinct but overlapping types of learning communities: task-based, practice-based, and knowledge based" (p 19). Task-based learning communities are assembled around an issue or problem, often in the context of a class, and typically last only as long as is necessary to produce an appropriate product or outcome. Practice-based learning communities arise voluntarily around a profession or field of interest and focus on the continued improvement of practices. Knowledge-based learning communities seek to advance collective knowledge and to represent it in a form that supports its use in further knowledge building. Riel and Polin go on to describe a "learning organization" as being formed in the intersection of task-, practice-, and knowledge-based communities (p 40) and provide as an example a graduate studies community which has been developed at Pepperdine University.

In their discussion of virtual learning communities, Swan and Shea (2005) identify asynchronous discussions as a key feature and draw on theories that have informed studies in that area, including social learning theories and the concept of immediacy, which describes behaviours that reduce psychological distance between participants in traditional classrooms. Social presence has been advanced as an equivalent concept in online environments. They describe several studies that have demonstrated the impact of social presence on the development of a sense of community and suggest ways in which these findings can inform the development of virtual learning communities.

Online communities have been used successfully to support learners in graduate programs (Ruhleder, 2002; Riel & Polin, 2004) but the individualised nature of doctoral programs, especially in the project phase, and the wide distribution of students in the EdD program may introduce different challenges for the design and support of an online environment for that community. A doctoral studies community would need to exhibit the characteristics of a "learning organization" with elements of task-, practice- and knowledge-based communities (Riel & Polin, 2004). However, it is difficult to predict which particular "technological affordances" (Swan & Shea, 2005) might be of most value in such a community.

Schwen and Hara (2004) discuss the application of research on communities of practice to the design of online environments. They distinguish between descriptive theory as in the original work by Lave and Wenger (1991) and prescriptive theory. The former is useful for understanding a phenomenon but may not be a useful design guide. The latter is useful as a design guide but may not provide a complete understanding of what is designed. Ultimately they express reservations about attempts to design a community of practice according to a formula and propose a more evolutionary approach to development.

Barab et al. (2002) have approached the development of an online teacher community as an exercise in design-based research (Design-Based Research Collective, 2003; Bannan-Ritland, 2003). Such an approach seems appropriate to the development of an online community for a doctoral studies program. Hence a reasonable approach to the project is to begin with a system that offers basic facilities for members to share content and discussion and to adapt the system as needs and patterns of use evolve. The application of design-based research approaches should support both evolutionary improvements in the system and developing understanding of how and why various elements contribute to its usefulness.

Clues about features that might be valued in an online doctoral community space are available in feedback from participants in the 2004 online doctoral studies conference and from discussion with students about facilities they might find helpful. Suggestions for inclusion include links to resources and documentation relevant to the doctoral program, directories to facilitate access to other students and supervisors, discussion spaces for general use and more focused private conversations, and access to dissertations and other work produced by graduates of the program. These ideas appear to provide a sufficient basis for initial development of a space that would evolve according to the needs of its users.

Evolving software for online community building

Until 2004 most fully online courses offered at USQ have used the Blackboard CMS. From 2005 online courses are being offered using WebCT Vista. Both Blackboard and WebCT offer many of the facilities, including content management and discussion areas that would be expected to form the basis for development of an online community. However, in each case the implementation is based on courses rather than a complete program and is

geared towards presentation and discussion rather than more open community interaction. Although it would be possible to create spaces outside of the course structure to facilitate longer term interaction, that would necessitate changes to the routine operation of the system.

If the project is to be approached as a genuine design-based process then the software on which it is built will need to offer both a range of base facilities and the opportunity for adding or adapting facilities in response to understandings that develop as the project proceeds. Open source software with a modular design appears to provide the most appropriate starting point for development. Several open source content management packages with modular structures, including Drupal (http://www.drupal.org), Plone (http://plone.org/), Postnuke (http://www.postnuke.com/), and TikiWiki (http://www.tkiiwiki.org), were investigated through visits to sample installations, review of system documentation and test installations on a desktop system where applicable.

Drupal was selected for the initial development of the current project. It appears to be a reasonably mature system (currently at version 4.6) with an active and supportive user community. In addition to the base system, which is under active development, there is a substantial collection of modules that have been developed and contributed by the user community. These are easily added to the base system and configured to provide additional features. Thus a base system can be configured and introduced to the users, with additional features being added by activation or installation of additional modules as use of the system evolves.

