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# Female PhD Students at the University of New England - 1984 to 1994

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**Introduction**

This paper has arisen from a review of PhD student statistics and degree outcomes at the University of New England (UNE) between 1984 and 1994 (Arthurson, 1995).

Total enrolments of women increased from 25% in 1984 to 40% in 1994, there was significantly less likelihood of women completing the PhD program than men, although over the period of the review their likelihood of successful completion improved. These results led me to look more closely at the performance of women in the PhD Program at the University of New England from 1984 to 1994, to try to identify areas in which women were having most success and most difficulty.

The entry standard to the PhD Program, which is administered centrally at UNE, is equally rigorous for science and non-science students. However, I intuitively expected to find that women did not perform as well in the Faculty of The Sciences as in the non-science faculties. The literature provides a myriad of reasons to support this "intuition": the way fairy stories have been told to children (Davies & Banks, 1992); the bias in schools' curriculum (Cohen, 1984); the gender-specific styles of communication (Conrad, 1994; Conrad and Phillips, 1995); the treatment of females in traditionally masculine sciences as a minority group, increasing their anxieties and tensions (Thomas, 1988); deeper seated qualitative differences in the intellectual development of males and females (Gilligan, 1982) and the way these affect their approaches to studying in higher education (Meyer, Dunne, and Richardson, 1994). However, there has been recent work (Richardson, 1993; Hayes and Richardson, 1995) that contradicts this expectation, at least at the undergraduate level.

This paper discusses the differences in the performance within the PhD Program, of women from the four UNE faculties: Arts; The Sciences; Economics, Business and Law (EBL); and Education, Health and Professional Studies (EHPS), in terms of conditions that may be specific to UNE and in relation to the available literature.

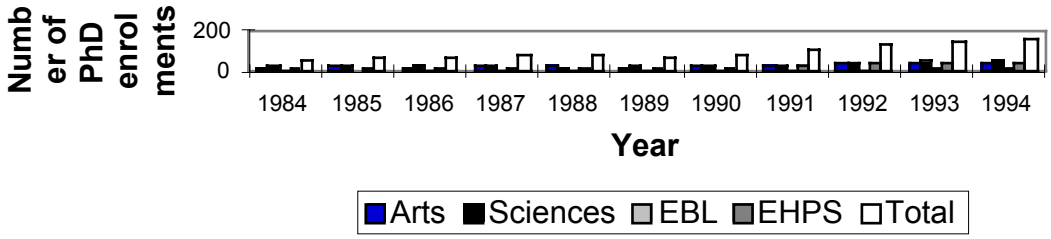
**Results**

In order to identify the relative performance of women in the four faculties at UNE, enrolment levels, graduation rates and rates of non-completion, completion times and examination outcomes within each faculty were examined.

Annual Female PhD Enrolments by Faculty

The total number and the number of women enrolled per annum in the PhD Program, in each faculty, are shown in Figure 1.

**Figure 1: The total number, and the number in each faculty, of women enrolled in the PhD Program, from 1984 to 1994**




From this it can be seen that:

- the numbers of female students in all faculties increased from 1984 to 1994; and
- women in The Sciences had an increasing share of the total enrolment from 1991-1994.

The total numbers of women enrolled in each faculty for the entire period of the study, that is from 1984 to 1994, were as follows:

- Arts - 135;
- The Sciences - 131;
- EBL - 21; and
- EHPS - 84.

PhD Enrolments of Women for Individual Faculties

The percentages of women enrolled in the PhD Program in total, and in each faculty, per annum, from 1984 to 1994 are presented in Figure 2. Note, that these percentages are in relation to the total number of females and males within each faculty.

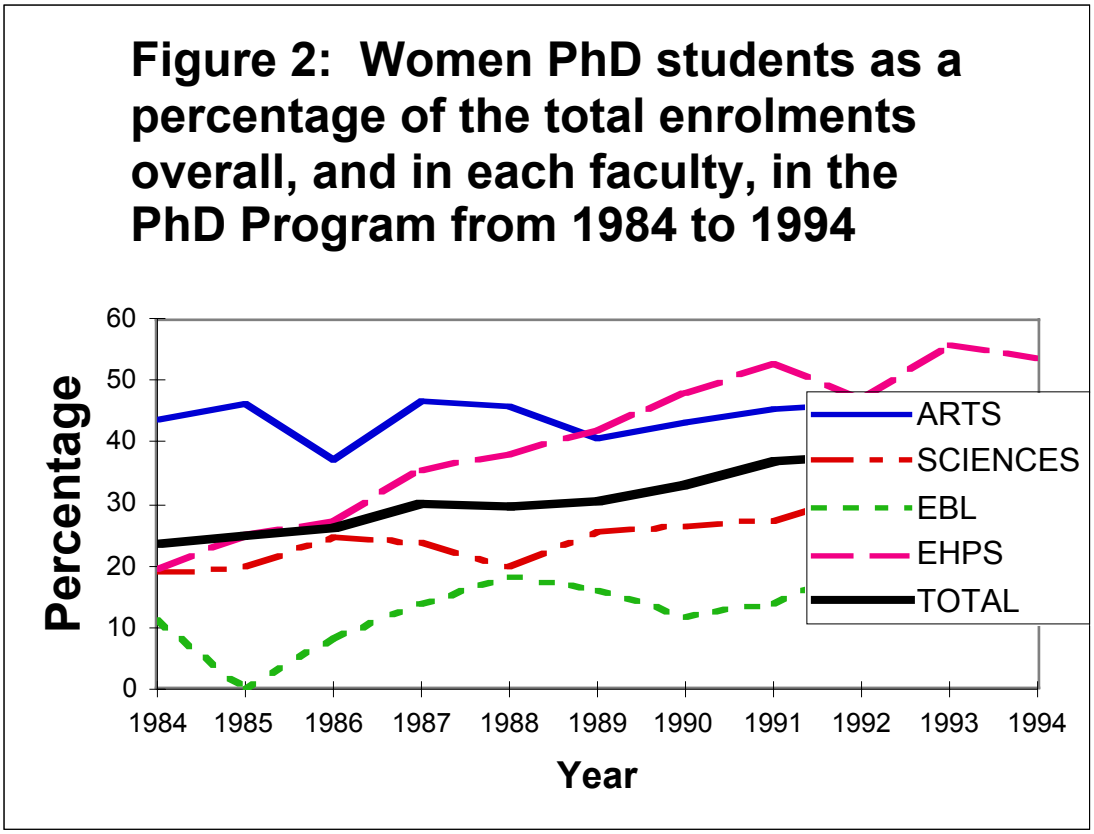



Figure 2 indicates that:

- in relation to the total enrolments in the PhD Program, the percentage of women increased from approximately 25% in 1984 to 40% in 1994;
- Arts had the most consistently high proportion of women in the PhD Program, at just below 50%;
- In The Sciences there was a gradual but consistent increase in the level of PhD participation by women from 20% to 35%;
- the participation of women in EHPS increased most dramatically from 20% to 55%, and outstripped that of men in that faculty by the end of the study period; and
- representation by females in EBL in the PhD Program fluctuated from 0 to 27%, with EBL displaying the lowest level of female involvement.

Graduating and Non-completing PhD Students

In assessing success rates, it is first necessary to consider completion rates.

**Table 1: Percentages of all students, all women and women in each faculty who left the PhD Program as graduating or non-completing, from 1984 to 1994.**

| Group | Percentage Graduating | Percentage Non-completing |
|---|---|---|
| **Total student group** | 62.3% | 37.7% |
| **Total women** | 51.0% | 49.0% |
| **Women in Arts** | 34.5% | 65.7% |
| **Women in The Sciences** | 66.7% | 33.3% |
| **Women in EBL*** | 50.0%* | 50.0%* |
| **Women in EHPS** | 55.9% | 44.1% |

- Note: There were only 2 graduating and 2 non-completing women in EBL

Table 1 shows that:

- the total group of women performed below the standard of the total student group, which included men;
- in Arts, the percentage of graduating female PhD students was the lowest and was only slightly more than half that of those who were non-completing;
- in The Sciences, the percentage of graduating female PhD students was above both the total student group and the total women group and it was double that of those in The Sciences who were non-completing;
- in EHPS, the percentage of graduating female PhD students was lower than the total students group, but slightly higher than the women's group and that of those in EHPS who were non-completing; and
- in EBL, there were only 2 graduating and 2 non-completing women.

Completion Times by Faculty

We then need to consider the patterns of completion. Completion time was calculated in months from the date of enrolment to the date of the submission of the thesis for all graduating PhD students, from 1984 to 1994 on the basis of enrolment as full-time or part-time attendance. Any time out of the program, that is when a candidature was suspended, was not included in the calculation of completion time. Table 2 presents the number of full-time and part-time graduating female PhD students, the range in completion times (in months) and the mean completion time (in months), for each faculty.

**Table 2: Time in months from enrolment to submission of thesis for graduating females in each faculty**

| Full-time Females | | | | Part-time Females | | | |
|---|---|---|---|---|---|---|---|
| | **Number** | **Range in Time (months)** | **Mean Time (months)** | | **Number** | **Range in Time (months)** | **Mean Time (months)** |
| **Arts** | 13 | 30-89 | 58.9 | **Arts** | 7 | 53-82 | 67.4 |
| **Sciences** | 26 | 30-73 | 49.7 | **Sciences** | 10 | 46-78 | 66.5 |
| **EBL** | 2 | 48-57 | 52.5 | **EBL** | 0 | - | - |
| **EHPS** | 8 | 42-92 | 61.3 | **EHPS** | 11 | 38-88 | 60.8 |

Table 2 shows that:

- the mean time from enrolment to the submission of a thesis for full-time women PhD students was lowest for those enrolled in The Sciences and was the only one which came close to the four years (48 months) set for completion under a full-time PhD candidature at UNE;
- for part-time women PhD students, all mean completion times were below the six years (72 months) stipulated at UNE;
- for part-time women, the shortest mean time for submission of a thesis was evident in EHPS;
- the mean time for completion for part-time female Science PhD students was very close to that of those in Arts; and
- the ranges in completion times were broad in full-time and part-time groups.

The particularly low completion times probably resulted from PhD candidatures which have begun as a transference from a Master's degree, or in the case of part-time students, a change of mode to full-time; the longer candidatures arose from either one to several extensions or, in the case of full-time students, a change in mode of attendance to part-time candidature.

Examination Outcomes

The process of PhD examination at the University of New England is administered centrally for all four faculties. It involves the nomination of three examiners (of which only one can be internal and which must not include any of the candidate's supervisors) by the head of the candidate's supervising department, and their subsequent approval by the University's PhD Committee. During the study period, there were five alternative initial outcomes from the examination process. These were :

- award with no amendments;
- award subject to amendment;
- revise for re-examination;
- examiners to consult; and
- thesis and examiners' comments to be sent to an adjudicator.

If either the fourth or fifth option resulted, there was usually another stage in the examination process. A comparison of the initial outcomes in each faculty provides an indication of the ease with which candidates completed their Program. Table 3 presents a breakdown of initial examination outcomes for females in the four faculties.

**Table 3: Initial examination outcomes for women graduating from the four faculties.**

| | ARTS | SCIENCES | EBL | EHPS |
|---|---|---|---|---|
| **Award with no amendments** | 3 (15%) | 7 (19.5%) | 0 | 8(42.1%) |
| **Award subject to amendment** | 11(55%) | 26(72.2%) | 2(100%) | 7(36.8%) |
| **Revise for re-examination** | 1(5%) | 0 | 0 | 0 |
| **Examiners to consult** | 5(25%) | 3(8.3%) | 0 | 4(21.1%) |
| **To adjudicator** | 0 | 0 | 0 | 0 |

Table 3 shows that:

- the highest percentage of "award with no amendment" occurred in EHPS;
- the highest percentage of "award subject to amendment" occurred in EBL;
- the highest percentage of "award with or without amendment" occurred in The Sciences;
- and the only "revision for re-examination" occurred in Arts which also recorded the highest percentage of "examiners to consult".

From this, it appears that the examination process for PhD theses submitted by women was most decisive and favourable in The Sciences. Although the highest percentage of award without amendments occurred in EHPS, that faculty also displayed a relatively high level of "examiners to consult" outcomes. The most problematic set of outcomes was evident in theses examined in Arts.

**Discussion**

The entry standard to the PhD Program, which is administered centrally at UNE, is equally rigorous for science and non-science students. Why then have women in the PhD Program in The Sciences at the University of New England, contrary to "intuition", done better than their counterparts in the other faculties? Not only did their enrolments increase, but:

- the graduation rate of women in The Sciences was higher than for those in other faculties;
- The Sciences had the lowest percentage of non-completing women;
- completion times for full-time women in The Sciences was less than for those from the other faculties; and
- overall, the examination outcomes for women in The Sciences tended to be more straightforwardly positive.

The literature reveals that these results are in keeping with expectations for research postgraduate students, in general, in the sciences (Powles, 1989). Science postgraduates research students are more likely to be working in situations which encourage teamwork, greater discussion of research progress and outcomes, and closer theoretical frameworks (Kyvik and Smeby, 1994), resulting in shorter completion times and higher completion rates (Booth and Satchell, 1991; Powles, 1989), and possibly explaining the more straightforward examination outcomes.

This can be contrasted with the essentially isolated research style evident in the humanities and social sciences (Holdaway, 1993; Kyvik and Smeby, 1994;), and the expectation of lower retention rates, longer completion times and more frequent changes of status from full-time to part-time candidature that are seen as being typical of postgraduate research degrees in these research fields (Powles, 1989). Women in PhDs in the humanities and social sciences thus confront a research culture less conducive to project completion.

Two aspects which provide further explanation for the findings presented here are:

- the age at entry to the PhD Program; and
- the attendance mode, that is whether the student is an internal or an external student.

Table 4 shows the ranges and mean ages for women entering the PhD Program by faculty.

**Table 4: Age (in years) of female students at initial enrolment in the PhD program.**

| Faculty | Number of students | Range in Age | Mean Age | Median Age | Modal Age |
|---|---|---|---|---|---|
| **ARTS** | 135 | 22-66 | 38.0 | 37 | 37 |
| **SCIENCES** | 131 | 22-77 | 30.2 | 28 | 23 |
| **EBL** | 21 | 25-63 | 35.7 | 33 | 27 |
| **EHPS** | 84 | 26-78 | 43.1 | 42 | 37 |

It is clear from this table that women enrolling in the PhD program did so at a much earlier age in the Faculty of The Sciences than in any of the other three faculties, and in this regard, women in this faculty conformed to the idea of Science higher degree students tending to be young, as indicated in the DEET Report on the Postgraduate Research Award Holders, 1979 Cohort (1998, in Powles, 1989). This is most likely to be due to more Science discipline students continuing without interruption from their undergraduate degree into postgraduate research (as indicated by the very low modal age for entry).

The oldest group of students entering the PhD Program was in the Faculty of Education, Health and Professional Studies. In contrast to The Sciences, students entering the PhD program in EHPS may have done so after a substantial period in employment (as teachers, nurses, administrators etc). Additionally, undergraduate enrolments in this faculty and also in the Faculty of Arts may consist of more mature age students than they do in The Sciences, thereby pushing up the age of students continuing on to postgraduate research.

There has been much discussion about the disadvantage that women face in terms of family and financial commitments and expectations of subordination to personal factors external to their postgraduate degree work. In terms of identifying the likely role these issues played in hindering the performance of women in Arts, EBL and EHPS in relation to that of those in the Sciences, more research is required. I can merely suggest that the influence of these external factors is likely to be less for the younger women undertaking a full-time PhD Program, probably on a postgraduate scholarship, than it is for those entering their candidatures at a later stage in life.

Mode of attendance was identified in the "Review", from which this study stemmed, as being important in terms of whether PhD students completed or not. Table 5 breaks down the enrolments, the graduating and non-completing numbers for women in the PhD Program at UNE from 1984 to 1994, on the basis of their mode of attendance, that is whether they were studying internally or externally.

**Table 5: The percentage of women PhD students enrolled, graduating and non-completing by their mode of attendance (internal or external)**

| | Enrolled | | Graduating | | Non-completing | |
|---|---|---|---|---|---|---|
| | %Internal | %External | %Internal | %External | %Internal | %External |
| **ARTS** | 61 | 39 | 60 | 40 | 47 | 53 |
| **SCIENCES** | 86 | 14 | 95 | 5 | 67 | 33 |
| **EBL** | 86 | 14 | 100 | 0 | 100 | 0 |
| **EHPS** | 51 | 49 | 37 | 63 | 27 | 73 |

Table 5 shows that there was a disproportionately high percentage of externally enrolled women who were non-completing in all faculties except EBL. This firmly supports the suggestion that physical isolation from an academic community was an important factor when considering an individual's likelihood of completing a postgraduate research degree and that it exacerbated the situation for a high proportion of postgraduate women in PhDs in the non-science faculties.

**Conclusion**

The results of the analysis of 11 years data on the performance of women PhD students at the University of New England have shown that women in the Faculty of the Sciences outperformed those enrolled in the Faculties of Arts, of Economics, Business and Law, and Education, Health and Professional Studies with better completion rates, shorter completion times and more straightforward examination outcomes.

These results appear to be "counterintuitive", but fit the available literature on the overall performance of postgraduate research. Age of entry to the PhD Program and mode of attendance were identified as being important elements in the success rates of women in the different faculties at UNE.

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# Is there strength in numbers? The effectiveness of supervisory panels.

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**Abstract**

Supervision has been said to encompass a broad view of PhD education and not purely the one-to-one interaction between the student and supervisor. However, this interaction (or, in some cases, lack of interaction) may be responsible for influencing the student's whole supervision experience.

Under the rules which govern PhD education at the Australian National University (ANU), all PhD students have a supervisory panel consisting of at least three supervisors and/or advisers. The way in which supervision occurs within this framework varies as does the success of such panels. This paper reports on the results of a survey of PhD students in three Graduate Programs at the ANU. The survey sought information on a number of areas related to supervision and examined the composition and success of supervisory panels.

## Introduction

How effective are supervisory panels? What aspects of their composition and students' supervisory interactions are responsible for contributing to their success?

In recent years a great deal of research has been carried out investigating supervision in general; from both the supervisor's and the student's point of view. However, there appears to be very little in the literature relating specifically to the value of a supervisory panel over supervision by only one or two supervisors.

Rudd's (1975) study which focused upon a student perspective with regard to supervision, recommended the establishment of supervisory committees and also the creation of graduate schools. Moses (1984) also commented that supervisory committees or joint supervision diminish the danger of a student depending on one person and the problems of possible personality clashes. Difficulties arising as a result of discontinuity due to staff mobility or absences are also minimised. The supervisory panel or committee additionally provides a group who serve as first critics for each stage of the student's research project

The appointment of PhD supervisory committees for each candidate was also suggested by Sheehan (1991) in order to provide more support for postgraduate students. He comments that lack of adequate support and supervision contribute to poor completion times as well as the loss of students completely.

Cullen, Pearson, Saha and Spear (1994), in their study at the Australian National University (ANU), examined the system of the panel of supervisors. Their first recommendation for

restructuring practice so as to ensure effective graduate education was the establishment of supervisory panels.

> *Panels allow students access to a broader range of skills and expertise as well as allowing them to be socialised into different intellectual cultures - through the appointment of supervisors from industry, for example. Panels also allow for a robustness in supervision in that they help to alleviate problems which arise through individual interactions or through changes of personnel*. (p. 104)

The value of supervisory panels to successful supervision and graduate study has therefore been an issue for discussion for some time. At the ANU the use of supervisory panels, involving a minimum of three supervisors/advisers was introduced in the early 1980's. The Graduate School was established later in 1988 to span both parts of the university, The Faculties and the Institute of Advanced Studies, and by the time it was fully operational in 1991 the use of supervisory panels became a requirement for the supervision of PhD students.

The concept that graduate students are enrolled in University-wide Graduate Programs is central to the Graduate School. Within a month of a candidate's admission to a course a panel of three people, with at last one person as a supervisor, must be appointed. The remaining two (or in some cases even more) people may be either supervisors or advisers. It is also recommended that at least one member is an adviser with the function of advising at the request of the candidate on any matter relating to their course. At least one member of the panel must be a full-time academic staff member of the ANU. (Graduate Handbook, 1996, p. 421)

Cullen et al (1994) report that supervisors tend to prefer to be a single/principal supervisor with students approaching other supervisors/advisers when needed. Students, on the other hand, were more likely to prefer to see all their panel regularly.

This issue and others were covered in a survey to PhD students in three Science Graduate Programs (Graduate Program Study) at the ANU in late 1994. Feedback from students was sought on various aspects of their supervision, including details on the structure of their supervisory panels and the kind of assistance received from each member of the panel. Additional information was obtained regarding students' location on or off campus (with a science oriented organisation primarily based near to ANU). This was particularly relevant to students' interaction with their supervisory panel and also to their relationship with their ANU Department/Division.

**Method**

In conjunction with the Convenors of the three Science Graduate Programs a questionnaire was designed and mailed out to the 106 PhD students enrolled in these Programs. The questionnaire included a few questions drawn from the Cullen et al (1994) study, specifically relating to students' interactions with their supervisors/advisers. The questionnaires were distributed with a cover memorandum from the Acting Convenor of one of the Graduate Programs. The memorandum encouraged students to participate in the survey and assured respondents that their responses would be treated in confidence. Eighty-six students sent in completed questionnaires resulting in an 81% response rate.

The questionnaire survey investigated a number of areas related to supervision including background characteristics; choice of institution and research project; supervision panels; facilities; course work and seminars and issues especially pertinent to off-campus students. Information particularly relevant to supervisory panels was sought on their composition; how frequently they met; the group dynamics of the candidate's supervisory interactions with the members of their panel; as well as the kind of assistance individual members provided to the candidate.

## Results

Ninety-seven per cent of the students completing the questionnaires were full time students and only 3% part time; 63% were female and 27% male; 72% of the respondents obtained their highest academic qualification (prior to studying for their PhD) in Australia and 28% overseas.

Supervisory panels

All PhD students who completed the questionnaire were supervised using a supervisory panel, however the structure of the panel and the way in which supervision occurred within this framework varied. The following table indicates the frequency and composition of panels assigned to students in these particular Graduate Programs. It demonstrates the range of structures with the most frequent comprising **two** supervisors and **one** adviser (32%) or **one** supervisor and **two** advisers (21%).

**Table 1: Composition of supervisory panels**

| Panel | Frequency | Percent |
|---|---|---|
| 4 supervisors only | 5 | 6 |
| 3 supervisors only | 11 | 14 |
| 3 supervisors and 1 adviser | 8 | 10 |
| 3 supervisors and 2 advisers | 1 | 1 |
| 2 supervisors and 1 adviser | 25 | 32 |
| 2 supervisors and 2 advisers | 5 | 6 |
| 2 supervisors and 3 advisers | 1 | 1 |
| 1 supervisor and 2 advisers | 17 | 21 |
| 1 supervisor and 3 advisers | 4 | 5 |
| 1 supervisor and 4 advisers | 2 | 3 |
| 1 supervisor and 6 advisers | 1 | 1 |
| Total | 80 | 100% |

There were no differentiating factors which determined the composition of supervisory panels. Variables such as gender and whether students were located on or off campus did not affect the number of supervisors or advisers comprising an individual's panel. Cullen et al (1994) however found women had slightly larger panels with more advisers but no fewer supervisors. The composition also did not appear to contribute to students' satisfaction with the overall quality of their supervision

Students were asked to describe the group dynamics of their supervisory interaction with members of their panel. Analysis revealed no gender differences, however the dynamics did vary to a small extent for students located on and off campus. The results have been grouped and tabulated for students in the two locations in Table 2.

**Table 2: Group dynamics of supervisory interactions for students on and off campus**

| Group dynamics | On campus | | Off campus | | **Total** | |
|---|---|---|---|---|---|---|
| Receive virtually no supervision | 0 | 0 | 1 | 3% | **1** | **1%** |
| Primarily have one principal supervisor | 10 | 23% | 4 | 12% | **14** | **18%** |
| Have one principal supervisor and see the others when their particular expertise is needed | 22 | 50% | 15 | 46% | **37** | **48%** |
| See supervisors/advisers regularly for general supervision | 9 | 20% | 9 | 27% | **18** | **23%** |
| Other | 3 | 7% | 4 | 12% | **7** | **9%** |
| Total | 44 | 100% | 33 | 100% | **77** | **100%** |

In their study Cullen et al (1994) reported that 24.9% of panels arrangements were essentially the single supervision model. Table 2 shows that in the Graduate Program Study there is a slightly lower percentage (18%) of respondents mainly in contact with one principal supervisor. A significant proportion were in touch with their supervisors/advisers either quite frequently as the need for their expertise arose or regularly for general supervision.

Students off campus, in particular, regularly contacted more than one supervisor/adviser. The chair of supervisory panels for students located **off** campus was still required to be an academic located **on** campus. Consequently, off campus students tended to regularly contact both their ANU on campus supervisor as well as a supervisor located in their off campus area Hence only 12% of off campus students indicated they confined their supervisory interactions to one principal supervisor compared with 23% of students located on campus.

Further investigations of the kind of assistance students received from each of their supervisors/advisers also re-emphasised the on/off campus difference. Areas of assistance included advice on theory, methodology, empirical results, written work, current literature and access to research resources. Students off campus sought equal assistance from at least two supervisors and in most cases an adviser. On campus students, however, primarily sought assistance from their principal supervisor, especially when seeking advice about theory, current literature, feedback on their written work and discussion of their empirical results.

Satisfaction with supervision

In general, 73% of the respondents indicated the overall quality of their supervision was 'excellent' or 'good'. Twenty per cent found their supervision 'satisfactory' while 7% thought it was 'poor'.

Further analysis did not reveal any differences in degree of satisfaction relating to the type of research project or reasons for enrolling in a PhD. The composition of supervisory panels also did not directly affect satisfaction with supervision. Approximately 72% of students who were located either on or off campus considered their supervision 'excellent' or 'good'. However, students on campus were more likely to indicate their supervision was 'poor' rather than 'satisfactory' compared with those off campus. Also, the group dynamics of supervisory interactions for students off campus showed they tended to be in contact regularly with more than one member of the panel. Students in more frequent contact with more than one member of their panel rated the overall quality of their supervision more highly.

Of the respondents who were essentially in contact with only one supervisor 50% indicated the overall quality of their supervision was 'excellent' or 'good'. However, 88% of students approaching more than one supervisor/adviser regularly, found their supervision 'excellent' or 'good'. Seventy-nine per cent of other students who basically had a principal supervisor and also sought the advice of others similarly rated their supervision highly. Hence, students who utilised and took advantage of the range of advice and skills provided by their panel tended to be more satisfied with their supervision overall.

Supervision was also rated as 'excellent' by more than half of the students who indicated their panel met regularly (that is, more than three times a year). Almost another third found the overall quality of their supervision 'good'. Students who indicated their panels only met for their 6 and 18 month reviews were less likely to be so favourable about their supervision. Once again, if a student had a 'functioning' panel they were more likely to rate their supervision highly.

There were differences in degrees of satisfaction between males and females with 80% of females indicating their supervision was 'excellent' or 'good' compared with 61% of males who rated their supervision this way. Just under a third of males rated their supervision as 'satisfactory' while only a few respondents for both females and males indicated their supervision was 'poor'. This contrasts with Cullen et al (1994) who reported women were less satisfied on most counts with their supervision. Powles (1989) also reported that women tended to be less satisfied particularly with access to supervisors, guidance on literature in the field and thesis writing.

Further investigation of 'poor' supervision did not reveal any common problems. However, in one instance the importance of the supervisory panel was highlighted when the student encountered

supervisory problems with one member of the panel and valued the fact that they were able to find help and support from other panel members.

**Discussion and conclusion**

Cullen et al (1994, p.47) commented 'the panel arrangements for supervision place at the ANU appear to have a significant effect in improving student satisfaction'. The results of this survey, with feedback from 81% of PhD students in three Science Graduate Programs, would support this comment. Cullen reported that overall 84.8% of students indicated their supervision was satisfactory or better. In the Graduate Program Study, 92.4% of students reported their supervision was excellent, good or satisfactory. (However, it should be noted that Cullen used a six-point scale while this study used a four-point scale and hence may have been responsible for the differences in the distribution of responses.) Studies elsewhere have reported lower levels of satisfaction including a review of the postgraduate experience at the University of New England (Jurgs, MacKay and Jones, 1995) where 67% of PhD students indicated they were 'satisfied' or 'very satisfied' with their supervision.

The results of this study varied from Cullen et al (1994) on the extent of female satisfaction. A slightly higher percentage of females were located off-campus and also females were more inclined to use more than one member of their panel regularly which may partially explain why 80% of females considered their supervision was 'excellent' or 'good'.

The size of the active or functional supervisory panel is a major contributing factor to the students' satisfaction with their supervision. Students meeting regularly with more than one member of their panel were more likely to indicate a higher degree of satisfaction with the overall quality of their supervision. This higher degree of satisfaction was also expressed by students whose panels met regularly.

Students' written comments have not been reported in detail in this paper however their comments reinforced the observation that there is an enormous amount of variation in the effort supervisors put into their students and in the range of skills offered. The value of the panel is that these variations can be accommodated; roles within the panel are able to be changed if difficulties arise and less experienced supervisors are able to learn from those more experienced. This results in an overall satisfaction with the supervisory process although the degree of satisfaction with individual supervisors may vary.

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# The Structured Program for Ph.D. Students at Adelaide University: The Crop Protection Model

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**Abstract**

In 1994 The University of Adelaide introduced a compulsory program of activities called the "Structured Program" that is undertaken during the first 6-12 months of a Ph.D. student's candidature. The aim of the Program is to enhance a student's abilities and skills to undertake effective research, thereby optimising their chances of successfully completing their thesis in the required time. The Program comprises a Core Component which is compulsory. It includes a detailed literature review, project proposal and project seminar, and this should be completed in the first 6 months of candidature. A student may also be required to undertake an additional Specialist Component taking an extra 6 months.

The Department of Crop Protection has utilised the Structured Program to enhance student training in the early part of their candidature, and administer its large number of research students (50 in 1995). The Department is organised into several laboratory groups and their associated discussion groups are a central element of research training for new students. The Special Component of the Program in Crop Protection may include elements such as the Integrated Bridging Program (where English is not the student's first language), supplemented advanced-level undergraduate subjects, or specialist courses. Further, the Department has linked the Structured Program and student review process in that all students give a seminar presentation at an annual 3-day Departmental Symposium, which includes new students giving their Structured Program Seminar, and his is held just prior to the annual review interviews.

## Background

In 1993 the Council of The University of Adelaide approved a policy requiring Departments to provide a *Structured Program of Activities for Ph.D. Students* enrolling from 1994. Based on existing programs within Departments and Faculties, the aim of the Program was to induct students into research and into their discipline, in a structured manner, to enhance a students' abilities and skills to undertake effective research, and thereby optimise their chances of successfully completing their thesis in the required time.

Within a framework of Core (compulsory) and Directed (additional) Studies activities, each academic Department was encouraged to develop a Program, if one did not

already exist, to meet the discipline-specific needs of its Ph.D. students. Some of the specific areas which the *Guidelines* suggested each department should address included:

- Introduction to the requirements and expectations for successful Ph.D. research at the University
- Issues to be considered in the identification of a research topic and the structure and content of a research proposal
- Preliminary identification of research topics
- Relevant departmental procedures
- Introduction to University facilities to aid research
- Exposure to research methodologies and technologies and the critical analytical skills required in the discipline
- Skills needed to write and publish research papers and theses in the discipline
- Techniques for effective seminar presentation and participation
- Possible enrolment or auditing of courses to address specific needs in the student's academic background.

Students complete the Structured Program by presenting their Outline of Proposed Research to members of the Department (normally in written and verbal form), where it is critiqued and then formally presented to the Faculty and to the Graduate Studies Office for endorsement.

Recent Australian publications related to postgraduate education have again raised the issue of a course work component in the Ph.D. (Cullen *et al.* 1994; Johnston and Broda 1994; Parry and Hayden 1994). One of the main reasons suggested for the inclusion of a course work component in the Ph.D. is that it is likely to improve completions times and rates. Cullen *et al*. (1994) argue that this focus on completion times and rates is not just confined to Australia but that a review of the international literature related to Ph.D. education indicates that currently the main areas of attention are completion times and rates and quality (e.g. Holdaway *et al.* 1993 in Cullen *et al.* 1994). A more structured approach to Ph.D. research has also been recommended in publications related to overseas students (Elsey 1990).

Although the United States graduate system has included a course work component for many years, Cullen *et al.* (1994) argue that one of the reasons this procedure has not been popular in Australian universities is that it is misunderstood. The notion is not that graduate students necessarily attend undergraduate-type courses but that they are involved in a seminar program that facilitates "the socialisation of students into their disciplines and assist[s] students to make the move from reproduction and analysis to speculation which is central to the idea of research" (p. 12). The aim of the Structured Program is to achieve this development in commencing research students; it also provides the opportunity for more formal course work for some students should this be thought necessary.

**Development**

As only a few guidelines to Departments for the development of the Program were initially provided, Departments tended to develop their own which met the specific needs of

their students, staff and discipline. As a result various models have emerged, each with its own advantages and disadvantages. Examples of Programs include:

- Individualised Program e.g. Department of Crop Protection.

- Regular seminar program e.g. the Department of Politics, where students meet for two hours each week for first semester, and work through a program of specifically designed seminars culminating in the presentation of student Proposals.

- Enrolment in an existing Research Methodology Course e.g. Department of Women's Studies.

- Off campus model where materials are provided to students who are, on the whole, based in hospitals and are unable to visit the campus regularly e.g. Department of Orthopaedics and Trauma, where most of the students are Registrars working a full hospital load.

- Combination Program where various aspects of the above Programs are included to address the needs of students who are working at a range of locations e.g. Department of Psychiatry, where students are based in four different locations.

**Evaluation**

Questionnaires were sent in May 1995 to all Ph.D. students who commenced their candidature in 1994 and to one supervisor per student. There was no attempt to match the students and supervisors. The supervisor questionnaire addressed some questions to those supervisors who were also Postgraduate Coordinators. A covering letter, which was distributed with the questionnaires, explained that anonymity would be provided for respondents. Of the 120 students who responded to the Questionnaire, 38 (31.7%) classified themselves as International Students. As a percentage of the total, 97.4% of responding International students took part in a Structured Program whereas only 84% of non-International students did so. Fishers Exact Test found that this difference in proportions was significant ($p = .027$).

Of all the respondents, 105 had taken part in a Structured Program and 15 had not. The reasons given for ***not*** taking part in a Structured Program were: "I didn't know about it "($n = 1$); "I knew about it, but no Program was available in my Department" ($n = 4$); "I was exempted from doing one" ($n = 3$); and Other ($n = 4$). Reasons given under the heading "Other" included:

"Supervisor didn't think it was necessary"

"The Program started in the Department several months after I had commenced"

"Still in progress"

"Part-time student".

Of the staff who responded, 20 (24%) reported that they had been the Postgraduate Coordinator in 1994. The number of students supervised per respondent ranged from 0-7

students. Some Postgraduate Supervisors who responded were not supervising first year Ph.D. students in 1994. The main reason supervisors gave for their students not taking part in a Program was that they arrived after the Program had commenced.

Students were asked to comment on the overall usefulness of the Structured Program in helping them start their research. They were asked about the perceived benefits of the Program, how it could be improved and any other topics which they thought should be included. Table 1 Indicates the rating which students gave the overall Structured Program and its usefulness in assisting them with their Ph.D.

*Table 1 Overall Usefulness of the Structured Program Reported by Students*

| **Faculty** | **No.** | **Overall Usefulness 5 = Very Useful 1 = Not at all Useful** |
|---|---|---|
| ANRS | 38 | 3.1 |
| Arts | 18 | 3.2 |
| Engineering | 5 | 4.0 |
| Maths & Comp Sci | 9 | 4.0 |
| Medicine | 15 | 3.1 |
| Science | 27 | 3.0 |
| "Other Faculties" | 8 | 3.8 |
| **Total** | **120** | **3.5** |

Staff were asked to rate how they perceived the overall Structured Program to be helpful to their students. They were also asked to rate the helpfulness of the Program to them as a supervisor. The results of these responses are reported in Tables 2.

*Table 2 Overall Usefulness of Structured Program*

| Rating | Students | | Staff - Helpful to Students | | Staff - Helpful to Staff | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| 5 = Very helpful | 17 | 14.2 | 15 | 18.3 | 12 | 14.6 |
| 4 | 20 | 16.7 | 19 | 23.2 | 17 | 20.7 |
| 3 = Moderately helpful | 39 | 32.5 | 19 | 23.2 | 17 | 20.7 |
| 2 | 16 | 13.3 | 9 | 11.0 | 14 | 17.1 |
| 1 = Not at all helpful | 8 | 6.7 | 4 | 4.9 | 8 | 9.8 |
| Missing | 20 | 16.7 | 16 | 19.5 | 14 | 17.1 |
| **Total** | **120** | **100.0** | **82** | **100.0** | **82** | **100.0** |

While an overall rating of 3.5 on a scale of 1-5 might not be a highly desirable response, given the somewhat haphazard implementation of the Structured Program in 1994, this rating is considered to be very positive. The evaluation of the 1995 Program is currently being undertaken with results available in May 1996. However, the overall impact of the Structured Program as to whether or not it has improved completion rates and times will not be known until the first two or three cohorts of students involved in the Program have completed their degrees (1997-99).

## The Department of Crop Protection: A Case Study

The Structured Program developed by the Crop Protection Department is one that is based on the design of an individual program for each student, but with various degrees of commonality. This approach was taken, specifically to deal with the multi-disciplinary and multi-cultural nature of the Department, which covers a wide range of disciplines (e.g. entomology, plant pathology, weed science, whole animal ecology, molecular biology, etc), and has a high proportion of overseas students (40%), mostly from developing countries (Iran, Pakistan, Indonesia, Kenya, Korea). The background and preparedness of students coming into the Department is therefore highly variable, and so no unified program would cater well for all students.

As for all Ph.D. students at Adelaide University, several elements of the Core Program are compulsory: these are a written research proposal, literature review and introductory seminar. In addition to these, the Core Program in Crop Protection includes two other major elements: an induction to the Department/Campus, and active participation is the student's respective Laboratory Group (see Fig. 1).

The Departmental induction includes such things as a formal welcome by the Head of Department, explanation of the aims and scope of the Structured Program by the postgraduate coordinator (see Appendix 1 - initial information given to students), tour of Departmental facilities and the Campus (including the library), explanation of people responsible for various Departmental activities/facilities, explanation of Occupational Health and Safety Issues, a seminar presentation skills workshop, and any other relevant matters.

Research in the Crop Protection Department is organised into a number of discipline-based laboratory groups. These are led by an academic staff member and usually include one or two postdoctoral fellows and 3 to 8 postgraduate students. The groups meet usually on a weekly basis and provide a forum for discussion of student's programs, interim results, methods and techniques, and journal paper discussions.

The Directed Studies Program comprised that part of the Program that is specifically designed for individual students, but those who have a sufficient background are usually only required to complete the Core Program (taking about 6 months). The Directed Program (see Fig. 1, Appendix 1) includes such elements as special courses/workshops (e.g. computing and statistical techniques, electron microscopy, molecular techniques, etc); advanced-level undergraduate subjects (supplemented with extra work) if the student is deficient in a particular area related to their project; and the Integrated Bridging Program which is specifically for students that have English as a second language (see Margaret Cargill's paper - Symposium 7 of the Conference).

In 1995, the Department decided to have an annual postgraduate symposium, where all students in the Department present a progress report on their research or their introductory seminar, if they are in their first year and doing the Structured Program. The symposium is held in late September, just prior the annual student review meetings.

## Evaluation of the Crop Protection Model

As part of another study (reported at this conference by Margaret Kiley in Symposium 15) 26 (63%) of the students interviewed in the Department of Crop Protection had not taken part in the Structured Program. Of the 15 (37%) who had, 13 of them commented that the Program was helpful or very helpful. One suggested that in theory it was good, but in practice it was too inflexible while another student commented that it was not helpful as it was too rigid. The main area of concern was with the Literature Review that was seen to be out of date by the time the thesis was completed.