Early in 2005, a base Drupal 4.5 system was installed on a server. Some additional (contributed) modules were installed and a template was configured to include colours and other elements consistent with, but not identical to, the Faculty web site from which it would be eventually linked. The site name was abbreviated to DocsCom (Doctoral Studies Community) for use in the URL. Simple content, comprising a welcome message, introductory forum topics, example personal blog entry and sample aggregated content from relevant RSS feeds was added. Figure 1 shows the general appearance of the front page in a trial version of the site.

In order to facilitate access to the online space while restricting initial membership to students and supervisors, the membership database was populated from relevant lists and set up so that members would be able to obtain a password by email on their first access. In the first week of April 2005, a FileMaker Pro database was used to launch the site by sending individualized email messages to the 80 students and 20 supervisors then active in the doctoral program. The email message included a brief explanation of the purpose of the site together with the relevant URL and instructions for obtaining a password from the system.

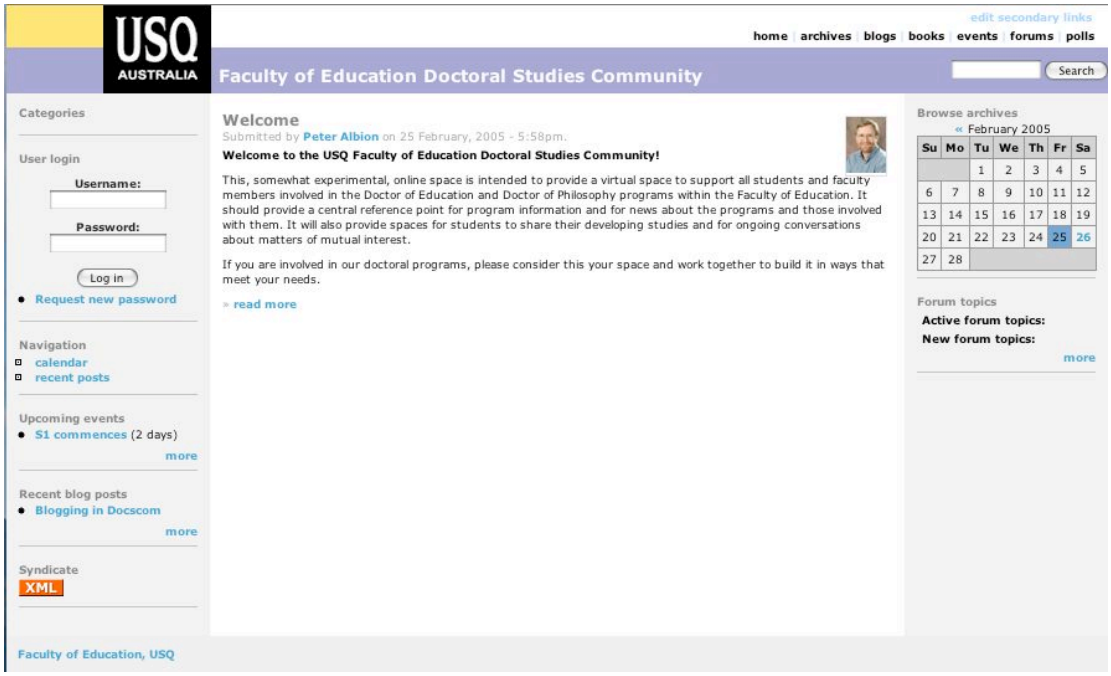

Figure 1: Welcome page in DocsCom trial version

Within the first three days after the launch, 40 of the approximately 100 listed members had accessed the site at least once and that number grew to 52 within 3 weeks. In addition to several email messages requesting assistance with accessing the site, 15 email messages expressing some degree of appreciation for the site were received within the first 3 days after the launch. The following excerpts suggest the potential that students perceived in the site:

Thank you so much for your email - it was very timely. I was just thinking this morning that it would be superb to be able to discuss some of the issues of motivation, doubt, technical and methodological issues that I am facing, and being miserable because there was no other PhD students that I know here in [another country]! So—thank you; I'm looking forward to seeing how everything evolves

(Student A)

It should be a wonderful resource and facility. I must admit I feel somewhat isolated at times. There is only so much you can expect from a supervisor, and I don't like to bother others who probably think 'why don't you ask your supervisor?' It will add to the 'collaborative learning process' and improve the 'community of practice' - all worthwhile activities.