The postgraduate symposium was evaluated separately (in October 1995) to determine its overall value for both students and staff. This evaluation pooled all responses from students as the number undertaking the Structured Program (7) in that year was too small to compare with other students (40). Students presenting papers were asked whether they found the experience very worthwhile, worthwhile or not worthwhile, and the results are given in Table 3.

*Table 3. Overall usefulness of the Crop Protection Postgraduate Symposium*

| Rating | Students |
|---|---|
| Very worthwhile | 8 |
| Worthwhile | 16 |
| Not Worthwhile | 3 |
| No response | 0 |
| **Totals** | **27** |

Comments were also invited from respondents on the best aspects of the Symposium as well as aspects which could be improved and suggested changes for 1996. These comments have been collated and a summary statement provided below. The number in brackets indicates the number of comments on that topic. The major highlights reported by students were:

- Sharing Information (15) - finding out what others were doing as well as meeting other students and staff was considered a major highlight by students.

- Skill development (11) - the opportunity to develop communication and presentation skills.

- Collegiality (5) - The opportunity to meet with staff and students, particularly for those working externally from the department, was seen as a valuable part of the Symposium.

- Atmosphere (3) - The conference-like atmosphere was considered useful.

Major highlights reported by staff were:

- Sharing information (16) - Hearing of students' achievements and learning what was happening in the Department was the greatest highlight reported by staff.

- Skill development (10) - The opportunity for students to develop skills in paper presentations for conferences was considered very important.

- Collegiality (5) - Departmental cohesion and interactions among students and staff was commented on by five staff members as a highlight.

- The use of technology (3) - Three staff members reported positively on the high standard of visual aid used in many presentations.

In addition, both staff and students were asked what improvements could be made. These included better provision of information to students and other participants on aims and expectations, encouraging more feedback, keeping the program on time, not having three days straight of papers, need for a 'wrap-up' session, better attendance by staff, ensuring no problems with the audio-visual equipment, better organisation of tea breaks and need for a social component. These sound like the age-old problems associated with any conference, however, ways will be explored to overcome them in 1996.

## Further Information

Further information about the Structured Program at The University is available on the World Wide Web Home Page - http://www-etu.itd.adelaide.edu.au/ACUE/SP/SP_Home.html

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Appendix 1

**The Structured Program for Research Postgraduate Students in Crop Protection**

## Introduction

Preamble

The following information has been put together to help you complete the Structured Program. As per the information in documentation provided to each student by the Graduate Studies Section (e.g." Code of Practice ..."), all students enrolled for a Ph.D. (and Masters by research, as per Faculty policy) are required to complete the Structured Program within the first 12 months of their candidature. Those students only undertaking the core part of the Program are encouraged to complete this exercise with the first 6 months.

Aims

The overall aim of the Structured Program is to enhance your abilities and skills to undertake effective research at postgraduate level, thereby optimising your chance of success. This will include:

- written, verbal and organisational ability
- technical skills associated with specific methodologies (e.g. equipment, procedures)
- research skills including library and computer use
- philosophical skills that need to be developed by all scientists - innovative thinking, problem solving, collaboration, and contributing to and using the academic and intellectual environment around you.

Organisation

Completion of the core part of the Structured Program is mandatory for all new postgraduates. It comprises formal and non-formal elements. The formal part of the Program includes:

- literature review
- project proposal
- introductory seminar.

The non-formal part includes:

- Introduction to the Department by the Head and/or Postgraduate Coordinator (including a discussion about the requirements and responsibilities of people involved in postgraduate training; discussion about organising and planning your research; meeting with the Department's Laboratory Manager - OH & S considerations; tour and explanation of the Department's and Campus' facilities).

- Participation in research group meetings

- Participation in Departmental and Campus seminars and discussion groups.

Some students, with shortcomings in their theoretical or technical abilities or problems with English as their second language, may be required to undertake supplementary work (Directed Component), in addition to the Core Program. This could include the Integrated Bridging Program, one or more supplemented undergraduate subjects, or a specialist course such as those offered in electron microscopy, statistics, or molecular biology techniques. Your specific requirements need to be discussed in detail with your supervisor and postgraduate coordinator.

## Elements of the Core Program

Literature Review

Your literature review should be an organised and critical review of the literature pertaining to the research that has previously been undertaken related to your project, as well as the specific discipline in which you are working (i.e. a slightly broader view). There is no stipulated length to the review but somewhere in the vicinity of 15 to 30 double-spaced pages (including citations) would seem appropriate, depending on the subject area. The literature review should not be seen as a once-off exercise. By updating it on a regular basis, you will have the best part of your thesis literature review completed before you write up.

Project Proposal

There are many ways in which this could be put together, but generally it might comprise the following sections - Introduction, Aims, Methodology (which might include a description of experiment designs, and any specific procedures), Timetable, Budget, and Significance of the project. Keep in mind that most students have an allocation of $2,000 per year for their project - budgets well in excess of this need to be complemented by funds provided by the student's supervisor and this should be documented in the proposal. Students who have maintenance grants associated with industry or CRC-funded projects should organise their budget accordingly. Remember, this is more an exercise in getting you to think about the costs of your research - it is not to make you financially accountable.

The literature review and project proposal can be usefully put together into one document with a Table of Contents at the beginning and the References at the end, given that some of the same articles will be referred to in both the literature review and research proposal. Ask to see the documents produced by students who have completed the Structured Program to get an idea of how best you might arrange yours.

Project Seminar

The first seminar you give will be 30 minutes in duration (including question time), and will be scheduled in the Department's Postgraduate Symposium (held in September or October each year. It should be a verbal presentation of your literature review, project proposal, and preliminary results. Prior to the Postgraduate Symposium each year the Department/Faculty

will organise a session with the Advisory Centre for University Education (ACUE) on seminar presentation skills.

Research Groups Meetings

One of the most important and effective exercises in which you will be involved is attending the research group meetings run by your supervisor. Normally such groups will include several postgraduate students, research officers, postdoctoral fellows and the group leader (your supervisor). These meetings are the major forums where research is discussed. This includes aspects of research planning and organisation, and presentation and discussion of results for each research project, including your own. It provides a free-flow of information between members of the group and an opportunity to discuss problems, logistics, common interests and relevant new literature. Some students working across research fields may have need to attend more than one laboratory group. These are not 'closed-shops'. You will be welcome at any group meeting, but first consult with the group leader. Further, students working outside the Department's research groups, for instance in CSIRO or SARDI, are strongly urged to associate themselves with a relevant laboratory group, if none exists in the area in which you are working.

Departmental and Campus Seminars

As part of your scientific training and to broaden your knowledge base, we strongly urge you to attend Departmental Seminars as well as the special Waite seminars for distinguished visitors. Because of the multi-disciplinary nature of the Department you may find that seminars in other Departments on the Waite Campus or other campuses are appropriate for your work. Also, there are some special meetings, such as the Waite Ecology Discussion Group, that you may find useful in attending.

**Directed Component (Supplementary Work)**

Integrated Bridging Program

This is a course to introduce students to scientific writing and seminar presentation, where English is not your first language. It is an extremely good course and uses the literature review as an exercise in developing writing skills.

Supplemented Undergraduate Subjects

Some students will be required to undertake advanced-level course work to develop their knowledge in a subject area(s) that is directly related and necessary to complete their research project. The work to be undertaken should be decided on in consultation with the student, his/her supervisors and the postgraduate coordinator. It will be formally assessed and the method of assessment needs to be organised between the student, supervisor and relevant subject coordinator. It will usually include assessment in a form other than sitting the undergraduate written examination.

Special Courses

As part of their Structured Program some students may wish to attend special courses which are offered by various sectors of Adelaide University or some outside organisations.

These may include courses in electron microscopy, computer use, programming, molecular techniques, etc. You should consult you supervisor about attending these.

**Timing & Completion of the Structure Program**

The Structured Program must be completed within 12 months of your enrolment. Those students only undertaking the core part of the Program should complete this exercise with the first 6 months. It is to your benefit to complete your Program as soon as possible. Students doing supplementary work need to timetable carefully the various elements of the Program. For instance, if you are required to complete one or more supplemented undergraduate subjects, you need to balance your work-load between semesters, e.g. course work in one semester, your literature review and project proposal in the next. It is worth discussing your timetable of activities with your supervisor and postgraduate coordinator, particularly in regard to the needs of your research project (e.g. impending field work).

When you have completed all the elements of the Structured Program you need to put them together in a dossier and present it to your supervisor and postgraduate coordinator for final approval. This dossier should include:

1. Literature Review
2. Project Proposal
3. Certificate from the Research and Presentations Skills Course*
4. Results of Supplemented Undergraduate Subjects (signed by the course coordinator)*
5. Certificate showing the completion of any special courses*
6. Completed orange form from Graduate Studies "Completion of the Structured "Program and the Research Proposal#

* Directed Studies Component

# to be signed by the student and supervisors before being handed onto the postgraduate coordinator

Good luck with your research!

# The 'stay-at-home" students: Lack of postgraduate student mobility between Australian universities.

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**Abstract**

A long-held perception by most academics is that there is insufficient movement of postgraduate students between Universities in Australia, compared with other western countries (particularly the U.S.A. and U.K.). This paper presents data collected from scholarships ranking lists and acceptance rates for APA and University scholarships for five Australian Universities - Adelaide, Flinders, Perth, Melbourne and Macquarie. For the first four of these institutions 61-76% of APA/University scholarship applicants are graduates from the same University, while the proportion from the same state/city and interstate are very low (7-18%) and, on average, are about the same. Scholarship acceptances by graduates from the same University for these four Institutions are very high (73-81%) and of the remaining students those from interstate (5-13%) comprise a slightly higher proportion compared with those from the same state/city (2-7%). Clearly, from these statistics students are more likely to accept a scholarship from their own University than from elsewhere. Macquarie is atypical in that only 36% of applicants and 47% of acceptances come from that University. Attempts made by some Cooperative Research Centres and some Universities to proactively attract students from elsewhere have met with only limited success at best. The reasons for a lack of postgraduate mobility and ways it might be increased are discussed.

## Introduction

Ask academic staff about mobility of Australian research postgraduate students, and the almost unanimous reply is that they perceive it to be very low, that it is undoubtedly much lower than other developed countries such as the U.S.A. and the United Kingdom, that it is an important part of training young researchers (i.e. it is crucial to the process of intellectual exchange), and that it should be increased. That Institutions, as well as individual academics, also believe that postgraduate mobility is important is evidenced by the fact that virtually all Universities attempt to attract postgraduate students from elsewhere, mostly through some form of advertising.

In 1992 the Australian Research Council (ARC) was asked to examine postgraduate support and student mobility by the Board of Employment, Education and Training. The ARC directed a Working Party to examine these issues and their finding were published latter that year (ARC Working Party Report, 1992). Most of the report deals with postgraduate support (which is well-researched and accompanied by substantial statistics), and only three and a half of its 17 recommendations deal with student mobility (see below). However, to date, this seems to be the only study that deals with student mobility as a major issue, although several articles make passing

comments that mobility among Australian students is low (see references listed in the ARC Working Party Report, 1992).

My interest in this subject has been a long-standing though incidental one. However, more recently discussions in my Department and Faculty about how to attract 'good' honours students into our research programs led me to examine student mobility more widely, and seek accurate baseline information from which various strategies might be considered.

**Postgraduate Research Training in Australia (1996) - An Overview**

The number of full-time scholarships for Ph.D. and Masters is large and has increased substantially over the last 10 years. In 1996, 1550 Australian Postgraduate Award (APA) scholarships with stipend have been offered through 38 Universities. The vast majority of these have been taken up by students undertaking research degrees. Nearly 80% of these scholarships are distributed among only a third of the 38 Institutions.

However, the APA scholarships represent less than one-third of all postgraduate scholarships available in Australia. Many Universities offer their own scholarships from core funding (estimated at 500-600 in 1996 across Australia), as do many large Faculties. In addition, scholarships funded from other sources, particular from industry such as agricultural agencies, engineering, mining, pharmaceutical and biotechnology companies, various government agencies and the Cooperative Research Centres (CRC's) have increased dramatically over the last 10 years. The total number of scholarships funded from these sources is unknown, but extrapolating from figures in the 1992 ARC Report and the proportion of such scholarships at Adelaide University, it is likely to be in the range of 1,500-2,000 for the whole country.

Also evident from discussions with scholarship's officers in various Universities is that the pattern of scholarships on offer among Universities is changing. For instance, the number of University scholarships offered at Adelaide (in addition to APA scholarships) has been relatively stable over the last few years at 24 (K. Jaeger pers. comm.); at Flinders it has dropped from 25 in 1994 to 13 in 1996 (S. Winn. pers. comm.); while Melbourne University has increased their University scholarships from 50 in 1995 to 130 in 1996 (W. Kendig pers. comm.).

**The 1992 ARC Working Party Report**

Under the Terms of Reference stated in the Report "Ways of Increasing Student Mobility through APRAS", the following quote appears:

> *"Mr Baldwin's policy statement noted that a continuing problem affecting the quality of research training is the apparent reluctance of Australian students to move to another institution to do their postgraduate study."*

This remark is particularly interesting as it directly links mobility of students and quality of their research training. Later in the report the Working Party strongly questions this statement:

> *"The fundamental question is whether mobility, or lack of it, influences the quality of research training. The Working Party concluded that it is not proven that research quality diminishes if mobility is not encouraged - in fact, it had no*

> *evidence that the level of mobility in Australia had any adverse effect on the quality of outcomes."*

However, it appears that there is no evidence available on this matter - the question simply has not been examined. The Report provides figures for APRA holders in 1992 as follows: that 61% of APRA students take up scholarships from the same Institution, 12% from another Institution but from the same state, 18% from another Institution but from a different state, and 9% from overseas (i.e. Australian citizens or permanent residents). The Report goes on to point out that an estimated 10% of students that stay at the same institution move to another Department, that an estimated 10% move to another Institution prior to commencing honours and that, overall, at least 50% of students undertake research training in a different Department to which they have done their undergraduate training. The Working Party concluded that this is probably adequate for Australia. The report also refers to DEET 1990 data which indicates that 52% of all research students (not just APRA's) changed Institutions and, thus, higher degree research students as a whole exhibit greater mobility than APRA holders.

*Reasons for Lack of Postgraduate Mobility*

The ARC Report identifies a number of potential reasons for students not being mobile; firstly that the Australian population is concentrated into a few very distant urban centres. The Working Party concluded that this could be expected to increase mobility within a metropolitan area serviced by more than one Institution. They also identified the lack of recognition of qualifications from other Institutions, financial barriers in the form of relocation costs and, most importantly, the lack of awareness of research training opportunities at other Institutions. Personal relationships are also identified as restricting mobility if a student has a partner who is established in paid employment. In response to these barriers, even though the Working Party indicates that the level of mobility may be satisfactory, and otherwise may not affect the quality of student research, it goes on to make a number of recommendations to enhance and/or maintain levels of student mobility.

*Recommendations of the Working Party*

Recommendation 5b. - The priority areas scheme should be maintained but greater flexibility should be built into the use of funds to enable institutions to: Provide higher stipends to selected students to assist the mobility of students who attend an institution other than the same urban area as the institution at which the student did his/her undergraduate studies.

Recommendation 15. - The Government should ensure that relocation allowances to APRA holders moving from one institution to another are maintained in real terms.

Recommendation 16. - Higher education institutions should produce and disseminate information regarding postgraduate opportunities beyond home institutions, and should examine the possibility of providing vacation scholarships to honours students from different institutions.

Recommendation 17. - The Government and institutions should provide additional incentives, including conference allowances, additional relocation support or other support services, to promote mobility between institutions.

*Outcomes of the ARC Report*

To date, the only one of these recommendations adopted by ARC is No. 15, that relocation allowances be indexed. Whether they were adequate in the first place was not examined in the Report. Further, the APRA priority scholarships for particular research areas have now been stopped, and no other incentives have been funded by the ARC, although some Institutions have introduced incentives or are considering doing so (see below).

In general, the major drawback of the ARC Report is that it relied only on data for APRA scholarships, which the Working Party admits represents only about one-third of all research scholarships. Further, other figures quoted in the Report represent estimates only and it is unclear on what these were based. And finally, there was apparently no attempt made by the Working Party to survey students as to what are the main reasons for moving institutions or not (from their point of view). The reasons given in the Report appear to be those put forward by the members of the Working Party themselves.

## Current Mobility of Students

To address the question of student mobility more thoroughly, a study was set up for a select number of research-based Universities. These were Adelaide, Flinders, Western Australia, Melbourne and Macquarie, and they were chosen to include small, medium and large Institutions, as well as those in large population centres and those that are more isolated. Statistics were collected for APA plus University scholarships offered in 1996 (1995 for Melbourne - 1996 data was not available), and these totalled 580 for the five Institutions. Data were not included for Industry, Faculty or other types of scholarships - these data were simply too difficult to obtain. The mobility of students was compared in two ways: the proportion of scholarship applications and the proportion of scholarship acceptances. These were compared for students from the same University, those from other Universities in the same city, those from interstate, and those from overseas. The data are presented in Table 1.

Table 1. Origin of postgraduate students, as a percentage of the total, for APRA and University Scholarships in 1996 for five Australian Universities, indicated by the origin of applications (based on the honours 1 merit ranking list from each Institution) and the origin of scholarship acceptances (N.B. data for Melbourne University is for 1995).

Applications

| Origin | Adelaide | Flinders | UWA | Melbourne | Macquarie |
|---|---|---|---|---|---|
| Own University | 62 | 61 | 76 | 68 | 36 |
| Same State | 14 | 16 | 7 | 12 | *19 |
| Interstate | 18 | 17 | 11 | 14 | **45 |
| Overseas | 6 | 6 | 6 | 6 | - |
| No. of Applications | 183 | 122 | 142 | 399 | 114 |

Acceptances

| | | | | | |
|---|---|---|---|---|---|
| Own University | 73 | 77 | 81 | 73 | 47 |
| Same State | 7 | 6 | 2 | 6 | *18 |
| Interstate | 10 | 8 | 5 | 13 | **35 |
| Overseas | 10 | 9 | 12 | 8 | - |
| No. of Scholarships | 103 | 52 | 129 | 248 | 49 |

N.B. For Melbourne University the data represent *Same City (not Same State), and **From Outside Sydney (not Interstate).

Scholarship applications from students at the same Institutions make up the highest proportion by far for the first four Institutions in Table 1, varying from 61% at Flinders to 76% at Western Australia. Macquarie is atypical in having more applications from interstate candidates. For the first four Institutions, applications from
The same state, interstate and overseas are very low, varying from 6% to 18%. For scholarship acceptances the pattern is the same as for applications. However, when acceptances and applications are compared there is a substantial jump in the proportion of scholarships accepted by students from the same University, ranging from 73% at Adelaide and Melbourne to 81% at Western Australia. Macquarie also shows the same trend in that applications versus acceptances jump from 36% to 47%. Clearly, scholarship offers are being disproportionally accepted by students from the same University, and disproportionally rejected by other candidates. Indeed, for Adelaide two-thirds of offers to interstate students were rejected. Further, the data are contrary to the idea expressed in the 1992 ARC Report, that there should be increased mobility within a metropolitan area serviced by more than one Institution. In all cases the proportion of students moving from interstate is higher than those both applying for and accepting scholarships from the same state (Melbourne) or city (Adelaide, Perth, Macquarie). Interestingly, Western Australia has the highest proportion of postgraduate students from the same Institution, and this correlates with it being the most isolated, although it also has the lowest acceptances of students from the same state/city. It is unclear why the data are so different for Macquarie in that, according to their scholarships officer, they not doing anything different from the other four Institutions to attract outside students (J. Redhead, pers. comm.). Possibly there are other factors involved such as the make-up of the University in terms of Faculties/disciplines, and proportion of special research centres/initiatives.