(Student B)

Although the 50% of potential users who accessed the site appeared to see value in it, just two posted content that initiated potential conversations. One student initiated a thread in an open discussion forum and the other posted 4 entries in a personal blog space. Ten users posted a total of 18 comments among them. Of these 12 were responses to messages posted in the discussion forum, 8 to the 3 seed messages posted as examples and the remaining 4 to the thread initiated by a student. Most of these comments attested to the isolation experienced by doctoral students at a distance and the potential that the writers saw in the development of an online space in which they might find support. The remaining 6 comments comprised 1 response by a staff member to the welcome message and 5 responses in a thread initiated in a blog posting about a software tool that one student had found useful.

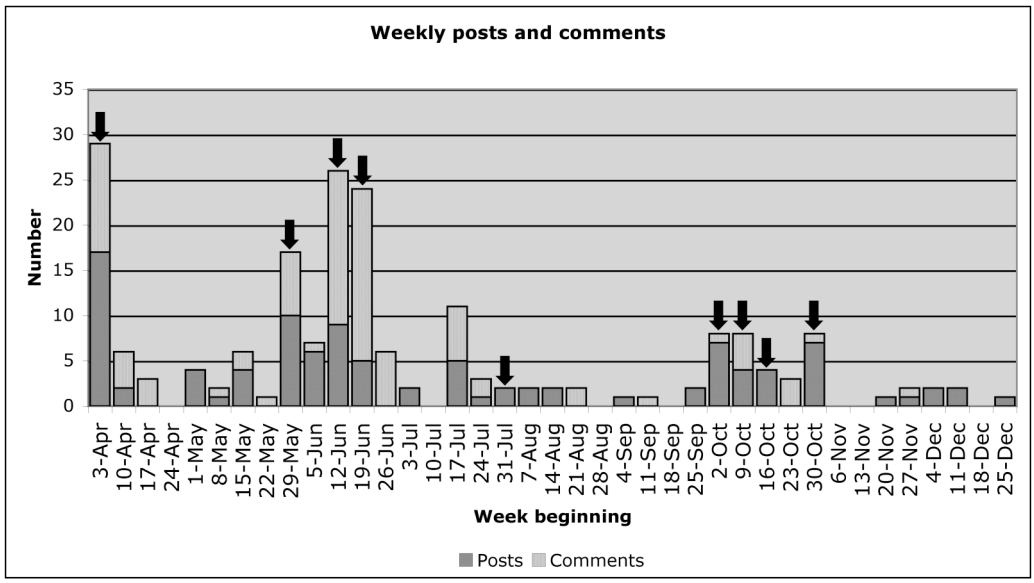

Figure 2: Distribution of original posts and comments by week

This initial burst of activity diminished rapidly. By three weeks after the launch, system logs indicated that there were no more than three or four regular visitors to the site. Activity through the remainder of the year was unevenly distributed and mostly in response to various interventions. Figure 2 represents the distribution of original posts and comments through the year with arrows marking weeks in which the system was used to send email messages to each member advising of some activity or new content in the site. Such messages typically attracted a small surge of visits to the site and accompanying contributions. The peak of activity in June was associated with students in one of the EdD courses using the site to present and discuss work from the first semester.