Some comparison can be made between the above data and those for scholarship holders in two CRC's on the Waite Campus of Adelaide University. These scholarships are widely advertised through the national media and they have stipends some $4,000 higher than APA and University Scholarships. Of the 15 students in one CRC and four in the other, 45% and 75%, respectively come from the same Institution. Thus, even though these data are very restricted, they show that there may be substantial differences between discipline areas, and that advertising and priority level stipends alone do not ensure student mobility.

**Reasons for Lack of Postgraduate Mobility**

In an attempt to determine the reasons why postgraduate students do not readily move between Universities to undertake postgraduate research, I interviewed a number of students in my own Faculty. This included students who had moved interstate, moved within the University (i.e. between Departments) and who had stayed in the same Department. I asked what they thought were the major reasons that inhibited them from moving or that they though were important for fellow honour's students. They identified four reasons which are not ranked here:

- Financial barriers
- Personal relationships
- Lack of available information on opportunities at other Institutions
- Not enough available time (between finishing honours and starting a PhD)
- Familiarity with their existing Department and/or honours supervisor

Interestingly, lack of recognition of qualifications from other Institutions was not mentioned by any student or, indeed, by any academic staff I have asked the same question (even though it was ranked highly in the 1992 ARC Report).

When considering the above factors, students made a number of critical observations. Regarding financial barriers, the relocation costs given to students are $420 (in 1996) per adult plus airfares, with additional funds provided for children, but few if any students fly to a new city because they need to bring their vehicle. Personal relationships more often than not included immediate family, not necessarily spouses or partners (which were specifically identified in the 1992 ARC Report). Also, apparent from the interviews were that a high proportion of students are still living at home when they are doing Honours. So, not only would they be considering to move cities, but also to be making a break from home for the first time.

A number of students pointed out that applications for scholarships are made before completing honours, and that at this time many students are preoccupied with the final stages of research/thesis writing, and not thinking about postgraduate work, particularly at another Institution. This problem is highlighted by the fact that a number of students interviewed who had moved to Adelaide had taken time off after completing honours and during that time they had explored what research opportunities were available.

Apart from the above comments from student interviews, academic staff mentioned a number of other possible factors they may be important in constraining student mobility. These were that particular disciplines are not well represented in Australian Universities, sometimes only at two or three across the country, and so there were fewer places for students to go compared with other research areas. Even though most academics accept that student mobility is important, some admitted that they and/or colleagues would otherwise try to keep 'good' students in the Department, simply because the chance of attracting similar students from elsewhere was low.

Several of the above reasons put forward in the 1992 ARC Report, by academic staff, and students themselves are not necessarily mutually exclusive; for instance, lack of available information from Institutions and very restricted time after completing honours in which to seek such information. Further, some of these factors add up to there being substantial historical and cultural inertia within the postgraduate arena in Australia, and there is almost an acceptance that mobility is low.

One major difference between the situation in the U.S.A. and United Kingdom is that the barriers to mobility in these countries have already been broken down at undergraduate level, in that a high proportion of students do their first degree away from their home city, and thus have already moved out of the family environment before commencing a postgraduate degree.

If the reasons that contribute to causing a lack of mobility by Australian postgraduate students are to be better understood, there is a clear need for them to be more extensively examined than has been undertaken to date.

**Ways to Increase Mobility**

The recommendations of the 1992 ARC Working Party fall into two categories: those that could be implemented by the ARC itself (on the APRA scholarships), and those that could be implemented directly by individual Institutions. As already mentioned above, the ARC has apparently not taken up any of the Working Party's recommendation, other than to index relocation allowances. Further, data presented here, although preliminary in nature, indicates that some of these recommendations may not have increased student mobility, anyway. For instance, it is difficult to see how vacation scholarships for honours students would work, because of the lack of available time between completing honours and when many scholarships are accepted (by mid to late January). Priority scholarships may induce some student movement but not necessarily, given the experience of some CRC's (see above).

If Institutions wish to attract a higher proportion of students from elsewhere, then clearly it will need to be instigated by them. A number of options are available and some are being implemented or contemplated by some Institutions. These fall into to three main areas as follows:

*Dissemination of Information/Advertising*

As identified in the 1992 ARC Report, higher education institutions can do much more to disseminate information regarding postgraduate opportunities. This was a factor that numerous students identified as a problem area. Clearly, this could take the form of more targeted printed information and, in particular, the development of specific information packages developed for the World Wide Web.

Many Institutions advertise scholarships and other postgraduate information in various ways, posters and advertisements in the national print media being the most common. Advertisements can be highly focused, such as that dealing with a specific scholarships (many CRC and Industry funded scholarships are advertised in this way), or advertisements can be generic (such as those advertising that year's APA and University scholarships). However, several Institutions have given up generic advertisements (e.g. Adelaide and UWA) because of the costs involved and doubt as to their effectiveness.

*Inducements*

Additional incentives, over and above the normal provisions of APA and University scholarships, may help attract students from other Institutions. These may include conference allowances, additional relocation support, higher stipends, or funds to travel home once or twice during their candidature. For instance, Melbourne and

Flinders are currently offering additional relocation support (S. Winn and W. Kendig pers. comm.), while UWA is currently considering a range of inducements including travel to a student's home city (M. Edwards pers. comm.). The problem with such inducements is that in total they may be expensive, and it is unclear whether they would work in achieving the desired outcome.

*Induction Program*

One possible way of increasing the rate of acceptances of interstate students is to bring a proportion of the more highly ranked interstate students to the Institution for a short period of time (one or two days) so that they can meet their supervisor and see the prospective Department. This could be undertaken in the first half of January prior to when most students accept (or reject) scholarship offers. Although an expensive option, it has the advantage of targeting funds on a specific student group, making them feel welcome and valued by the Department/Institution, and braking down the barriers of unfamiliarity. Melbourne University has run such a scheme in 1995 and 1996, in conjunction with offering students substantial relocation expenses (W. Kendig pers. comm.).

As with all of the above possible ways that could be used to try to increase student mobility, follow-up studies are required to determine whether they work and/or are cost effective.

## Summary

- The 1992 ARC Report is superficial in its treatment of postgraduate student mobility. It was based only of APRA statistics.
- The proportion of students that stay at the same institution is generally very high, but variable among Institutions.
- The reasons for a lack of student mobility are complex and include both historical, social and financial reasons.
- The proportion of interstate students, although low, is higher than those from other institutions in the same city, contrary to the proposal in the 1992 ARC Report.
- Ways of increasing mobility are unclear although using a variety of approaches may be most successful but need to be balanced against the costs involved.
- There is a need for more extensive studies to be undertaken on the factors contributing to lack of student mobility and ways that it might be economically increased.
- Future studies could also profitably examine whether or not postgraduate mobility directly affects quality of training as assessed by standard indicators (research outcomes. e.g. completion rates, completion times, publications) as opposed to more subtle ways (which may have a longer-term affects, e.g. research outlook).

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# QUALITY: IMPERATIVE, DISCIPLINE, ASPIRATION

Paul Corcoran & Ann-Marie Priest

***Quality in Postgraduate Research—Is it Happening?***

## I. Imperatives

**RESEARCH** in Australian universities has gradually evolved into a complex disciplinary regime. In a strategic discourse of command and surveillance, 'research activity' is defined by governmental authority as simply one among many cost-benefit regimes monitored by policy protocols. Research is initiated, oriented to goals, serviced, reviewed, intensified or discouraged, evaluated, continued or discontinued.

Command and surveillance occur in two closely related spheres. A normative discourse of command—What research is worth doing, where, by whom?—is sublimated as decisions about resource allocation. Students, academics and university administration are voices in a fragmented debate about research priorities, funding levels and desired outcomes, but the issues are resolved by funding bodies external to universities. Within universities, there is a pragmatic discourse of surveillance by officials whose imperatives are deemed to be merely facilitative, infrastructural, quantitative and external to the substantive research. Just get the students through to a Ph.D. in three years and try to keep them happy.

To use a traditional ethical vocabulary, discussion about postgraduate research in contemporary Australia is pragmatic, instrumental and utilitarian. Research in its various aspects is 'good' if it can be shown that optimal cost and reliability standards are met and pre-determined 'outcomes' are achieved. In such a discussion, qualitative considerations are inappropriate. For example, it is acceptable to talk about a postgraduate programme that has strategies to establish 'world-class research equipment and facilities' and an 'excellent' student services and counselling component. It is *not* acceptable to formulate a strategy to recruit the finest staff with salary premiums and the most talented students with élite scholarships.

It is, therefore, nearly impossible to talk about research with reference to the qualitative capacities of the actual students and staff, or to their actual, substantive research attainments. Indeed, the 'site' of discourse is elsewhere, and about other things. This conference is, we suggest, such a site.

In the wider context of the 'quality research' discourse, universities are considered to be organisations that produce goods and services for a clientele.[1] If a university is properly managed it will 'satisfy' individual consumers. This will, in the aggregate, contribute in tangible ways to the economy and intangible ways to national culture. The logic of these assumptions, if left scrupulously unexamined,[2] has led many 'education sector service providers' to suppose that these products may be subjected to quality controls and other standard measures of uniformity and reliability. If an 'enterprising' university expands its product range innovatively and markets it efficiently, it will enhance its funding base and prestige in the industry. Performance audits will conclude that these dynamic institutions set benchmarks of educational 'best practice.' This squares the circle by equating performance criteria with normative criteria: *quality in research*.

### Marketing Education

We argue in this paper that the market model of higher education is both flawed in logic and empirically undescriptive. The market model is as narrow and deficient with respect to Australian universities and scholarly research as it is for

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[1] We take for granted that the discourse of higher education policy, including research, is an elaboration of market concepts articulated in the organisational and managerial vocabulary of market enterprises. The aptness of this assumption is illustrated weekly in the Higher Education section of *The Australian*, and is a reflection of the managerial concepts and structures touted in university press releases, reports, publications and internal communications. These in turn are absorptions from the official vernacular of budget planning, funding applications, regulations, guidelines, review forms, research grant protocols and programme audits.

[2] The logical, ethical and psychological dimensions of 'satisfaction' are obscure, even if satisfaction is quantified by surveys or measures of 'repeat purchasing.' To suppose that human learning, intellectual maturity and the stimulation of a desire to question, explore and create are things that may be produced, purchased and consumed is to reveal a woeful, uncivilised poverty of imagination. Bentham's calculus of felicity has been routinely ridiculed, but this has not stopped people from emulating him. Neither the nation's economy nor its culture is obviously enriched by pharmacological research that is sold, licensed or franchised to multi-national pharmaceutical companies.

other communities and society at large.[3] Indeed, in view of the overwhelming influence of DEET it is almost ludicrous to employ laissez-faire market models as analogies for describing, much less reshaping, Australian universities. The federal government's acknowledged policy is centralisation, uniformity and vertical accountability. Its procedures are capital funding, official research priorities and variably funded student quotas. The extensive Canberra-based bureaucratic culture of higher education control (HECS, CPA, ARC, Quality Audits *inter alia*) and policy-driven resourcing and review are far closer to a command model than to a market model of supply and demand.

This is not to argue that the market model does not 'work' as a framework of organisation for certain kinds of academic activity. Rather, we ask a separate question, namely, whether the activity so produced is *what you want*. It is entirely possible, indeed it is almost a truism, that a market approach to education will produce cheap trade. Markets are renowned for low-cost, mass production of goods and services whose qualities will inevitably tend to uniformity and mediocrity. Markets do this, it would appear, better than any other system of production.[4] However, if the desired aim is to foster research of a *high* quality—research that advances the frontiers of scholarly and scientific disciplines, research that gains international notice for its originality, its overthrowing of old paradigms, its profoundly controversial and path-breaking qualities—then a market model of 'education provision' is not obviously promising.

What *alternative* models are promising is a more difficult question. The question posed by this conference—*Quality Research, Is It Happening?*—invites a more modest survey of the constraints, achievements and prospects of *existing* conditions. Proposing alternatives is an appealing undertaking beyond the boundaries of this paper, which extend only to provoking such an inquiry.

## II. Disciplines

### Diversity & Scale

Even the traditional institutional and disciplinary practices of research vary along many different dimensions of scale, locale, cost, activity and social disposition.

- *Physics*, *mathematics* and *astronomy* work to a different pace and practical constraints than *engineering* and applied sciences. The sciences work to discover, create and accept what is new.
- The *humanities* often—though not always—help us to understand, preserve and value the past.
- The *social sciences* frequently question, indict and even ridicule the contemporary values and institutions that define and constrain our daily lives.
- *Law*, *economics* and *commerce* depend upon professional, industrial and other 'real world' practices for their relevance and vitality.
- *Classics*, *philosophy* and *history* often depend upon quiet isolation, contemplation, musty archives and ancient canons of analysis and expression.

There are other conflicting and incommensurable diversities of university research. It 'happens' in crowded, hierarchical, expensive molecular biology laboratories at great, old universities; in lonely isolation in the basement archive of a library; in part-time research by mature-age students looking for a new career; in clinics or engineering firms where a student's Ph.D. project is indistinguishable from 'real world' employment; in a remote 'learning site' via e-mail and the World Wide Web.

There are new, striving universities where research is a talisman of status, and where more staff than students are working on a Ph.D. There are old 'established' universities, where research is a jealous preserve and a basis for claims of privilege. These differences are mirrored within the prestigious universities by active antagonisms between new and old disciplines, or disciplines formerly identified with institutes and CAEs. Here are the internal battle lines, pitting traditional disciplines and powerful faculties with endowments, prestige, and special funding lines against new disciplines boasting their relevance, innovation and buoyant student enrolments. Among the latter are areas such as women's studies, Aboriginal studies and the performing arts, where there may be profound alienation from the canons, assumptions and prejudices woven through the traditionally male, traditionally Christian, traditionally Western university.

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[3] To take only the most obvious example, the 'demand' for university places *declines* when the economy rapidly grows. We do not intend to engage in the common ideological debates about 'economic rationalism.' Our point here is simply that market metaphors for university education and research are strained and inexact. When the analogy is imposed, as it has been, these strains fundamentally weaken and change university life and work.

[4] As evidence for this hypothesis, you may read at your leisure the employment and degree programme advertisements in the weekly Higher Education section of *The Australian*. Do not overlook the uniformity and mediocrity of the slogans and logos adorning these display ads.

## Complexity, Tradition & Effects

University research, when examined close at hand rather than reified as an 'institutional practice,' is a highly complex and rapidly diversifying range of scientific and scholarly endeavours. Research runs from the purely intellectual to the practicalities of engineering, medicine, warfare and other expensive disciplines. Research—*philosophy* as it was generally known two centuries ago—has a venerable tradition, and its efflorescence since the nineteenth century has enjoyed enormous prestige and power.

Traditionally, the research most highly prized by scholars has been 'pure' research: the disinterested pursuit of knowledge. It is only in this century, in large-scale private industry, that corporatised, applied research has evolved as a strategy for market ascendancy (productivity and profit) or as a goal-oriented effort to bring 'products' (both goods and services) onto a market. Yet scientific and technical research has also rendered obsolete many forms of manufacturing, trades and services, eliminating entire industries from the marketplace. This practical effect was not foreseen, much less intended or planned, by either governments or universities, or indeed anyone else.

University research has never been organised and funded as a market factor, or for a market aim.[5] On the contrary, scholarly and scientific research—in its subject matter, its methods and standards, in the kind of people who engage in it—has been esoteric, insular and intensely impractical. Typically it has been supported by patronage, philanthropy, strong personal commitment and intellectual dedication.

This esotericism has been an essential part of the way research has been perceived for centuries. Scholars and researchers, far from being seen as practical and efficient in the utilitarian sense, have been caricatured in literature, drama, film, television and the popular press. They appear as muddle-headed, silly, eccentric, possibly mad misfits. They are fascinated by things of incomprehensible abstractness or triviality. We are still today, invariably, called 'boffins' in the national press, even in the pages supposedly dedicated to acknowledging our importance. The word *academic* is used, even by those so employed, as a term of contempt and abuse for what is deprecated as technical, inessential or simply bloody-minded.

However, the image currently being generated—the market-sensitive entrepreneur—is not obviously preferable. Are we not entitled to ask whether Canberra's bureaucracy is a likely source of salvation from these centuries-old stereotypes and, in turn, whether DEET (or indeed the Australian economy) is a likely exemplar of market models and efficient corporate management? Even if such a conversion could be effected, with a consequent elevation in public esteem, its desirability is a separate question. It does not convincingly follow that the valued qualities of scholarship, research and postgraduate study will survive such a transformation.

For example, it is certainly arguable that the Dawkins mergers and amalgamations of tertiary institutions, which purported to transform them all into universities, have in fact transformed them all into polytechnics. Indeed this may well have been (and may still be) the aim. This is reflected in the continued perception that it is the task of universities to be more oriented to skills and training, and directly 'linked' to the technical and personnel needs of industry.

It is far from clear that the *quality* of research is determined, as such models imply, by the euphemistic metaphors of 'benchmark' controls or performance 'indicators.' Indeed, the quality of research is in important respects distinct from its effects.

For a half-century debate has ensued as to whether the researchers who split the atom were morally culpable for the devastating effects of bombing Hiroshima and Nagasaki. Yet no one has argued that the scientists at Los Alamos conducted poor quality research, any more than one would argue that it would have been *good* if they had done *bad* research. In passing we note the quality of the scientists who carried out this work,[6] the urgent time frames, strict administrative oversight, unlimited budget and enthusiastic accountability to government policy directives. These scientists were criticised, after the fact, for their willingness to be so directed; but this again was a separate issue from any qualitative assessment of the brilliance, originality, efficiency and success of the research itself. The bomb 'happened.'

## Mandating Quality

How, amidst this complexity, is one to define 'quality research'? Where is one to find it? Who is doing it?

These are not idle questions. In all Australian universities, elaborate regimes of surveillance are now 'in place' to answer these questions. That is to say, forms have been devised. Their distribution, consultation, completion, signed affirmation and submission are compulsory. As anyone who has filed an ARC grant application knows, 'submission' is a profoundly appropriate term. It is official policy that these formal

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[5] The only example of organised, fully funded university research has been for weapon systems and related strategic technology. Even research in medicine and agriculture has been traditionally funded by philanthropy.

[6] The senior researchers were celebrated academic scientists and mathematicians, but the many young staff had no 'track record' and were chosen by their elders on the basis of intellectual brilliance. None had any experience in building bombs.

procedures monitor, regulate, compel, sanction, reward and inform future policy. 'Quality' in these terms of minimum conditions, standards and services is *mandatory*.

Only a fool or a cynic would argue that a regime of abstract performance criteria guarantees, much less constitutes, quality *research*.[7] However, universities have recently taken that easy, seductive step of faulty logic, concluding that a satisfactory audit of procedures is a register of 'quality.' On this slippery path a deficiency on such a test recommends—for practical purposes *prescribes*—guidelines and new disciplinary regimes on the royal road to procedural quality. Yet if we apply a reliable test of reverse logic,[8] a massively funded, high-profile 'quality audit' of university research almost certainly reflects a conviction of its paucity.

## III. Aspirations

While academics contend with new market and managerial models of research, many postgraduate research students question the legitimacy of traditional disciplinary conceptions of quality in postgraduate research. Postgraduates, no less than professional academics, must submit to externally determined policies and resourcing in their quest for admission, research scholarships and assistantships. More directly, they must also submit to the definitions and canons of 'quality' research within their discipline. Here the postgraduate researcher is positioned as a neophyte and a subordinate by the discourses that define a relevant research topic, an appropriate methodology and satisfactory progress. Traditional disciplinary conceptions of quality in postgraduate research privilege certain kinds of research and exclude others. From the perspective of the research student—especially a student from an unconventional background or with extracurricular responsibilities—these traditional disciplinary conceptions can constrain quality in research quite as much as they enable it.

### Walls & Fields

The postgraduate researcher faces a formidable barricade dating at least to the Middle Ages. Only 'appropriately' qualified degree recipients in a field may be admitted as initiates to research. The work will be judged narrowly on the basis of its exhibiting conceptual mastery, tangible discoveries and a creative impact (in evidence, theory or method) upon the discipline in which it is carried out. This view implies, in either a strong or weak sense, that only adepts of that discipline are capable of making an informed and worthwhile evaluation.[9]

There also remains a strong tradition that quality research can only be identified by its substantive yield, with little notice and no reward for the time and personal effort involved. The research skills, knowledge and experience gained by the higher degree candidate are valued only if they result in a pre-determined 'quality' outcome defined in the terms laid out above. Indeed, there is a growing prejudice against laborious trial and error and refined craftsmanship. If it can't be done full-time in three years, it's not 'worth it.' For some students, even a successful assault upon this rampart may not seem worth the effort for personal, economic or intellectual reasons.

Quality research must bear the hallmarks of painstaking accuracy of observation, originality of analysis, scholarly craftsmanship and intellectual integrity in presentation. This essentially Western idea, typically identified as 'scientific,' emphasises the capacities, autonomy and responsibility of individuals. It insists upon discovery, advancing the general and theoretical comprehension of a field of empirical study, and the accumulation of new knowledge uncovered (in the field or by methodical experiment) and classified by the researcher. Originality thus conceived remains the ideal in academic publications and postgraduate theses, and is deemed to subsist in every dimension of scholarly disciplines: in research design, methodology, experimental technique, data, argument, and style of presentation.

The 'original research' such ideas produce is nevertheless predictable. Its originality is a function of the traditions of the discipline in which it is grounded. Such traditions make of each discipline a fortress, a formidable rampart which protects some but alienates others. The rampart is built over time, through the cumulative effects of generations of researchers

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[7] This point is perhaps acknowledged by the recent focus of university regulations, guidelines and review protocols on *supervision*—the performance of the postgraduate supervisor and department—rather than the student's research. The University of Adelaide's 'Code of Practice for Maintaining and Monitoring Academic Quality and Standards in Higher Degrees' (1991), in codifying 'Responsibilities,' devotes 32 lines to the university, 31 to the department, 42 to the supervisor and 20 to the student.

[8] A sign in the country saying "4-Wheel Drive Vehicles Not Allowed" is a reliable indicator that 4-wheel drive vehicles are there in abundance. Legions of linguists (and postmodernists) are available to insist that the 'significance' of a sign rests not in its 'truth' but in its force of opposition. It would be absurd to shout 'Quiet!' in a silent room, but meaningful (though not necessarily effective) in a noisy room. The same might well be true for those who shout 'Quality!'

[9] Such a view does not imply that one's peers (or seniors) are infallible, disinterested or saintly. We all have peers and know that such a requirement is absurd. On the other hand, this stipulation does not imply that one's peers are fools or villains.

and students. Each researcher adds a brick to those already in place, using the established tools of the discipline to mortar it securely.[10] The postgraduate researcher is shown the next most obvious gap in the wall ('advancing the general and theoretical comprehension of a field of empirical study') and invited to place an appropriately shaped brick there ('tangible results'). The student's research, however original, is constrained by the size of the gap in the wall (the traditional field of study), the building materials (traditional research design and methodology), and the coursing of the bricks which have been placed there by those (masters and apprentices) who came before. Thus what may have begun as an assault on the barricade ends up as impressed labour to strengthen it: 'just another brick in the wall.'

There is much to be said for the quality of this kind of academic endeavour.[11] However, the postgraduate 'bricklayer' is unlikely to conduct research that questions traditional disciplinary knowledge and methodologies. Traditional paradigms are unlikely to foster the kind of research which, to extend the metaphor, aims at chipping away the mortar between the bricks or, indeed, building entirely new structures. A researcher interested in critically examining the materials which have so far been used, or the effects of excluding other materials, faces obvious problems at every stage of research. She must first win the support of a prospective supervisor, and then the approval of the department and university in which she wants to study. Having surmounted these obstacles, she must then win the approval of examiners, the gate-keepers of academe who are the last line of defence, the final bastion against those who might threaten what is good, original, quality research.

The traditional conception of quality in research—the apprentice being guided to independence and autonomous discovery—has implications not just for the kind of research which will be produced but for the kind of researcher who will produce it. In this model, research students are seen as people who work under what amounts to private tutelage to produce original research. Knowing that they can presume upon their 'master' and upon the university which bestows a scholarship upon them for only so long, they must be committed to their research and prepared to make short-term sacrifices of income and quality of life in order to complete their research as a pre-requisite to longer-term professional goals. This implies that a student's identity as a researcher subsumes his or her other identities: as a member of other communities, for example, or as an employee, parent, child or spouse.

Of course, this view of the ideal research student is bound to clash with the realities of contemporary postgraduate student life and the institutional pressures on research. The already paradoxical conception of the student as 'autonomous pupil' doesn't take into account the many relationships which have an impact on the researcher's work: with supervisors and departments; with other postgraduate students; with partners and families; and with colleagues outside the university. A student who is not willing or able to make the sacrifices required by full-time on-campus research, for example, may find herself locked out of the fortress: automatically excluded from the privileges and perquisites of 'normal' consideration, left out of networks and overlooked for entry-level teaching posts. Similarly, a part-time student may be seen as a difficult exception who must undertake the Pyrrhic task of proving herself worthy of 'special' attention. How will such a student avoid being labelled a 'problem' in the ordinary discourse of academic paper shuffling?

Despite the strength of the academic fortress, however, research grounded in critique—of existing disciplines and established methodologies—does happen. Postmodern and poststructural theories of critique and subversion constitute a powerful new disciplinary movement. In this work the hall-marks of good research are fragmentations and deconstructions along the fault-lines of great academic battlements, rather than conformity, uniformity and the aged patch-work of 'progressive' reinforcements.

This kind of research often takes the form of a playfully subversive engagement with traditional methods. While traditional research methods prize independence and autonomy—the researcher as hero, as Nobel Prize winner—postmodern research develops methods which emphasise the inter-subjective relationship between the researcher and the field of inquiry. Will this be recognised as 'quality' research by examiners and supervisors operating within traditional paradigms? A 'postmodern' research thesis may be challenged and deemed to be of poor quality because it risks its own coherence in order to expose the doubtful coherence of traditional

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10 R.C. Holub, *Reception Theory: A Critical Introduction* (London: Methuen, 1984), p. 5, draws on Thomas Kuhn's well-known thesis on 'normal science' as distinct from scientific revolutions. Within the scientific disciplines there are "long periods of 'normal' science, when scientists do more or less routine investigations according to established practices. During these periods there is a relative scarcity of competing paradigms. A single paradigm dominates, and it is validated and almost universally accepted by the scientific community."

11 Given its traditional primacy and undoubted success in the scientific disciplines, there is no need to defend or elaborate this success here, except to note in passing the challenges to this tradition discussed in the early pages of this paper.

academic discourse.[12] Yet such a venture, by refusing the authority which academic texts traditionally arrogate to themselves, opens up new perspectives.

## Negotiating Quality

The relationship between supervisor and student implied by postmodern research will almost certainly be at odds with existing forms of supervision. Traditional research canons are based upon a hierarchical relationship between supervisor and student. The supervisor, presumed to be the master, serves as a guardian of quality in research and a guide for the student's gradual progress towards it.[13] Within postmodern research, this hierarchy will be contested. Supervision will take the form of debate or, at best, conversation. Student and supervisor—no longer pupil and master, but rather discursive opponents—collaborate, compete and negotiate a 'field' that is mutually acknowledged *not* to be level, fair or equitable.

The traditional model of postgraduate research assumes a degree of consensus within each discipline about what constitutes quality or excellence. Right across the university system, supervisors and examiners of theses are assumed—indeed they are formally *obliged*—to have substantially identical expectations of, and criteria for determining, 'quality.'[14] The use of external examiners is intended to guarantee that research students will be judged fairly and consistently by these criteria. What is also guaranteed, however, is that these criteria will be abstract, mystified and conservative.

Traditional conceptions of quality will inevitably introduce tension and a resistance to postgraduate research that is radically new. Paradoxically, criteria of originality may inhibit innovative challenges conceived by students whose positions and purposes do not conform to traditional methods. A student whose research involves a sustained critique of an existing body of knowledge must overcome traditional expectations that quality in research is satisfied by filling in gaps with ordinary bricks. Why not stuff those gaps with explosives? Is the purpose of research to fortify and defend, or to open up new paths and admit entry?

Do traditional disciplinary definitions of quality in research exclude and inhibit the development of other, more radical forms of research? It is difficult to give examples of research that has not been done. What might medicine look like if nutrition and naturopathy had not been excluded for so long? How different might economic theory be if, as one feminist economist has recently suggested, the focus of economists had been on abundance and connectedness rather than on scarcity and competition?[15] Nevertheless, the force of innovation is inescapable. Strong, effective and influential critiques of dominant paradigms are celebrated eventually, if not initially. Walls are made sturdy and tall, but also razed or surmounted.

Methods of defining, supervising and achieving quality in postgraduate research seem to be self-evident necessities. In this process, *who* defines quality is as important as *how* it is defined. The distinction between *who* and *how* will never be transparent and complete any more than the definition of *what* quality is will be definitive and satisfactory. Yet these matters are inevitably crucial topics of disciplinary conversation. It is our contention that this debate about quality in research can only take place at the intersection of the *who* and the *how*, that is, in the basic practices of research where it actually happens, rather than in the education market-place or in institutional regimes established to promote political imperatives.

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12 An obvious example is the now celebrated psychoanalyst, linguist and philosopher Luce Irigaray's *Speculum of the Other Woman*, Gillian C. Gill trans. [Ithaca, N.Y.: Cornell University Press, 1985]. Originally a thesis rejected as not conforming to traditional academic standards by her mentors at the Sorbonne, this work has become a provocative classic in feminist theory and the psychoanalytic interpretation of literary texts. Irigaray was expelled from her teaching position at the University of Paris VIII (Vincennes) following the publication of her thesis.

13 "The relationship between a student and a supervisor is a peculiarly close one. They start as master and pupil and ideally end up as almost equal colleagues." This observation appeared in a report commissioned by the Science and Engineering Research Council of Great Britain in Sir Derman Christopherson *et al*., "Research Student and Supervisor: A Discussion Document on Good Supervisory practice," [Department of Engineering, University College Swansea, University of Wales, n.d.), p. 12.

14 Most Australian universities publish the common criteria of significance, originality and scholarly excellence for the award of the Ph.D. These standards are typically codified and sent to examiners of Ph.D. theses as the basis for examining and recommending the award of the degree. See "Examination Procedures for Higher Degree Theses," AVCC 1996, unpublished review of procedures at seven Australian universities. The University of Sydney's principal criteria of assessment for all disciplines are typical: "Original and significant contribution to knowledge. Evidence of originality by the discovery of new facts [*sic*] and by exercising independent critical ability. Literary presentation must be satisfactory. Suitable for publication."

15 Myra H. Strober, "Feminist Economics: What's It All About?" The Downing Oration (Melbourne University: Faculty of Economics and Commerce, 12 September 1995).

## Conclusion

We have argued that quality research is conceptually incompatible with the discipline of a regime. There are no convincing precedents for the idea that educational and research excellence may be produced by command and market imperatives carried out by managerial regimes of control. What arises, instead, is a reified discourse of quality in a closed loop of self-reinforcing procedures of justification.

We also argue that the disciplines of academe have inherent tendencies to stultify research. Traditional disciplinary canons must be open to critical—even ostensibly subversive—methods of scholarly and scientific inquiry. Should there be any other criterion of a discipline's survival? Any other measure of its strength and vitality?

Disciplines will survive and even be reinvigorated by challenges to method, self-interest and blinkered custom. It is far less likely that quality research can be preserved in a social environment fundamentally inimical to the integrity of academic disciplines and the pursuit of excellence. Institutional or bureaucratic fiat, relegation to the market, disciplinary conservatism, or sheer capitulation to political imperatives threaten not only the existence of one's discipline or career, but also the survival of quality research.

**17.4.96**

**This *unfathomable* thing called supervision: negotiating better working relationships with supervisors**

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**Abstract:** The varied and complex issues of postgraduate research supervision have now received considerable coverage in the literature (D. & K. Battersby, 1980; Powles, 1988 & 1994; Moses, 1984, 1988 &1990; Ballard & Clanchy, 1993; Parry & Hayden, 1994; Cullen et al, 1994; Acker et al ,1994). Special attention has been given to reviewing supervisors' current practices and procedures, to improving practice, to initiating development workshops, training programs and so forth (Welsh, 1982; Christopherson et al, 1983; Connell, 1985; Ballard & Clanchy, 1991; Conrad, 1992; Moses, 1985 &1992; Nightingale, 1992; Powles, 1993; Russell, 1994; Whittle, 1994; Willcoxson, 1994). It is important that this push to increase the effectiveness of supervisors to supervise continues. It is also time to consider whether students themselves could contribute more to improving their supervisory conditions. This paper looks at some reasons why students might feel unable to contribute and what they gain in becoming more active on their own behalf. It also proposes strategies for expanding students' information base that leave them in a stronger position to negotiate the terms of their supervisory relationships.

## This *unfathomable* thing called supervision: negotiating better working relationships with supervisors

Supervision has been a 'hot' topic on the postgraduate research agenda in recent years. This reflects the high importance of the supervisory relationship in completion of research theses and completion on time, as well as the dissatisfaction sometimes voiced by students about their supervisory experiences. The varied and complex issues of postgraduate research supervision have now received considerable coverage in the literature (D. & K. Battersby, 1980; Powles, 1988 & 1994; Moses, 1984, 1988 &1990; Ballard & Clanchy, 1993; Parry & Hayden, 1994; Cullen et al, 1994; Acker et al ,1994). Special attention has been given to reviewing supervisors' current practices and procedures, to improving practice, to initiating development workshops, training programs and so forth (Welsh, 1982; Christopherson et al, 1983; Connell, 1985; Ballard & Clanchy, 1991; Conrad, 1992; Moses, 1985 &1992; Nightingale, 1992; Powles, 1993; Russell, 1994; Whittle, 1994; Willcoxson, 1994). Expansive manuals detailing procedures for conducting residential workshop programs on postgraduate supervision, such as that edited by Zuber-Skerritt, have also appeared (1992). In short, there's been extensive scrutiny of the subject in the literature.

The push behind the more 'practical' literature has been to increase the effectiveness of supervisors to supervise. Listening to conference participants detail the various initiatives they have introduced in their respective universities also reinforces my impression of focussed attention on the supervisor. It is important that this push to improve supervisory practice continues. It's also reasonable to ask what students themselves might be able to contribute to this two-way relationship. The question is though, whether students *can* take a more active role in determining what goes on in supervision, given the unequal power relations of which they are often acutely aware, particularly in the early stages of their degrees. Further questions are: if they can, why haven't they? what might be the value for students in their becoming more active on their own behalf? and what can be done to help them in this ?

These questions have arisen from my advisory work with research students during the past five years. The questioning began, however, with submission of my own PhD and the realization of how much time I'd lost because of my own inefficiencies, often due to ignorance of a procedural kind. Since then, I've heard many completing PhDs express the same view. Only when it is all over do we become aware of how best to proceed, not only with the research and writing but also with a range of academic matters including handling supervision. There is not much comfort in knowing retrospectively. Some of this knowledge might be put to good use in future research projects, but most of us (there are a crazy few) will never again do a PhD. It can be argued that developing more efficient procedural, research and writing strategies (often by osmosis) is an integral learning component of the PhD. That is, we learn by doing, which, in a sense, is true. But there is now increased pressure for students to complete within three years which, in turn, accentuates the need to develop procedural efficiency in different contexts of operation as early as possible. This is at a time when there have been huge increases in research degree enrolments (*National Report on Australia's Higher Education Sector* 1992). Just when students might be needing more assistance, supervisors are under greater pressure as the PhD becomes mass education.

It can be difficult for newly enrolled research students to identify what they should be focussing on and finding out about in the initial stages of the degree; after all they have not done a PhD before. Their *know-how,* or to dress this up a bit, *procedural knowledge* often proves insufficient in a variety of situations. *Know-how*, *savvy*, call it what we will, is something we all need to operate effectively in our systems, something which takes time to build-up, often a long time. My interest in procedural knowledge (or lack thereof) was sparked by a desire to identify strategies to help students short-cut the circuitous *know-how* route in a variety of situations, including that of supervision. That's one value for students: knowing up front may forestall potential problems that impact on the supervisory relationship.

There are of course different levels of procedural ignorance about supervision and supervisory relationships (eg the different situations of international students, Australians transferring from one university to another, those transferring from one

department or centre within a university to another, those continuing in the same department.) More specifically, an Australian student continuing to a PhD in the same department in which she has done a four year honours degree has advantages, in terms of procedural knowledge, over an international PhD student who is studying for the first time in a western (Australian) university. As well, some PhD students will have experienced prolonged, pure research supervision previously (Master Research); others, like those coming through honours into a PhD program, will not have. While most newly-enrolled PhD students (international and Australian) will have had some past experience of supervision, that experience is rarely adequate to handling the new supervisory situation before them.

Supervision tends to remain somewhat *unfathomable* to many students, something that they are subject to, or something that happens to them. Few of the many research students I have worked with see the supervisory relationship as a collaborative activity that can be negotiated, one in which they can have input in defining its terms, which is not to deny that many supervisory relationships work very well. That's another value for students: in learning to negotiate, they can begin to think of themselves as partners (not necessarily equal) in a supervisory endeavour in which their levels of dependency and self-reliance will fluctuate throughout the degree. The status of junior partner is not necessarily a handicap, and may be an advantage at times.

Negotiating in this context refers to students compromising on less important matters regarding supervision and persisting with those they consider essential to their well-being as researchers. Of course to know what to compromise on or persist with requires some prior knowledge of what supervision might entail. How can students proceed with confidence if they are unsure what to discuss with supervisors or potential supervisors? The remainder of this paper addresses this gap in procedural knowledge. It suggests some information needs of students and questions they need to answer or have answered to strengthen their negotiating positions. My objective is to get students thinking about supervision, so that do feel able to act. Students' sense of powerlessness may decrease as they become more knowledgeable about what questions to ask of themselves and others in the process of negotiating. Perhaps too they may be able to forestall finding themselves in some potentially unattractive supervisory situations where the inequality of existing power relations could prove intimidating.

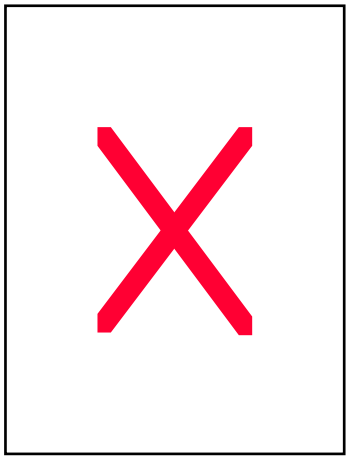
## *Selecting a supervisor*

Not all students will have equal say in who their supervisor will be. Some of the main factors affecting the degree of input are outlined below:

a university authority decides who the supervisor will be, or the choice of topic leaves only one supervisor suited to the task

students enter a research team headed by a senior academic responsible for supervising all students on that team

students' personal situations (eg relationship commitments) constrain choice of university, topic and supervisor



students will be asked to consult with a number of prospective supervisors before deciding on a supervisor in consultation with appropriate university authorities (eg departmental/centre heads)

students select a university (and perhaps a topic) because they want to work with a particular supervisor with whose research and reputation they are familiar

The degree of input may have little to do with whether or not a supervisory relationship works well. It's nevertheless useful for students to be aware of some of the constraints and opportunities inhering in their different personal and academic situations. It's also useful for students to recognize institutional constraints implicit in some of the supervisory relationships outlined above. The type of relationship they enter may, for example, constrain options for resolving serious conflict should this arise, as would be the case where there is no other member of staff able or willing to supervise the topic. It can also be difficult to move from one research team to another, but not impossible if the move is initiated early on because a student's research interests have shifted. All research students can benefit by doing a minimal amount of research before they undertake to study at any university . This could involve asking (in person, by post, fax or email) for information on the dominant research interests of a department or centre as well as the specific research interests of the staff of that department. They could also ask if there is a current staff publication list they might have. As many departments, faculties and universities now have home pages on the internet, which contain a substantial amount of information aimed at attracting research students, this is another useful research resource.