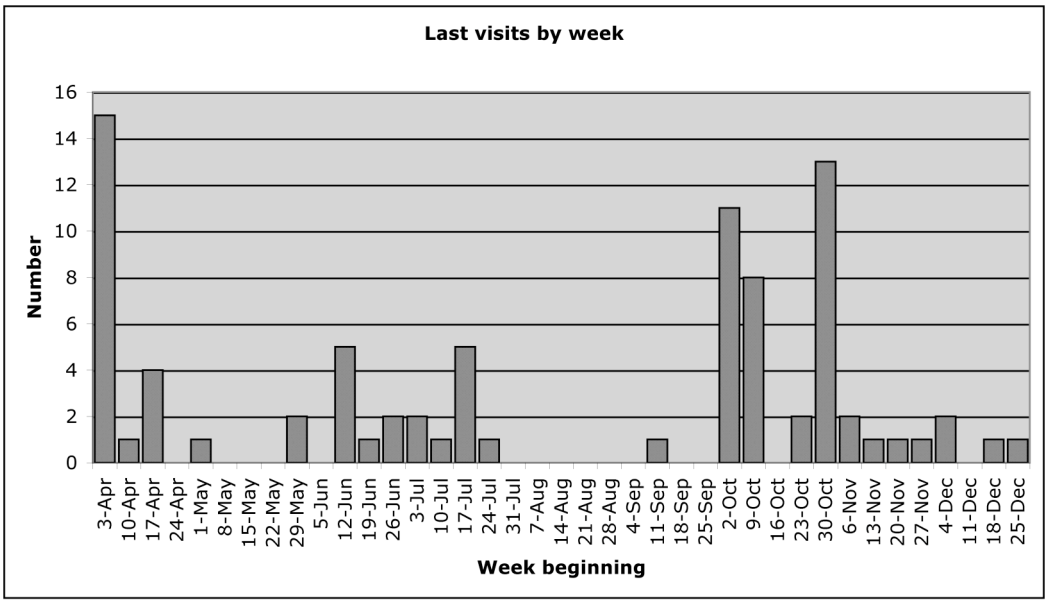

Figure 3: Users recording last visit to site for 2005 by week

For reasons of economy in storage, system logs were set not to retain records of all visits by members across the year. However, individual member records did include the date of the most recent visit. These data have been summarised in Figure 3. Twenty-one of the 100 members initially seeded in the system

visited at least once but ceased access within the first month. A further 19 ceased access after the mid-year EdD course discussion activity. Most of the remainder continued accessing the site until the end of the academic year after which time there were no general messages sent.

The initial response following the launch indicated that many members of the program saw potential in the site. That response encouraged hope that participants might be active enough to generate self-sustaining activity. To date that has not happened and activity by most members has been in response to broadcast messages. At the same time, informal feedback from students has confirmed that some of them do feel a need for more collegial interaction. Given the geographical distribution of the students, it seems that some form of online community may be the most effective way to provide for interaction. However, the design and operation of such a site presents some challenges.

The next phase in evolution of the site will seek to build both the content and associated activity in ways that will enable users to realize its potential. Various approaches to building and maintaining momentum are being considered. Systematic addition of content to develop a "one stop shop" for students seeking information relevant to the doctoral programs will provide all students with reasons to visit the site at least occasionally and especially at key points in their program. Online events such as discussion of student work and hosting of guests with particular expertise will provide further attractions for student involvement. The system is capable of generating RSS feeds to which members can subscribe rather than having to visit the site frequently to avoid missing special events. Members will need to be educated in the use of newer technologies such as RSS and, until that process effects the relevant change in patterns of use, periodic email messages will be used to alert members to significant additions to the site or special events.

Conclusion

The need to provide doctoral students with opportunities to develop continuing links to the wider academic community seems clear. Where students are prevented, by distance and personal commitments, from participating in a traditional on-campus academic community, online environments appear to offer appropriate opportunities for interaction. Based on the limited experience to date, it seems clear that many students recognize the potential of an online community space to meet their needs for information and interaction. However, the details of how such a community space should be configured and how activity in the space can best be supported remain to be discovered. The capacity of open source software systems to evolve makes them an especially suitable environment in which to explore the possibilities of building online spaces that add value for their members and simultaneously add to our understanding of how such environments can support mutual learning.

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Knowledge creation and research training: Meeting the academic development needs of postgraduate students and their supervisors in small and new universities

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Abstract

When there is no obvious well-functioning postgraduate school or research community, the research student experience is often reported to be a lonely and isolating one, where students struggle to complete a useful thesis or develop research skills, connections and networks. What we at Victoria University and the University of Ballarat are attempting to do is to facilitate the development of a 'community of practice' for postgraduate research education that will provide an environment in which a productive and growing research culture can be sustained and research skills and knowledge can be developed and shared. In this paper we describe a rationale for, and a description of, some work-in-progress at the two Universities (one small, one new). We finally make brief comment on the experiences of students and supervisors in engaging with our developing 'research community' and suggest possible extensions to the program.

Introduction

Working in a productive research environment, postgraduate students can contribute in a more significant way to the overall research output of an area than if they work alone. Implicit in this notion is that within such an environment there is a network of relationships and responsibilities that provide continuous support and direction to developing researchers. In institutions where there is not a well-developed research culture, it is often difficult to provide these on-going situations that can help guide new students and developing supervisors. The consequences of this can be academic and personal isolation, which in turn can result in: increased drop-out rates; extended completion times; research work of indifferent quality, and; low research output in terms of publication rates and the development of new knowledge. In addition, in some areas there may be only a small number of experienced supervisors and should a supervisor resign or go on study leave, students are left with inadequate direction. Not only does this mean the student is personally disadvantaged, but also the consequent development of research culture within the area can be interrupted, and any attempts at strategising research initiatives become frustrated by this lack of a critical mass of personnel.

The Office for Postgraduate Research (Victoria University) and the Graduate Centre (University of Ballarat) have instituted similar ways of building structured programs designed to: provide a focus for the preparation of new researchers; provide a forum for developing supervisors, and act as a catalyst for the development of a sustainable research culture. We believe that if these aims can be met, even in a modest way, then we should see: an increase in the collegiate interaction between postgraduate students; a more confident

supervision; an increase in the number of successful publications emerging from postgraduate research projects, and; more timely postgraduate completions at both Masters and Doctoral level.