By such methods, students could determine the appropriateness of the fit between their own general research interests and those of the department they are thinking to enter. They should also be able to see whether or not replacement supervisors would be possible if their first choice were to prove unsuitable (or leave) once they were on course. The questions behind information gathering here are: am I choosing the best university given my research interests (assuming choice)? do I feel sympathetic to the dominant research interests of that department (could be important in terms of topic

choice, empirical or theoretical foci and so on)? is there a suitable supervisor available (and a possible replacement)?

Whether or not students know who their supervisors will be before they begin their degrees may depend on such factors as whether they've pinned down their topic. If they are in a position where they will be expected to track down their own supervisor once on course while also sorting out their topic, they will need to do further research on staff interests--to speak to as many likely supervisors as possible, weighing staff interests and temperaments against their own, while generating enthusiasm for their proposed research in potential supervisors. They may need to approach a number of senior departmental staff to help identify the best people to contact. Other PhDs in the department who have been on course for some time are also a useful source of information on who is interested in what around the place.

It is certainly desirable that there be a reasonable fit between students' research interests and the knowledge base and interest of staff members to supervise. But finding a content fit should not be a student's sole consideration in selecting a supervisor. Difficulties over ownership of knowledge may arise if the research interests of a student and supervisor are too closely aligned. Or it may prove more important for a student to ensure methodological or theoretical compatibility, or that the supervisor has broad understanding of disciplinary research issues and procedures, rather than expertise in the substantive content. Some very independent students do manage to progress well with supervisors who are not content specialists in their research fields, though this may not be ideal. There is also the case where a student may wish to diverge from the topic and/or methodological directions of a department they hope to enter, and could benefit by discussing up-front whether or not this might cause them problems. The point is that there are important choices to be made in selecting both a supervisor and a university for higher level research.

## *Clarifying supervisory needs*

Before students can know what they want from supervision they first need to reflect on their own strengths and weaknesses as researchers. Self-assessment is the first step in assessing others, in this case supervisors. Questions such as those below can help students begin to identify their supervisory needs. Being aware of the extent of supervision desired can be important when talking through the relationship with a supervisor or potential supervisor. Having this awareness can help students to determine whether there is likely to be a reasonable fit of expectations between themselves and the supervisor, what they might need to compromise on, or whether it might be better to look elsewhere for a supervisor so as to forestall long-term problems due to an obvious mismatch of expectations. At the extremes, this mismatch might involve a student desiring close direction and guidance at every stage and the supervisor expecting a highly independent role from the student; or a reverse situation where the supervisor expects to monitor closely the research and writing while the student wants to work very independently.

- **What are my research strengths and weaknesses as I see them?**

  (eg capacity for self-organization, setting goals, time management, independent research, motivation etc--be honest!)

- **What level of guidance or direction from my supervisor do I hope for in terms of:**

  - the literature search?
  - reading for and defining the topic?
  - developing research methods or experimental procedures?
  - organising and processing data?
  - producing texts such as research proposals, mid-term review papers, any presentations you might be asked to do as part of your postgraduate studies?
  - producing papers for conferences or for publication?
  - computing skills? statistics? data packages?

- **What level of critical input from my supervisor do I hope for during the writing of the thesis in terms of:**

  - overall organisation and layout of thesis?
  - structuring of individual chapters (eg Literature Review)?
  - ideas and their development ?
  - presentation details (referencing and bibliographies; grammar; expression; graphs and tables etc)?
  - final proofreading and editing?
  - English language support? (international students)*

* This is important and needs to be discussed early in the supervisory relationship. Second-language students may be able to get outside help from study skills or language and learning centres. They should visit these as early as possible in their course to see what help is available. These students do need to know **early on** who will take responsibility for assisting them with language and writing, as well as the final editing of their theses.

## *Approaching supervision*

Having reflected on their own needs, students might then ask: **what is the university's position on supervision?** Some universities will have formulated guidelines (possibly as a Policy Paper) on supervision. If there is a handbook of postgraduate studies, they will find such information there. If they are having difficulty finding out whether such guidelines exist or where they are located, they could ask a departmental head or secretary, faculty offices, the postgraduate student organization or the Dean of Students. These guidelines may have no formal status as rules, that is they cannot be enforced. Nevertheless, it is useful for students to know

the university's position on the mutual roles and responsibilities of students and supervisors, and to discuss these with the supervisor.

When meeting with a supervisor, students could enquire about any **future study leave or extended absences planned by the supervisor during the course of the degree.** It isn't always possible for supervisors to predict these, but it's worth asking if there are any long-term plans that may leave them without supervision. Whether this is known or not, they can ask if alternative, appropriate supervision could be arranged if necessary, within or outside the university.

At the same time, students might ask about **the regular commitments of the supervisor as regards research/teaching/supervision/administrative load?** Very heavy commitments are bound to affect time available for research supervision. If a student's style of working is highly independent, this might not matter. But where there is a need for close supervision and considerable guidance, heavy responsibilities on the part of a supervisor could signal difficulties in the relationship.

A **regular meetings schedule** also needs to be negotiated in advance. If students are in a laboratory situation, there are likely to be daily meetings, but not otherwise. Even then, lab meetings are not a substitute for regular formal meetings, as science postgraduates often report. Nor do many students seem comfortable with the suggestion that they can 'drop in anytime,' the complaint being that most times the 'drop-in' isn't suitable because the supervisor is too busy. While supervisors may be very busy, students should not have to feel guilty because they want to discuss their work. Further questions for students to ask are:

- will the frequency and duration of meetings change during the course of the degree (which means there will be a need to re-negotiate the schedule)?

- what are the supervisor's expectations of how these meetings should proceed? (ie will students be expected to set the discussion agenda? will this be negotiated between student and supervisor? or what?)

- will there be opportunities to meet *informally* --as part of becoming socialized into the discipline?

Students should keep a concise record of dates of meetings and what transpires in them. This is useful not only to survey the progress of meetings, but if disagreements or disputes should arise (see below).

Finally, in some cases (as at ANU), students will have a **panel of supervisors**, not a single supervisor. In this situation, they need to think about the following questions--perhaps talking some over with their principal supervisor: what criteria should be applied in selecting advisers? what use might be made of advisers on the panel? should drafts of the written work be given to all members of the panel or to the principal supervisor only? what should students do if there is disagreement among

panel members about their research design and procedure or if they get contradictory feedback on written work? will the full panel meet on occasion? if so, who will organize these meetings, and what might be the likely reasons for them?

## *Overviewing the degree*

Students should ask their supervisor or prospective supervisor, or some other appropriate authority, to outline for them **general <u>departmental</u> expectations of all research students in the department at various stages of the PhD degree** (eg producing research proposals, progress reports, mid-term reviews (or any other reviews), departmental seminar presentations and/or attendance, conference attendance and/or presentations, compulsory coursework, anything else). Once they have this overview, they can ask for more detail about the processes involved, as, for example, those of the mid-term review (eg what is the purpose of the mid-term review? what does this consist of? if papers are to be produced, how long and in what depth? who will these be given/presented to? if interviews are to take place, with whom and for what purposes?). A student's department or university may not have mid-term reviews, but it is likely to have some formal or semi-formal method of assessing whether the research is proceeding satisfactorily.

Knowing some key dates can be useful in trying to set up a **rough time-management plan** early on. In many situations of PhD research, it is very easy to lose track of time while focussed on particular tasks. Yet it is important to try to keep sight of the course as a whole if time is to be managed effectively. As poor time-management can stress both students and supervisors, it's a good idea for students to discuss the setting of long and short-term goals with their supervisor, working back from rough dates for submission of pieces of work throughout their degree. Research is indeed a very unpredictable endeavour, but this is no reason not to attempt a rough time plan that will be subject to adjustment throughout the degree.

## *Identifying and using the full resources of the university*

Key information here involves students finding out about their **resource entitlements**, and whether or not there is a departmental policy on this so that equity is ensured within the department. To find out their entitlements, students can ask their supervisor, departmental head, or a director of postgraduate studies about the departmental practice on allocation of room space; office furnishings; access to facilities and resources-- lab equipment, computers, services on the computer (eg e-mail, the internet, data packages--ask who pays for these); stationery; photocopying; phone; conference or field work funding; or other facilities and resources they hope to be able to access. By identifying early on their entitlements, students can ensure that they are accessing all resources available to them from the outset. Some students have reported that they were not informed of their full resource entitlements in their departments, only to discover much later that they had 'missed out.'

I don't yet know of any Australian university that has produced a policy guaranteeing equitable resource entitlements across the university. Students are therefore subject to

the entitlement practices of individual departments, with some being much better off financially than others, and students bearing the consequences. Those students dissatisfied with their resource situation could be directed to other bodies or people within the university for help in addressing their resource needs. For example, a student may have shared access only to a departmental computer but feels the need of his/her own computer in the final writing stages. The department may not be able to oblige but there may be a source on campus for cheap hiring of computers (at ANU, the Graduate School.) If on a scholarship, the fee for hire could be taken from scholarship money allotted to thesis production.

Just as the resource issue can strain the supervisory relationship, so too can over-dependence, given supervisors' frequently heavy workloads. Students can help here by using fully the **educational support services** available to them within their university. These may cover health and counselling services, academic support (including maths, statistics, language and writing), library, computer and information technology support, career counselling, support for students with disabilities, international student support, financial and legal advice (perhaps assistance), the services of the postgraduate students' association, and any other services. Making full use of these services when needed can ensure that students get expert advice and assistance from across the university. A university counsellor, for example, is trained to assist with a range of personal problems that may be affecting academic progress. Students should mention to their supervisors any difficulties preventing progress, but they don't need to rely on them for assistance with every problem.

## *Resolving conflict*

Many supervisory relationships work well, but not all do. The main problem areas seem to be:

- academic disagreements
- personality differences
- a misfit between the expectations supervisors and students have of each other

If there are tensions or difficulties in the relationship, a student should **do something quickly**--not let the problems escalate. While I don't think students should have to shoulder the responsibility for resolving problems, it is in their interests to take action if the supervisor doesn't. The supervisor may of course be unaware that the student is experiencing difficulties. To resolve problems, students can

- **talk to their supervisor initially (if they feel able)**

In preparing for this discussion, students might first try to identify precisely what it is they are unhappy about--think the problem(s) through. They could then make a list of any problems in point form, noting beside each point what they consider would be a solution to the problem (if they can see one).The next step would be to arrange a meeting with their supervisor, giving him/her a copy of these points and keeping a

copy for themselves. At the meeting, points would be discussed one by one. By identifying clearly problems (as they seem them) and possible solutions, the discussion with the supervisor is more likely to remain focused--not become diverted to other matters. A conversation of this type will often lead to quick resolution of problems.

- **seek outside help**

If students don't feel they can talk to their supervisors, or the meeting doesn't go well, then they need to get outside advice on what to do. Some possible sources of advice are: the departmental head (but they may prefer to talk to someone outside the department); language and learning support services; the Dean of Students or Faculty Deans; their postgraduate student organization. Perhaps they could talk to a few different people before making any final decisions about what to do.

If students decide that their best course is to **change supervisors,** they might be helped by considering the following:

- Changing supervisors *is* disruptive. If students are in the early stages of their degree, the disruption will be least. But if they are in the last year of the degree they might need to think carefully about taking this course of action, whatever the present difficulties.

- Students could get some outside advice on **how best to proceed** with the change. This is particularly needed when producing letters/documents giving reasons why they want to change. Even if a relationship has broken down because of personality conflict, students would do best to focus on the negative impact of this on their academic work. It is better to **detail advantages for their academic progress in changing supervisors** than to focus on personality problems.

- It will help the process of change if the student has already consulted with another staff member who is willing to be the new supervisor. If no other staff member were qualified and willing to supervise the research, change might be difficult to arrange.

- If students are looking for a new supervisor in another area of their university, they need to be sure the terms of their scholarship (if they have one) will allow this type of transfer. For example, if the scholarship is being funded by a specific department (not the government or university), it might be difficult, perhaps impossible, to transfer to a different department or centre because of financing.

- If students are international students on a scholarship, they will need to take particular care that in making such a change they will not be contravening the terms of that scholarship and/or conditions of study in Australia. They will therefore need to consult with appropriate government and academic authorities before taking this step.

In dealing with problems of supervision, students may be worried about speaking out, expressing criticisms or seeking outside help, because of being seen as troublemakers, and of the unknown (but suspected) repercussions to follow. If they have these concerns, they can ensure confidentiality when discussing their problems with university staff. At the beginning of any meeting, they can ask for assurance that what they have to say will remain confidential, that nothing they say will be repeated, and that no action will be taken without their prior approval.

Students may feel intimated by unequal power relations between themselves and their supervisors in trying to sort out problems. But it does not reflect well on the university, the department or the individual supervisor to have lengthy completion rates or students dropping out. Everyone wants them to get through. That is a power all students have from the moment they come on course.

## *Negotiating the supervisory relationship*

In advising new students on supervision, I am particularly concerned to help them become active negotiators on their own behalf. To assist them in this, I provide a handout of questions of the type covered in this paper, which we discuss and expand on if appropriate. This handout concludes with the suggestion that they might like to take the following steps:

**Step 1:** decide what your supervision needs are and what you would like further information about

**Step 2:** initiate discussion with your supervisor or prospective supervisor

**Step 3:** be prepared to **negotiate** (ie compromise on less important matters and persist with those considered essential) in discussing with your supervisor or prospective supervisor what you want from the relationship.

**Step 4:** be willing to **re-negotiate** the relationship as the need arises during the course of the degree

## *Conclusion*

In encouraging research students to become more active in negotiating the supervisory relationship, I hope to complement the work being done to improve supervisors' practice. If we keep tackling the problems shadowing supervision from different angles, then we are at least making progress towards the basic hope of every student: a productive supervisory relationship. Other researchers involved in graduate education may improve on the still marginal visibility afforded students in this paper. While all students approaching supervision can benefit by thinking about the

questions covered here, these questions constitute only a basic set. Because of students' diverse informational needs, many more questions are often generated when actually advising individuals on how to proceed with supervision.

Becoming an effective negotiator is challenging because the supervisory relationship is as complex and variable as human nature itself; it is not easy to fathom. When it works well the collaboration is exciting and productive despite the pressures to which this relationship is often subject. Some of these pressures are embedded in institutionalized power practices that are often very worrying to students, particularly where supervisors will have enormous influence on their future employment and career prospects, as is the case in some sciences. This is not in itself a reason to be intimidated into silence, but it is perhaps a sound reason for proceeding with caution in supervisory matters as students soon come to recognize. Being cautious though, should not prohibit students from becoming more active on their own behalf.

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# INSTITUTIONAL SUPPORT FOR THE RESEARCH STUDENT

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In order to justify any university based institutional support procedure for research students it is helpful to understand the specific role in a university to which the modern research student aspires from an historical perspective. The historical perspective takes us back to the medieval period of European culture since the university institution is the embodiment of an ancient tradition. Given that evolution has taken place there are still many relics of the medieval university to be found in our modern universities, from our present day degree structure to the ceremonial of graduation. In fact, the Australian university can be shown to be in direct lineal descent from its medieval archetype and that archetype was a peculiar indigenous construct of western Europe.

While it is possible to follow a pathway from the monastic culture of the early middle ages after the fall of Rome to the cathedral and episcopal schools in the form they took as a result of the Carolingian reform and thence to the universities of the twelfth century, the development is not unilinear (Leff, 1968), something novel having taken place from the twelfth century.

The university was the social invention which provided professional education for an increasingly urbanised population of western Europe. From the onset it had a primarily utilitarian purpose (Piltz, 1981). There were social processes which endeavoured to harness educational forces to serve the needs of the professions, the church and the state. The outcome was the university, which soon displaced the cathedral and episcopal schools. In some cases, for example in the instance of the university of Paris, the process can be traced with some exactitude (D'Insay, 1933).

From localised centres of professional learning the cathedral and episcopal schools had developed into the *studium generale* - a place of study (*studium)* which attracted students from beyond the local region (hence, *generale*). Only an eminent *studium,* provided with excellent masters and a good reputation could aspire to become *generale.*

The *studium generale* was also known as the *universitas* in the sense of a *universitas magistrorum et scholarium.* A *universitas* was an aggregate of persons with a common interest and independent legal status, a guild or corporation. A *universitas magistrorum et scholarium* was a guild with a common interest in education and given independent legal standing (Pare et al, 1933; Rashdall, 1936; Lesne, 1940). At times it was the *magistri* who regulated the institution; less often it was the *scholares.* Participation in such a guild provided entry into the upper echelons of the church, state administration, medicine and the law.

Until the late fourteenth century these *universitates* were unendowed. They used rented accommodation or the premises of religious orders. They hired manuscript books or had

parts cheaply transcribed. Thereby they acquired flexibility, able to move from place to place if circumstances required and able to eliminate less useful subjects from the curriculum without great expense. This chance characteristic ensured their viability and established the permanency of the social invention.

Within the solidarity of the *universitas* the student would cover the prescribed course which was broad and general within the professional area, specialisation being something that developed only in the nineteenth century, and thereby achieve the *baccalaureatus*. Beyond bachelor's status the student could aspire to more mature work and eventually become *licentiatus* or licensed to teach. Thus a *magister sacrae paginae* was licensed to teach the Christian scriptures and the *magister medicinae* was licensed to teach medicine. The new *magister* or master would undergo initiation rituals, during which the biretta or square cap and a gold ring would be bestowed, together with an open book. The new master would be subsequently invited to give the *inceptio* or commencing lecture.

The terms *magister* and *doctor* were used interchangeably in some medieval universities. But the broad designation of *doctor* implied the faculty member was acknowledged as the authority, in clear command of an academic area and one who attracted students. The presence of highly reputed *doctores* would give the medieval university a certain academic allure. They could be compared to religious teachers in other cultures known by titles such as *rabbi* or *guru.* Certain more eminent doctors were even given honorific titles appended to the *doctor* (such as *angelicus, illuminatus).*

We need to see where this social gradation corresponds to our modern university structure. Both *magistri* and *doctores* correspond to our present understanding of the master's degree and the PhD. The master's and doctor's degrees are today perceived as the license to teach as a member of a faculty, although that is certainly not the only reason why people today aspire to obtain the degrees. The PhD has been a rather late addition to the gradation. For example it was only in 1946 that the University of Melbourne introduced the PhD.

What emerges from this is that we have inherited, within our university institution, a social invention which is geared towards equipping graduates to deal with the empirical and theoretical problems of living in society, and which functions for utilitarian social need. However, while the main purpose of universities may be achieved by sending back into society such functionally prepared people there is also a need for the teaching and research group that will at least be capable of perpetuating the university itself. These are the equivalents of the *magistri* and the *doctores,* those who have demonstrated their ability to push forward the boundaries of knowledge. While some may still be destined for posts within the academic life of the university, others are required at other cutting edges of society. Not all *magistri* and *doctores* in the modern setting will be destined for the academic vocation but they will be expected to carry out equivalent tasks within a somewhat differently structured society.

In understanding the role of and the expectations vested in such *magistri* and *doctores* we come to understand at least something of the modern research student's pathway. *Magistri* and *doctores* are the potential faculty members, the role models of doing research. They are expected to have control of a paradigm of learning and be able to apply it to new situations, even to modify the paradigm. Research students, as potential *magistri* and *doctores,* are expected to be on the verge of acquiring self management: managing their own learning,

determining a path of study without a syllabus, without any interim formal assessment, gradually detaching themselves from the tutelage of a supervisor and being prey, as a result of these expectations, to discouragement and self-depreciation.

It is precisely this complex academic situation that any good management of research degree students seeks to regulate. Within the University of South Australia a *Code of Good Practice: Research Degrees Supervision* (1995) has set in place a compulsory 'structured program' to ensure that research students are given sufficient support during their candidature so as to establish these very self-management practices and to combat discouragement, the nemesis of any progress in higher education. Each faculty within the university is expected to implement the structured program in an approved fashion, according to the particular requirements of its student population.

At the beginning of 1995, after some experimentation with a structured program, the Faculty of Education submitted a *Research Degrees Management Plan* in which it proposed that in the first year of candidature, after the student had been introduced to the academic facilities of the university such as the library and information technology, there would be a series of four peer review sessions. A parallel program was instituted for external research students. By means of teleconferences these latter received orientation, an introduction to the external library facilities and instruction on the information technology available via modem. They also undertook the four peer review sessions by teleconference.