Developing a coherent research training strategy

Although we currently work in a context that is demanding increased attention to issues such as 'timely completions' and the development of 'Core Postgraduate Attributes', what we are proposing here is an approach to supporting research students and their supervisors that does not focus on simply developing skills or providing a 'toolkit' for research activities. Although we do provide traditional workshops in specific areas of literature searching, data collection and analysis, and thesis preparation, our underlying aim is to provide experiences that overtly value the development of knowledge and knowing (an epistemology) and which model and practice the ways in which people act as research scholars (an ontology). These notions partly arise from the concept of 'being' a scholar, researcher or student researcher (Heidegger 1998/1967), and we are trying to apply them in a context of 'coming to know' within a community of practice (Lave and Wenger 1991).

In this respect, Lave and Wenger (1991) argue that much learning, as it normally occurs, is a function of the activity, context and culture in which it happens, and is therefore usefully regarded as being 'situated'. This contrasts with many formal learning activities where knowledge is often taken out of its practical or lived context. They further suggest that social interaction is a critical component of situated learning, and in many situations beginning learners become peripherally involved in a community of practice that displays, in a practical context, understandings and behaviours that characterise a learning community. As the beginner moves, metaphorically, from the periphery of this community towards its centre, they become more engaged with the culture as they gradually become, for example, a recognised research student or supervisor. In essence, they acquire knowledge gradually, and at their own level of need, from frequent interactions with other members of the community in a number of situations during their everyday activities (Brown, Collins & Duguid 1989).

Importantly for us, a principal feature of the process of 'becoming' relates to the way in which knowledge is understood. Whereas in the physical sciences, the epistemological base of research programs has been established for many years, we have a significant cohort of students involve with investigations in the Behavioural and Social Science areas. In a number of useful contributions dealing with the nature of knowledge, (e.g., Gibbons et al. 1994; Grosz 1995; Lave 1993; Schön 1983; Crotty 1999) authors have challenged the veracity of taking a position that considers social knowledge as being based upon an absolute and universal framework (a positivist perspective). Rather, they argue for a more flexible and accommodating position, where social knowledge seen as a product of lived context, allowing for a variety of understandings to be constructed by the participants in a particular community (a constructivist perspective). With this advice in mind, our introductory research training courses provide an opportunity for all students and supervisors, including those in the physical sciences and creative arts, to engage in explicit discussion regarding the epistemological underpinnings of their research programs. We feel that this approach helps students and supervisors come to appreciate, in a more formal manner, the nature of their own knowledge base which is an essential element in helping beginning researchers with their encounters with the research literature, guiding their discussions with research colleagues and for facilitating critical reflection upon their own scholarly practice. Each of these activities provide key opportunities

for research workers in their attempts at knowledge creation, and contribute to the lived practice as research students or supervisors.

In addition, understanding the nature of social knowledge in this way calls into question the conventional notion of knowledge transfer or acquisition, developed mainly from a positivist framework, in which 'authoritative' knowledge is transferred or acquired while remaining unchanged. Whilst such a perspective is clearly essential for the development of the physical sciences, for knowledge creation in social contexts it is suggested that researched knowledge becomes contextualised and transformed, so in essence there can be no 'uncontested body of knowledge.' In this view, it is argued that knowing is not exclusively a cognitive phenomenon, but it is significantly developed, enacted and embodied within practice (Schön, 1983; Lave, 1998; Dall'Alba, 2004).

This view of contextualised and active (ontological) knowing means that we, as scholars and as mentors of supervisors and research students in the social sciences areas, cannot merely transfer a fixed body of knowledge about research to our colleagues. It means that they must work with us to come to know, create and embody aspects of research knowledge that they encounter in a range of ways and to varying extents4. This idea of 'coming to know' as development, enactment and embodiment, means that learning is cannot be confined within the heads of individuals, but rather is concerned with social and practical experiences acting and being research students or research student supervisors. Learning of this kind is obviously far from the simple acquisition of information, and, further, it cannot be simply reduced to a set of skills. As Nigel Blake and colleagues argue (Blake et al. 2000), reducing teaching or learning to 'skills' or 'competencies' overlooks the engagement, commitment and risk entailed in this important enterprise, and therefore does not represent the way that many of us envisage the effective development of supervisors or research students.

We see that a principal means of enhancing ways of students becoming scholars, research students and supervisors is through the notion of 'reflexivity' (Heidegger 1998/1967). In such an approach, when the familiar is questioned and made to seem unfamiliar, we are in a position to critically examine our understanding and practice anew. As facilitators of this process, we are attempting to encourage this critical reflection on practice by asking students a series of simple questions5, then asking them to present answers to a mixed audience that, for this exercise, behaves as our 'community of practice'. We have found that a community such as this stimulates new ideas about research programs, and can provide the student with alternative perspectives on specific elements of their research question. In addition, it provides the candidate with a non-threatening opportunity to develop the language and confidence to discuss spontaneous questions in a group situation, and to reflect upon these new perspectives outside of the sessions. Such a collegiate community approach models wider research community

[4] For example as research students work to develop a candidature proposal, they are given written regulations and specifications from the University. However, as they work toward the preparation of the proposal, they talk with their supervisor/s about what might be included and explore the literature around their research question. At the same time, in our sessions they hear discussions about what knowledge and research 'are', and what the task of researching in their field involves. For some, this notion of the meaning of knowledge becomes part of the development of the argument in the Candidature document, and by being debated, discussed and reflected upon becomes eventually owned by them.

[5] What is the problem driving the research? What is the need for the research to be carried out? What is the innovative perspective that you are bringing to the research? What are the anticipated outcomes of a successful research program based upon these ideas? (Sillitoe and Crosling 1999).

activities, and provides support for exploring different ideas and thinking about specific projects.

We believe that opportunity for beginning researchers to participate in such a community of practice can encourage their continual development as researchers beyond the formal setting of arranged sessions and meetings. Further, by opening up the possibilities for extended interactions between interested participants, we believe that this will contribute to the building of a 'critical mass' of people committed to promoting scholarly practice as researchers. To assist in this endeavour, in addition to explicitly promoting the principles of reflexive practice within our formal sessions, we attempt to explicitly enact ways of being a scholar, researcher supervisor or research student. These enactments include: the clarification of requirements and expectations of researchers who work within the community of practice; providing model environments in which participants can raise questions and discuss efforts to improve their practice; critiquing various forms of policy at local and international levels; designing a range of learning activities; encouraging participants to respond to each others' queries and ideas; providing forums for engaging and exploring theoretical and epistemological positions; providing constructive comments on any written work; and seeking feedback on participants' experiences in the community.

The structure of our approach

The model detailed in the appendix shows how the authors broadly envisage the structure of our contributions with colleagues in the following four areas:

Beginning students	Those students who have been enrolled for less than one year, and are still working through the development of a research question and a way of working with research method and perspective
Experienced students	Those students who have been enrolled for more than one year, and who have at some stage articulated a research question and research method but who need ongoing discussion and support in exploring what this means in the context of their research experience. They have achieved, or are near to achieving, candidate status.
Developing supervisors	Those academic staff who wish to perform a supervision role, but who have not had the experience of seeing a number of students through to completion or are not yet on the register of supervisors and therefore cannot act as a principal supervisor
Experienced supervisors	Those academic staff currently on the register of supervisors who are acting or have recently acted as principal supervisor, but who are desirous of collegiate support.

In this structure we are attempting to devise a series of activities or experiences that are suitable for each of these groups separately, but which also provide an overall context for the development of an interacting research culture in the postgraduate area. Also, whilst we (the authors) can provide limited specific development and training opportunities and information sessions from our position outside of the Faculty structure, we recognise that we should continually support and encourage interfaculty initiatives. In Universities where the institutional research initiatives are devolved in large

part to Faculties or to Research Centres, a robust research culture should also operate within these settings thus providing the communities of practice mentioned earlier. In small and new Universities, the ideal of having areas that have their own internal logic and can reproduce and develop themselves without the need for continual external direction is still somewhat distant, and we are attempting to play the dual role of supporting students and supervisors while at the same time encouraging the development of such independent units. In this regard, we recognise that there it is necessary that there should be clear opportunities for feedback regarding supervision and training activities at every level, allowing all participants in the existing community to contribute to the continual shaping of the community.

The framework

We think that there are several types of elements that should be found within such a structured program. First, there must be an introductory level of discussions designed to give beginning students an overall notion of the concept of University research. By engaging with this first responsibility, we are attempting to provide a common 'canon' of ideas so that all researchers within the University research community have a shared idea of the context in which they are working (Chalmers 1982; Crotty 1998; Popper 1963; Slife & Williams 1995). If this is not facilitated, we run the risk of falling into a situation akin to C. P. Snow's 'Two Cultures' (or perhaps a 'Multiple Cultures') environment (Snow 1993) where communication across paradigms is hindered, and 'paradigm wars' (Tashakkori & Teddlie 1998) emerge.