Each of the four peer review sessions took the form of a seminar or teleconference with small groups of around six research students, formed into a subgroup on the basis of shared educational area or shared methodology where possible, with a coordinator who was a seasoned academic and with supervisors, if feasible, in attendance. In successive sessions the student would cover one major aspect of a fully developed research proposal. The following are the four aspects of the proposal covered successively in the program:

Introducing and establishing a topic
Review of literature related to topic
Methodology to be used in topic
Ethical considerations relevant to topic

Within each subgroup there is expected to be peer review and constructive criticism. Prior to the seminar each research student prepares an outline which is then sent ahead of time to the others in the subgroup, including its coordinator and the student's own supervisor. Students are expected to have examined the outlines of all others in the group and to have prepared a constructive peer critique. Each in turn makes a brief presentation and then there is open discussion. Section by section the research proposal is refined by this process and finally approved by the supervisor.

It is intended that during the rather traumatic process of formulating a research proposal, which will eventually be submitted to a panel of Faculty academics for approval, the research student not only has the support of a supervisor, but is brought into regular contact with the Research Degrees Coordinator, a subgroup coordinator and a cohort of peers. This support becomes crucial as the proposal develops. The initial stages of formulating a topic which is self-chosen and self-directed are fraught with self-doubt for the student, and there is a need for supervisor and coordinator to give guidance. There is an advantage when the student is

aware that others are going through the same painful procedure and facing analogous problems.

The Faculty of Education also decided that appropriate support should be given to research students who had completed their research proposal and had entered the working phase of the thesis. The Faculty's *Research Degrees Management Plan* further states that each fulltime research student must make a presentation to peers twice a year. This procedure has previously been interpreted to require a series of seminars for internal students and teleconferences for external students. For these sessions students in turn would write a paper, distribute it ahead of the due date to peers within a subgroup, and then make a presentation to peers, supervisor and coordinator. The presentation could cover any substantial aspect of the thesis - statement of the research focus, a methodological presentation, a preliminary interpretation of data or even the airing of a perceived problem. The peers, who have already had access to the paper, would comment and make suggestions during the presentation.

The very achievement of educational self-management however caused difficulties with this second part of the research program covering the period after the first year. Towards the end of 1995 all research students were given a questionnaire designed to elicit comment on the structured program. The results were tabulated and used as a basis for redesigning the program.

In general, the response was that the first year program was invaluable in drafting the research proposal, that peer reviews were an excellent form of critique and that the program should be left intact. However, there was dissatisfaction with the program thereafter. Those advanced in their research on some rather refined aspect of educational knowledge had found that by the second year they were becoming more expert in their field and that soon, with a few exceptions, they were becoming more intellectually isolated from peers when placed in a small subgroup that did not homogeneously share their paradigm. Peer review in this limited setting was not so valuable.

It was decided that some flexibility should be introduced that would maintain the peer academic contact so valued by the research students but offer them more opportunities of finding such contact in a more homogeneous peer situation.

For entirely different reasons it had been decided in November 1995 that, as an adjunct to the research program, an 'Education Research Forum' would be held at the Magill campus. It would be open to all research students, although it was realised that external students would find it difficult or impossible in some cases to attend. Students were invited to present papers based on their research and the Forum was set up to resemble as closely as possible the format of a national academic conference. Abstracts were required for prior distribution to all participants; there were concomitant sessions; chairpersons were nominated with instructions on the protocol for conducting conference sessions. Apart from an opening address by the Dean of the Faculty and a closing address by an academic who spoke on practical aspects of the use of language in the writing of a thesis, the Forum was given over to the research students. It was marked by astute and well prepared presentations, vigorous debate and busy, informal discussion that was protracted outside the sessions.

The success of the Forum demonstrated a way ahead. Peer presentation would still be required in subsequent years of candidature, in line with the *Research Degrees Management*

*Plan*, but that presentation could be made either at the Faculty's Forum where like-minded groupings could more naturally form, or at a conference outside the university nominated by the research student, either national or international or, if the student preferred the previous format, at a seminar or teleconference that would be set up in much the same way as in former years. Most research students opted for the Forum or a nominated national or international conference. Those who still preferred the internal seminar or teleconference can be easily catered for.

In addition to the presentations, however, the program for students in subsequent years of the research degree would also offer three papers by established academics on broad topics related to research to which students would be invited but not required to be present. The same paper would be presented both internally by seminar and externally by teleconference. Papers for 1996 will actually cover a study of teachers acting as researchers, the actual writing of a thesis and the art of publication during and after thesis writing.

It is hoped that the network of supervisors, coordinators and peers, set up within the structure described above, will provide both the emotional and intellectual support required by research students. The outcome is intended to be the support required for the students' progress towards academic self-management, the ideal of the *magister* and *doctor*.

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# REALISING A RESEARCH DEGREE OF QUALITY: A NEW STRUCTURED PROFESSIONAL DOCTORATE

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## Research and the University

It is regarded as axiomatic that research is the distinguishing feature of the modern university in comparison with other educational institutions. Research is seen not as a discrete entity pursued by (some) staff as (part of) their work, but rather as something which runs through the fabric of university life. The 'research culture' is held to involve not just a valuing of research in terms of its activities and products, but to encompass a commitment in scholarly life to critique, debate, inquiry and impartiality. In this sense, research and teaching are intertwined in universities through the values they share and draw upon for their practice. Research and teaching are also intertwined through the universality of the policy and administrative practices of universities which embed research and teaching together (for example, academic boards, libraries, computer centres etc, each have teaching and research functions).

In many respects the doctoral degree has represented the pinnacle for the interrelatedness of teaching and research. Doctoral degrees are seen as 'research' degrees, which means ostensibly that there is no curriculum or teaching. But this is rather like saying that there is no research in 'coursework' degrees. 'Supervisors' are teachers in some respects, and the curriculum can be seen as research (methodology and practice) as well as the substantive field of enquiry. Administratively, supervision counts as 'teaching load' and is funded accordingly (indeed, it is funded at a higher rate than coursework in any given discipline area). In other respects, the 'products' of the doctoral work (theses, articles conference papers, etc) are counted as 'research; in the calculation of DEET research quanta and other measures of research performance.

However, while the traditional approach to doctoral degrees in Australia – derived from the British colonial heritage – is that they are entirely research degrees, in other parts of the world, for example North America, the traditional doctorate had been one of coursework and research. Australian 'traditional' doctoral students are generally on-campus, full-time, and have recently graduated with honours. There have always been part-time candidates for doctoral degrees in some (in) formal ways. For example, some university staff members have 'worked' full-time, but also been doctoral candidates at their university. However, in the past decades, and especially in more recent years, there has been a marked expansion in the opportunities for part-time doctoral study, and of the numbers of people who have seized these opportunities. In addition, for some years, both on-campus and dual mode (on-campus and off-campus) universities have been dealing with increasing numbers of part-time students who complete more of their research off-campus.

In Australia a 100% in higher degree by research enrolments is expected for the period 1990-1997. Within this expansion, doctoral students in Education are expected to increase by about 120% (Arts 100%, Science 87%) and one can expect that the bulk of this will be in part-time enrolments. In contrast, undergraduate enrolments in Australia are expected to increase by 20% for the same period. Despite the selection filters which apply to postgraduate research students entering universities, this broadening of the part-time student enrolment means that a

greater diversity of student needs, interests and contexts now prevails. This is especially the case where the forms of entry and forms of supervision are opened to allow students with a broader range of qualifications (often requiring professional experience) and a broader range of social, economic and geographical circumstances. In postgraduate research, supervisors may no longer find themselves supervising young students, who are fully committed to their research while they eke out their scholarships until graduation. It is now more likely that they will be dealing with students as old or older than themselves, who juggle work and family commitments alongside their research, and may well earn more than their supervisors. The shift in perspective required of supervisors is quite significant and means dealing with students more as colleagues than as 'students'. It also means dealing with some different candidature-orientations to the doctoral credential and to the research they wish to do. The potential for high quality postgraduate research, which both draws on the richness of the students' contexts and also seeks to address research questions and issues in those contexts, seems substantial.

**A new kind of research degree**

It is at this point that the Deakin EdD can be brought into the discussion as an example of staff, and the University more broadly, adjusting to the new demands and orientations for doctoral programs. Drawing on a previous paper (Evans and Green 1995), the EdD is distinguished from other similarly-designated doctoral programs by its distinctive character as a *research*-oriented degree. It combines a structured sequence of units (Phase 1) designed to inform and lead up to the presentation of a proposal document at a formally-constituted colloquium, with the development of a Research Folio (Phase 2). It differs from other higher degree research work, such as the PhD, by the distinctive nature of the Folio as an organised collection of original productions, as contrasted with the single document of the PhD dissertation. As well, the EdD involves a different understanding of research, its nature and purpose(s), and rather than directed towards making a 'significant contribution to knowledge' itself, is intended to contribute to and enhance *both* knowledge *and* practice in regard to the professional (educational) contexts of the candidates. In addition, the nature of the research 'project' which characterises 'traditional' postgraduate research work is necessarily different in the case of the EdD. Rather than focussed on, or addressed to, a research topic, in the conventional academic-intellectual sense, it is tied more directly to a specific place or site of educational-institutional work and its associated needs or problems which research can inform.

Brennan and Walker (1994) have discussed the origins of the EdD program and discussed the implications for matters such as supervision of the new program and its students. Subsequently there has been a considerable amount of development, refinement and elaboration of the program as the experience unfolds. For example, recently the first two candidates presented for examination. This prompted further policy elaboration of the Folio and related examination issues, which serves to clarify and consolidate the distinctive nature of the EdD. A significant part of this elaboration has concerned the nature of the research, and its relationship to the candidate's professional practice. At a conference in 1995 several of the staff involved in the program provided papers and presentations which reflected on various aspects of the EdD development (Evans & Green, 1995; Jeans, 1995; Reid, Stacey & Henry, 1995; Walker & Henry, 1995). This paper is part of a continuation of that project and deals with the issues of making the EdD a research degree, rather than a coursework plus research degree, which is the traditional form of EdDs nationally and internationally, and for professional doctorates generally.

In a previous paper Evans and Green (1995, pp 5-6) argue:

> A central claim in developing and defending the Ed D has been that it serves to 'challeng [e] understandings of supervision' in postgraduate studies (Brennan & Walker, 1994: 226). There are several aspects of this. Firstly it is highly significant that the focus of the work done towards the degree is on the specific albeit changing nature of the educational workplace, essentially one's own, at least professionally. That is to say, the emphasis is on educational practice, both as (and within) an organization and as (and within) a form of work. This means, further, that it is likely to be much more communal and collaborative than is the usual case with higher degree research, which tends to occur away from the worksite as such, or indeed the research site. By definition, students are likely to have more knowledge and experience regarding their own site(s) or work/research than is the usual case for postgraduate students, as well as in relation to their supervisors. Finally, given the differentiated nature of the Folio it may well be that a student works with several minor (or 'local') supervisors in the course of completing the degree, albeit under the general coordination of a major (or 'global') supervisor. What this means is that the relationship between student and supervisor(s) needs to be understood and indeed reconceptualised more in terms of 'negotiation' rather than 'direction', and moreover as less 'private and privatised' than is the usual case in postgraduate studies, which is a less hierarchical and more reciprocal structure of authority (Brennan & Walker, 1994; 227).

These observations are not just ones which have internal consequences within the program, indeed they were preceded by a range of academic and bureaucratic hurdles within Deakin University concerning the establishment of the EdD as a *research* degree. Prior to the EdD becoming formally recognised in 1992, the University's principal doctoral program was the PhD; the PhD was, and remains, a research degree of the traditional Australian kind outlined previously. In order to be established as a research degree the EdD needed to be accepted by the research decision-making structures of the University as being based on research and also, in effect, being equivalent to the PhD. Although there was considerable support for the University developing professional doctorates, it was not expected that they would be *research* degrees, but rather *coursework* degrees. The distinction was further sharpened by the DEET guidelines over the classification of such awards. The approval process unfolded as a rather protracted and contradictory affair. Faculty members who represented the case at various University meetings and committees formed the view that the structure and principles behind the EdD were very warmly received, but making the final decision to classify the degree as equivalent to a PhD seemed too courageous at the tine. Although the EdD was accepted, it was initially classified as *coursework* despite the fact that it did not have any coursework requirements and was clearly seen by those organising the program as being a *research* degree. In 1995, the program was officially reclassified within the University as a research degree without a quibble. There is an emerging view within the Faculty amongst those closest to the program that the EdD program is superior in quality to the PhD program, not just in terms of the carefully structured research experiences, thinking and debate which the students encounter, but also in terms of the quality research outcomes in professional contexts.

However, an emerging issue has been the name of the degree. As was mentioned previously, EdDs are generally seen as coursework degrees, there is now a concern that the degree should be retitled as something which signifies its research nature. Suggestions such as Doctor of Educational Research or Doctoral of Educational Research Science have been made. This is becoming more of a problem as the program is offered internationally where the status of coursework vs research degrees seems more crucial.

The naming of the degree is not just a matter of status, indeed for the course team and supervisors it is more a matter of ensuring that the distinctiveness of this research degree is appropriately designated, not just in relation to EdDs in general and other professional doctorates, but also in relation to PhDs at Deakin and elsewhere. A key distinction comes from making a virtue out of the professional and work contexts of the students. The workplace of the student is often the site of the research, or it is related to the research. This means that some of the resources required for the research are provided by and through the employer, rather than the university. The task is to blend the requirements of the degree with the needs or requirements of the workplace. The advantages in terms of relating research, theory and practice together are substantial. In this respect new forms of research degree might well be required more broadly that just in Education. The traditional PhD is often said to be a 'dust-collector' in a library collection. While this might not be entirely fair, there is an element of truth in the claim. What the EdD seeks to do through its portfolio is to include research products which have, or will have, an effect in the professional context or workplace of the candidate. This is something that the examiners are asked to address and, indeed, one of the three examiners has to be an appropriately qualified person from the broad professional context of the candidate.

For us this relationship to practice is an important component of the EdD research program. It seems potentially more worthwhile for us than the coursework degree such as those which several universities are considering of have implemented, However, for Deakin the coursework option was difficult to pursue for another quite practical reason. If there is one lesson which distance education has taught Deakin University and the distance education community over the past two or three decades, it is that quality course material development is expensive and only becomes feasible if there are sufficient numbers. Coursework Doctoral degrees in Australia have most (entirely?) been on-campus, part-time courses. Yet as we have seen, the major need is for courses which relate to the needs and contexts of professional people and this usually means that forms of regular on-campus study are impractical for most. (Summer schools and other occasional on-campus encounters are usually less of a problem, and have some distinct advantages). So the advantages of offering research degree courses off-campus are obvious; however, the relatively small numbers of students (in comparison with undergraduate courses) and the diversity of the research interests makes it unlikely that developing good quality course materials will be viable. This problem is further exacerbated by the fact that the research field in any discipline is arguably where the 'cutting-edge' changes occur and so any course materials would need to be in a form where they can be revised readily; again this reduces the viability.

Therefore, the task becomes one of not developing coursework components, but rather to structure a research program in ways which enable the students to complete their 'portfolios'. In this sense there are resource materials for the EdD in the form of collections of readings on research methodology or guides to particular stages in the research. Progressively, more of this resource material is being provided on *Interchange* the University's computer-mediated communications system (which is covered in Elizabeth Stacey's paper in this symposium). This not only increasingly provides for 'scholarly' (and not so scholarly!) discussions, but it is likely to provide an avenue for collaborative research activities consistent with the EdD approach.

**Concluding comment**

In a recent article (Evans 1996) I have argued that postgraduate research can be seen to be 'opening-up' many possibilities for the future of Australian universities. As noted at the outset, it is often argued that the fundamental distinction between universities and other educational institutions is their involvement in research. However, the expansion in the

number of universities, and the demands for accountability of public expenditure, means that universities' entitlement to research funding id being challenged.

Postgraduate research, especially of the find which is related to professional and industrial contexts, holds out the prospect of universities sustaining their case for research funds. Not only can they argue that they are contributing to research and research training which is proving to be professionally and industrially beneficial, but they are also likely to develop a sympathetic and 'well-placed' alumni lobby group from their postgraduate students. The EdD program provides an example of one such venture where a new kind of research degree is unfolding.

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# Unreasonable practices: Reading a code for supervision against the grain

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## Introduction

It has become commonplace among researchers working in the field of graduate education to assert that the supervision relationship is crucial to the student's success:

> It seems that 'rapport' and good communication between students and their supervisors are the most important elements of supervision. Once the personal relationship has been well established, all else falls into place.
>
> (Phillips & Pugh, 1987, p.10)

> A constructive and supportive relationship on not only the intellectual but the personal level, can often buoy waning enthusiasm and make a 'powerful contribution to the success of a project' (Connell, 1985, p.41).
>
> (cited in Powles, 1988, p. 52)

Absent from this literature at large are the "dirty" issues of power, desire and difference that in part constitute this relationship. Dirt is understood here as "cultural matter out of place" (Douglas, 1967). Power, desire and difference are dirty words because, within the dominant liberal discourse[1] of supervision as a "reasonable" practice, they are out of place – literally unreasonable and unspeakable. In a discourse which constitutes supervisors and students as other than powerful, desiring and different – as fundamentally equal, rational and autonomous individuals – there is no place for politics or the body. Acknowledging their presence in the supervision relationship would point to the need for explicit boundaries, for "dirty talk". Yet dirty business occurs in supervision – whenever the supervisor or student crosses "over some line which should not have been crossed and this displacement unleashes danger" (ibid) for the other. Given the sense of danger, of transgression, that accompanies these dirty issues, it is not surprising that institutional publications framed within the liberal discourse of education

[1] Discourse refers to a culturally and historically located system of beliefs, values, and practices (including language) which produces particular subject positions that individuals take up. Discourses make it possible to say some things and impossible to say others, give speaking authority to some while others must be silent, and are anonymous because "there is no identifiable author ... nor do they have a clear-cut beginning". (Cherryholmes, 1988, p. 34) The liberal discourse of education is premised on the fundamental equality of rational autonomous individuals. Difference between them, in terms of educational outcomes, is understood to be a function of inherited ability and voluntary effort.

are deafeningly silent on them. In this paper I explore these issues in relation to supervision and then go on to comment on their absence from institutional codes of supervision. I want to suggest that the silence in the official discourse makes supervision more dangerous because clear boundaries are not set, thus making (sometimes accidental) transgressions likely. Finally, treating the text of a particular code as a microphysics of power, I offer a close reading of it to disrupt its self-evident reasonableness and make plain its dangerousness.

**Getting the dirt on power, desire and difference in supervision**

There are two senses of power that are relevant to an analysis of supervision. The first is the notion of power as structured and unequal. In this sense the supervisor, because of their institutional position and functions, has more power than the student. The student's sense of self as powerless in relation to the supervisor can engender a fear of behaving in certain sorts of ways – for instance, assertively – in case the supervisor punishes with their greater power, perhaps through the assessment process or by obstructing future career options. It can also produce a kind of everyday powerless behaviour such as passively waiting for the supervisor to decide how the supervision will proceed. Awareness of this kind of power is typically more acute for the less powerful party (although its effects may be hard for them to clearly discern) while the more powerful may be insensible to it. Having said that, I am aware that many graduates do not want to use the word "power" in the context of their supervision relationship – this is partly a consequence of the institutional refusal to talk dirty.

The other sense of power I wish to employ is a Foucauldian view of power as a relation between student and supervisor, which exists because both are capable of acting: "it is ... always a way of acting upon an acting subject or acting subjects by virtue of their acting or being capable of action" (Foucault, 1986, p.427). In this view, the supervision relationship is (inescapably) always/already a power relation: it "is exercised on and by individuals over others as *well as themselves*" (Sawicki, 1991, p.25, my italics). Forged within the dominant discourse of the university, this relationship is lived out in various but constrained ways – constrained insofar as the discursive context of the relationship makes some responses from supervisor and student more likely than others. Crucially though, because power relations are productive – rather than merely repressive – they include the possibility for struggle, resistance and change.