To aid this general introductory discussion, both VU and UB have used a '5 Ps' approach that we call Presage, Preparation, Process, Product and Permanency, to break the research experience into five broad, but sequential, phases. By focussing upon each phase in turn, students are introduced to the similarities and differences between paradigms, and are given a first look at some of the specific issues that all researchers need to address during the course of a project. In an effort to move beyond a research skills focus in these sessions, we have placed a significant emphasis upon the way in which participants conceptualise their projects in terms that can be communicated with scholars in other disciplines. Earlier, we referred to our attempt to develop an ability with students to critically reflect upon the description of their research project, and this is usually introduced during the discussion of the Presage phase of the research process. This is followed, in the Preparation phase, with the construction of a 'Vee heuristic' (Novak & Gowin, 1984) for the student's proposed project. This learning device, although initially developed in the context of school learning, has been modified for postgraduate work. Engagement with the implicit questions contained in the heuristic requires that students develop a clear description of their proposed work that includes: a statement of their underlying epistemological stance, a discussion of the theoretical framework, principles and concepts that underpin the project; a clear rendition of the research question; details of the events that provide the data for the study; and a clear description of the research records, their transformation, and the resulting knowledge claims that will emerge from the data analysis. As an integral part of this construction, students are asked to explicitly show how the methodology selected for the study and the methods employed for data collection and analysis are consistent with the conceptual underpinnings of the project as detailed in the Vee heuristic.

Whilst the University of Ballarat Graduate Centre Program has been largely developed to assist students with their academic program, it also provides a place for students to share experiences and talk to other research students in a supportive environment. After a comprehensive review in 2001, the

University agreed that a postgraduate education program was an essential element in the training of higher degree by research students, and it has been designed to ensure that students are ready for the major events that occur during their candidature. The program includes (I) an Orientation Day, where students are welcomed to the University at a semi-social occasion, and are advised of the services that are provided, and (ii) The formal Graduate Centre Program, that is geared to ensure that students receive the information and assistance in completing major components of their thesis development. Because UB's higher degrees by research numbers are relatively small, staff are conscious that students can experience isolation during the early days of their candidature, and one of the main aims of the programs is to ensure that all students meet every week at the Graduate Centre program. The first 30 minutes of the program is a social time to share a light lunch and a coffee, which enables students to chat and form research discussion groups that can be across the disciplines.

The formal program includes the design of the research question, selection of appropriate research methodology, help with application for ethics clearance, comments on the literature review, information about software packages such as Endnote, SPSS and NVivo, advice to help in the Confirmation of Candidature, hints on presentation skills, perspectives on examination procedures, finding careers in academia, assistance in writing scholarly papers, and discussion about relationships with their supervisors. In all of these seminars, there is an underlying concern that our higher degree by research students are helped to meet UB's core postgraduate attributes, and in this regard UB organises a one-day annual Research Conference, at which all students are encouraged to submit papers and posters as a practice experience to prepare them for wider academic engagement within their discipline. To support supervisors, a formal program of forums is organised by the Dean of Graduate Studies, where, several times year, the 'supervising community' gather off-campus to reflect and discuss issues of research practice and policy.

VU has provided four streams of seminars for students and supervisors. The first stream has been designed to mainly use OPR staff in an effort to establish group cohesion with the beginning students, and to set the underlying notions of a sharing, interactive research community. Having the same presenter for 11 weeks in the first semester allows a rapport to develop between the students and provides the basis for the second semester of more informal interaction, which often involves past students discussing their experiences. The other three streams have been fashioned to cater for more experienced students in that they deal with more detailed topics. For example, there is a stream that deals with 'Methods and Methodologies', where experienced researchers are asked to present aspects of their work in order to maintain the community generally at the forefront of academic research practice, a stream that outlines University 'Processes and Procedures' where supervisors and students are given details regarding institutional requirements for research workers and postgraduate students, and a stream that has a 'Skills focus' where topics are chosen to provide detailed information and assistance with aspects of both qualitative and quantitative analysis. There is also a series of general 'Seminars' dealing with specific issues in research provide an introduction to the wider world of scholarly investigation from the perspective of engaged practitioners.

Also at VU, developing supervisors are offered four activities. An intensive seminar, called 'Demystifying supervision', presented by an experienced supervisor that gives a rigorous overview of the elements of supervision in a

two-day format. Second, there is a formal subject that forms part of a Graduate Diploma in Education that is loosely based upon the 'Beginners' stream for postgraduate students. By using this parallel structure, it is intended that students and their supervisors can have a shared basis of understanding of the general phases of research and the attempts to build a community of practice. Third, we have a mentoring scheme for supervisors, where staff who are not yet on the supervisor's register but who have special skills and knowledge in a student's field, can act as co-supervisors in conjunction with a more experienced colleague. Finally, there is an informal series of discussions, which we term 'Conversations', that are provided as a forum for supervisors to talk about issues in supervision with colleagues. Each of these activities is intended to provide supervisors with on-going demonstrations of developmental activity with supervision in order that they can remain on the formal register of supervisors. Our hope, clearly, is that experienced supervisors will contribute in an on-going way to these activities, such as providing seminars for experienced students to acting as mentors with developing supervisor colleagues.

The future

Many of the elements of the above approach are relatively new, and we are still in the developmental phase with them. It is possible to say, however, that there are encouraging signs emerging for us in terms of the immediate effect upon some students and supervisors. At both VU and UB, the stream provided for beginning students was well attended (about 25 students at each venue per session), and the student feedback that was sought after each seminar provided very positive feedback.

At UB, students were asked to rate issues including (i) satisfaction with the presenters, (ii) the length of the session, (iii) the time available for discussion, (iv) the teaching and learning strategies, and (v) the organisation of the seminar. On a ten-point scale, with 10 being very satisfied, the majority of ratings were 8-10. An open question 'What stood out as the most important thing or things you learnt today?' indicated that many students were very pleased with the introduction of discussions of epistemology, with a number of them noting that this was not a feature of regular supervision sessions. From these students' comments, what also appeared to have been appreciated at UB was the feeling of 'community' that emerged amongst the students, even thought they were enrolled in very different academic disciplines.

The VU evaluations showed a similar positive response from participants. More than 98% of all responses to the question 'Overall did you find this session useful?' indicated 'Yes', and follow-up suggestions of why the sessions were useful included a number of explicit positive comments regarding the focus upon epistemological issues and the chance to talk about 'peripheral' research issues.

We are also receiving much informal positive feedback from participants in the 'Conversations' for developing supervisors, and also from those supervisors involved in the mentoring schemes. This has been an encouraging experience, and in 2006 we will be carrying out more formal evaluations to determine if our attempts to foster the building of a community of practice are beginning to make a significant impact. We will be looking, in particular, for instances where the approaches taken in the various programs are being seen to influence practice or discussion in other forums, and whether the intellectual exchanges between students, and between students and supervisors, have been enhanced by our emphasis upon the techniques and practice of explicit description of the knowledge base of the research project.

As indicated earlier, we are currently in a somewhat transitory position. We are attempting to provide experiences and an environment for postgraduate research students from our centralised units whilst at the same time working to develop and support focussed research areas that have their own structures and programs. We believe that the move to such a devolved system will provide a number of vigorous communities of practice that can extend and develop themselves without the need for outside direction, thus eventually freeing the centralised units to provide University-wide developmental activities such as research conferences and seminars.

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Appendix 1

An approach to providing support for the various client groups

Beginning students — Those students who have been enrolled for less than one year, and are still working through the development of a research question and a way of working with research method and perspective

Induction (Two days, Semester I)

Stream 1 (12 structured formal sessions in semester I)

Stream 1 (12 informal discussion sessions in semester II)

Experienced students — Those students who have been enrolled for more than one year, and who have at some stage articulated a research question and research method but who need ongoing discussion and support in exploring what this means in the context of their research experience. They have achieved, or are near to achieving, candidate status.

Stream 2 (Methods and Methodology stream, semesters I and II)

Stream 3 (Processes and Procedures stream, semesters I and II)

Stream 4 (Skills focus stream, semesters I and II)

Developing supervisors — Those academic staff who wish to perform a supervision role, but who have not had the experience of seeing a number of students through to completion are not yet on the register of supervisors and therefore cannot act as a principal supervisor

Demystifying supervision (Two days, semester I, repeated semester II)

Conversations (12 informal discussion sessions, semesters I and II)

Formal Supervising Research subject (12 weeks, Semester II)

Mentoring Scheme (Ongoing informal support)

Experienced supervisors — Those academic staff currently on the register of supervisors who are acting or have recently acted as principal supervisor, but who are desirous of collegiate support.

Conversations (12 informal discussion sessions, semesters I and II)

Occasional Seminars (Semesters I and II)

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