Understanding power to be both structural and relational (produced by social arrangements as well as occurring between individuals) is important for understanding the unreasonable nature of the supervision relationship. On the one hand, there is the

material reality of the supervisor's more powerful structural position and the ways in which this position can be used to block access to privilege and reward. There are too many stories of abuse of power to discount its operation and effectiveness; therefore students must account for it in their dealings with their supervisors.[2] Yet at the same time because both student and supervisor are acting subjects who may act on the actions of the other, we can understand this rule of supervisory power to be neither complete, nor unmediated by the student. If this is so, then it must be possible to offer students and supervisors other ways of acting within the supervision relationship than the obvious ones. This is in spite of the many institutional practices (what Foucault calls the microphysics of power) – including the regulations of the institution and students' experience as undergraduates (Grant 1993) – which have prepared students and supervisors to act in particular ways. With insight, courage, and some tools, either one can interrupt their existing relationship to some extent.[3]

Desire is another dirty word in the liberal discourse of supervision – in which it is the student's *intellectual* work which is supervised. In the literature on student learning, the clean term that stands in for desire is motivation. By using this term, we avoid "speaking the unspeakable" – suggesting any hint of the body or sensuality in relation to pedagogy, a terrain in which "bodies and emotions are assumed to be irrelevant" (Jones, 1996, in press). Yet if supervision as a power relation occurs between two acting subjects, those subjects act in bodies which feel desire, which in turn is intimately connected to power. In her paper on desire, sexual harassment and pedagogy, Alison Jones suggests pedagogical "relationships are often riven with vulnerability and anxiety – as well as pleasure and excitement" (ibid). Supervision is a particularly intense pedagogical relationship (at least for the student), where the student is known personally to the supervisor and their work is subjected to intimate scrutiny. The emotions that Jones speaks of are also likely to be more intense. Jones goes on to describe two discourses of desire which produce (and are produced by) desiring subjects in educational institutions: desire as lack, which the student experiences as the desire to be filled up with the knowledge of the supervisor, and desire as a force of positive production which is experienced as an "energy that creates things" (Grosz cited in Jones, 1996). Constituted

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[2] A story which illustrates this well is one from my own experience of introducing students to the "Guidelines for Discussion", a document for negotiating supervision arrangements with their supervisor. When I ask them how they would feel putting it on the desk for discussion with their supervisor, it is usual for 90% of the group to look very uncomfortable and to express extreme caution and resistance to the prospect of getting off on the wrong foot with their supervisor. This is not the reaction of a group of supervisors: theirs is more likely to be either "yes it's useful, I'll use it", or "what's the need?". Never *caution.*

[3] The "Guidelines for Discussion" (mentioned above) are one such tool and are described in some detail in *"Guidelines for discussion": A tool for managing postgraduate supervision*, by Grant & Graham, in Quality in postgraduate education, (1994), Zuber-Skerritt & Ryan, Eds.

within a phallogocentric discourse, the first kind of desire produces the student as a feminised subject who, passive and lacking, seeks the masculinised supervisor to fill "her" with "his" knowledge: domination and subordination are eroticised, hence the connection between power and desire. The second kind of desire produces both teacher and student as mutually desiring subjects who desire to produce knowledge together – in this sense, desire is a force for positive production. As these complex and contradictory desires – of "the controlled, normalised, 'empty', disciplined person as well as the excited, passionate, 'full', knowing, acting subject" (ibid) – are mobilised in the supervision interaction, they do not remain safely contained in the mind but animate the body (McWilliam, 1995).[4]

Like desire, difference is a function of the embodied experience of supervision relations and is played out in the context of struggles for power in the university and society at large over differences of gender, ethnicity, class, age, and sexual orientation among others. These differences, further confounded by the supervisor/student inequality, will bear on each supervision relationship, influencing it in distinctive ways. There is little in the graduate education literature that attends to these differences: some work on gender (see for example, Conrad & Phillips, 1995; Powles, 1984) and on overseas or NESB students (see for example, Aspland & O'Donoghue, 1994). But these categories are insufficient to cover all diversity and much of the literature tends to be apolitical. Difference though *is* profoundly political and universities throughout the western world are currently engaged in significant struggles against challenges from the Other including women, working class and ethnic minorities.[5] Most of the existing graduate literature, however, is characterised by the presumption of a highly generalised "student": the invisible centred subject of Enlightenment discourse who, as I have argued elsewhere (Grant 1993), is the rational and autonomous individual of liberalism – undeniably male, white and middleclass in origin. Broad ranging critiques of educational institutions predicated on this individual have been mounted by critical education, feminist and post-colonial[6] theorists although these have been little applied to postgraduate education in particular.

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4 They ought not, however, become overtly sexual while supervision is in progress because of the clash of interests that arises and the dangers of abuse. Indeed given the power relations that pertain, the issue of student consent to an intimate relationship with their supervisor is fundamentally problematic.

5 This struggle can be seen in the curriculum struggles in the US and elsewhere and also those over admission policies and support programmes for "minority" students.

6 See for instance the work of bell hooks, Gayatri Spivak, and Edward Saïd.

**Clean codes of supervision**

Codes of good supervision practice are an increasingly common institutional response to the pressures of a changing graduate climate. In a recent overview of the Quality Committee's findings on the performance of Australian universities in postgraduate supervision, codes of good practice are mentioned as an index of quality assurance – among others, the University of Adelaide has one, as does Ballarat (imported from Melbourne), New South Wales, and South Australia.[7] The codes, however, are largely silent on the place and play of power, desire and difference in supervision and, consequently, on the potential dangers. Yet, as I have argued here, the supervision relationship is inescapably a structured and unequal power relation and the mobilisation of desire (both the supervisor's and the student's) is a key element in the successful – even pleasurable – living through of this relationship to the project's completion. The effect of the codes' silence is to make power and desire unspeakable for both supervisor and student while difference is safely contained as the clean difference of language (in reference to NESB students), with scant reference to gender or culture for instance.

A common form for such codes is two lists describing the responsibilities of the supervisor and the student.[8] From a commonsense perspective, this seems to be a good idea because it declares in a reasonable manner that both parties have responsibilities, thus suggesting a reciprocal (and fundamentally equal) relationship in which there is a degree of mutual accountability.[9] However, in the remainder of this paper I want to suggest that in this apparently "reasonable" framing there is danger for the student (and the supervisor) insofar as the unreasonable elements that constitute supervision are rendered unspeakable. To illustrate this argument, I will look closely at a particular code from a Foucauldian point of view.

**Text as discursive practice**

> Foucault's aim is to isolate, identify and analyse the web of unequal relationships set up by political technologies which underlies and undercuts the theoretical equality posited by the law and political philosophers. ... To understand power in its materiality, its day-to-day operation, we must go to the level of the micropractices, the political technologies in which our practices are formed.
>
> (Dreyfus & Rabinow, 1983, p.185)

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7 Campus Review special report, "Quality: How the universities fared", Sept 21-27, 1995.

8 In some codes – for example, The University of Adelaide's "Code of Practice" 1990 – the responsibilities of other parties such as postgraduate co-ordinators and departments are also spelled out.

9 It is worth remarking here that many codes appear to be promulgated from a central source (or simply reworded versions of other institutions' codes) without student or supervisor input or buy-in. I have yet to see in print a critical appraisal of their practical effectiveness. Many students' responses to the code discussed here is one of guarded cynicism.

From a Foucauldian perspective, supervision codes are micropractices of power which work to produce students and supervisors as particular sorts of unequal subjects.[10] By examining such micropractices closely we may begin to understand how power is deployed in universities without overt coercion but through assumptions of "objectivity, universality and consensus" (Giroux, 1992, p.31). Discursive power works through the text of the codes by simultaneously facilitating and limiting, enabling and constraining what can be said, by whom, where, and when – in short by constituting power relations between the individuals governed (or hailed) by the code. It is important that such texts are "decentered and understood as historical constructions marked by the weight of a range of inherited and specified readings ... highlighting the possibilities of reading against, within, and outside their established boundaries." (ibid, p.30).

The way in which I have read the code below is informed by discourse analysis, a technique which involves attending closely to the text while maintaining a critical distance from it. My assumption is that the text "does not immediately disclose" (Saïd, 1978, p.675) what it embodies, implies or represents and neither is its language innocent. Rather it is a site of plays of power, a "place where actual and possible forms of social organisation and their likely social and political consequences are defined and contested ... it is also the place where our sense of ourselves, our subjectivity, is constructed" (Weedon, 1987, p.21). It is because texts are not self-evident that they are subject to multiple (but as Giroux says above "inherited and specific") readings influenced by the subject positions of the readers. Therefore it is predictable that supervisor and student readings of the text below would be very different because of their differing interests and structural positions in the university. The reading offered here, though, is my reading, shaped by my positions and interests as a post-feminist, radical university teacher, student and staff developer, and sometime postgraduate student. In reading this text, I want to explore the following questions: how is the student constructed or hailed by the text? How is the supervisor differently positioned by it?

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[10] Understanding students and supervisors as subjects of discourses challenges the dominant Enlightenment belief that speaking (thinking) individuals are the origin of true statements, suggesting instead that there is a limited range of possible true statements within any given discourse (which exists independently of individuals) and that speakers are subject to and constrained by these limitations. In this analysis there is an inevitable relationship between power and truth because those who are given authority/power can speak and what they say becomes truth although the guarantee of this truth is materially based in the power given the speaker.

**The University of Auckland's guidelines**

In 1991, The University of Auckland produced guidelines for the supervision of theses and dissertations at Masters level. They were almost identical to an earlier document for PhD supervision. They have since been amended twice and the text of the third version of the guidelines is reproduced here:

THE UNIVERSITY OF AUCKLAND

SUPERVISION OF THESES AND DISSERTATIONS AT MASTERS LEVEL

1 Senate has approved this statement for the guidance of supervisors and students and with intent to minimise the risks and problems of personality clashes, inadequate supervision, or unsatisfactory students. It is not intended to detract from full compliance with course regulations set out in the Calendar.

As part of the general supervision of a student's progress, supervisors should:

(a) give guidance about the nature of research and the standard expected, about the planning of the research programme, about literature and sources, attendance at taught classes, and about requisite techniques (including arranging for instruction where necessary);

(b) maintain regular contact, for example through tutorial and seminar meetings, in accordance with faculty/departmental policy and in the light of discussion of arrangements with the student;

(c) be accessible to the student at other appropriate times when he or she may need advice;

(d) give advice on the necessary completion dates of successive stages of the work so that the whole may be submitted within the scheduled time;

(e) request written work as appropriate, and return that work with constructive criticism and in reasonable time;

(f) arrange as appropriate and convenient for the student to talk about his or her work to staff or graduate seminars;

(g) ensure that the student is made aware of the inadequacy of progress or of standards of work below that generally expected;

(h) give the student a written appraisal of the work achieved at regular intervals.

Notes:

(i) It is implicit in the above guidelines that if a supervisor is absent from the University for an extended period because of illness, leave, or

other reasons, either an appropriately qualified replacement supervisor will be appointed by the Head of Department or the students will be advised they can contact the absent supervisor through the Department office.

(ii) Particular care needs to be taken with overseas students who may need in the early stages very frequent contact, and often advice, particularly in relation to (a) above, of a seemingly elementary kind. The assistance needed may include help with language problems and advice about language training where necessary.

The responsibilities of the student include:
(a) responding to the arrangements proposed and the advice and instruction given by the supervisor;

(b) discussing with the supervisor the type of guidance and comment he or she finds most helpful and agreeing on a schedule of meetings;

(c) taking the initiative in raising problems and difficulties, however elementary they may seem;

(d) maintaining the progress of the work in accordance with the stages agreed with the supervisor, including in particular the presentation of written material as required in sufficient time to allow for comments and discussion before proceeding to the next stage;

(e) providing as prescribed by the department/faculty a brief report or reports to the Head of Department through the supervisor.

Students are reminded that compliance with the course regulations and the quality of their work is ultimately their responsibility. The role of the supervisor is to assist them to achieve the best result of which they are capable. The student's cooperation is essential.

Accordingly, if students consider that their work is not proceeding satisfactorily for reasons outside their control, or if they consider that they are not establishing an effective working relationship with their supervisor, they should discuss the matter promptly with the Head of Department or Dean of the Faculty concerned. While all students may have recourse to the contact network and to the Mediator, strictly academic matters are not generally covered by University Harassment Policy.

**How is the student constructed or hailed by this text?**

From the opening line of the text the student is constituted as subject *to* the document (in the sense of being subject to the law) which is authorised by Senate: "Senate has approved this statement" (line 1). This body is perceived to be powerful in the university but, at the same time, its exact status is unclear to many students. These factors amplify the perceived power of the text because if its status is unclear, then so are its "legal"

ramifications. The student is reminded again of their subjected status by the charge that "*compliance* with course regulations ... is ultimately their responsibility" (lines 52-53). The student is further constructed in a *passive* subordinate position because the message is that important decisions have already been made and will be made: for example, if the supervisor is away "either an appropriately qualified replacement supervisor *will be appointed* by the Head of Department or the students *will be advised* they can contact the absent supervisor through the Department office" (lines 30-33). A further example is where the student is given the responsibility of "*responding to* the arrangements proposed and the advice and instruction given by the supervisor" (lines 40-41). In this discourse the student is overpowered by institutional and supervisor arrangements, is constituted as silent and compliant, to be seen but not heard.

At the same time, the student is positioned as the independent author of their own success: "students are reminded that compliance with the course regulations and the quality of their work is *ultimately their responsibility*" (lines 52-53).[11] They are also constituted as an autonomous equal with their supervisor, for their responsibilities include "*discussing with* the supervisor the type of guidance and comment he or she finds most helpful" (lines 42-43) and "*taking the initiative* in raising problems and difficulties, however elementary they may seem" (lines 44-45). In these ways the student is constructed as powerful because they can act freely in their own interests.

Yet the text holds double-binds for this "autonomous" student. For instance, in the event of problems such as "work [which] is not proceeding satisfactorily for reasons outside their control" (lines 56-57), or where they are "not establishing an effective working relationship with their supervisor" (lines 58-59) they are urged to "discuss the matter *promptly* with the Head of Department or Dean of Faculty" (line 59). The word "promptly" is particularly interesting in that it marks a double move of appearing to give the student a voice (they may discuss this matter), yet by qualifying this (it should be done promptly) that voice is potentially silenced. The student in trouble in supervision is caught in a dilemma: if they act too soon, they risk getting offside with their supervisor unnecessarily by appearing too anxious or stroppy, for instance, but when is it too late? In my experience, students in supervision difficulty typically blame themselves – a likely reading of lines 58-59 in which it is the student's work to establish a good working relationship. By the time they realise (if they ever do) that the supervisor is partially – or perhaps mainly – responsible for the wretched state of affairs between them, they wonder whether they can still legitimately act at all. Because, along with everything else, they have *not* acted promptly. Sadly, in practice, there *are* major limitations on what an HOD

[11] The italics are mine, added for emphasis.

or Dean can do to address this kind of situation in the final stage of a thesis. The results for a student can be disastrous.

Another related feature of the code is that the list of the student's responsibilities is not exhaustive: "The responsibilities of the student include ..." (line 39). One effect of this is that the student can never be sure if they are doing everything they should be. This becomes especially important if they have a grievance with their supervisor.

The text is silent on the institutional conflicts of interests which underpin the crucial area of grievance procedure. The procedure offered ignores power relations which exist between student and HOD or Dean (and the fact that supervisors are sometimes also HODs). When conflict between student and supervisor arises, HODs are often seen by students (sometimes perhaps mistakenly, but naturally enough) to identify with the staff member and the phenomenon of "closing ranks" is a dangerous possibility for which there is evidence from students' experience. It also seems (perhaps not surprisingly) many HODs do not have the special skills needed to assist students and supervisors navigate their way through a supervision breakdown, and further, in some cases they direct students into situations which are not in the their best interests but which protect culpable colleagues. In these situations the HOD is caught in an almost impossible conflict of interests, one which arises in part out of hands-off management practices dominant within the university. It may be clear to the HOD that the student has a valid claim (on the grounds of natural justice, or of being fee-paying and deserving a better deal, or, as is frequently the case, the HOD already knows the staff member is a poor supervisor because of many reports over time) and yet at the same time the discourse of being an academic, even as a head of department, does not permit an HOD to *direct* a supervisor to behave in certain ways. This, which in other contexts might be accountability or good management, would be seen as rank interference and a challenge to academic autonomy.

The student constructed in this text is a contradictory creature: she or he is at once hailed as resourceful and independent, and as passive and overpowered. These contradictions create a web of confusion and powerlessness for the student who can never be quite sure in any interaction what the "appropriate" behaviour is. The result of supervision breakdown is students who are frustrated, angry, confused, helpless and yet afraid to take any action: these are not the rational autonomous students of the liberal discourse.

**How is the supervisor differently positioned here?**

Supervisors are hailed in the structure of the text as the main people: they are given precedence by being mentioned first in the introduction and in the body of the text. Yet, as the main people, they are not held accountable for their actions – in line 3, "inadequate supervision, or unsatisfactory students", the inadequacy of supervision is distanced from the supervisor whereas the student's belongs to them. In this text, an unsatisfactory supervisor is unspeakable. Further the list of supervisor's responsibilities begins with the phrase "supervisors should" (lines 6 and 7) while that of the student's begins "the responsibilities of the student include" (line 39): the supervisor's responsibilities are merely suggested while the student's are definite but *not exhaustive* (as I've already discussed). Further, this "should" lacks conviction because it exists in a framework of academic autonomy, a culture of non-interference in the private work of supervision, and a skewed power relation that favours the supervisor. In this culture – where in the event of "should but didn't" there are no explicit (or implicit) material consequences for the supervisor. Thus "should" has limited coercive power.

What is more, as lines 52 and 53 make clear, the supervisor has no clear responsibility for the success of the enterprise, not even of ensuring the student knows about the course regulations. This is curious: university regulations are notoriously difficult to interpret, if not actually elusive (and very flexible if only you know how to play them!). Given a supervisor's structural position, ought it not be their responsibility to ensure that regulations are known and complied with? Another area of no responsibility is that of either establishing an effective working relationship with their student, or of seeking redress for an unsatisfactory supervision relationship. The text includes no bottom line of responsibility for the supervisor: if the thesis fails, the student fails, and so the student's position is clear. But where is the supervisor's responsibility in that failure? In this text that, too, is unspeakable. Yet, in my experience, students do submit theses in good faith of their excellence, only to be stunned by a less than excellent result with all the consequences, for instance in terms of scholarships, that are entailed. When they tell the tale of their supervision it is sometimes apparent that the guidance and feedback they were given was inadequate, thoughtless, contradictory, or even punishing. This may not always be the supervisor's intention but, given the closeted nature of supervision, it is possible, even likely, because who can speak with knowledge and authority to the supervisor? Ironically, these guidelines are more protective of the supervisor yet the student is far more vulnerable, less knowing and has more to lose.

**Conclusion**: **Reading this code against the grain**

This document ignores the reality of the lived experience of being a graduate student and supervisor. In its simplistic assertion of equal student and supervisor responsibilities, it ignores the ways in which the experience of being an undergraduate does not prepare students well for the role of being a speaking equal to the supervisor – and, as a staff member recently pointed out to me, the ways in which being an academic does not prepare a supervisor well for their role.[12] It is legitimate, according to the text, that a student may say what kind of guidance they may need, but in practice many students *will not* state their needs unless invited to by the supervisor because they have not learned how to or, as a student pointed out, they have learned not to. The code ignores the material implications of the structural power inequality between supervisor and student: in this context for the student (and maybe the supervisor) there is an unclear line between "reasonable" and "unreasonable" demands and, perhaps wisely, many students err on the safe side by making too few demands with unfortunate implications for the effectiveness of their working arrangements. In this text the student is constructed as the party with the least power yet the most responsibility, a profound and disabling contradiction. In the silence of the text on issues of power, desire and difference, these are rendered unspeakable: where transgression occurs, it too is unspeakable.

Reading this code against the grain, it is clear that ultimately students have the most to lose from clean codes while supervisors' interests are protected. Instead of being an index of quality assurance, a code of this sort may be a dangerous practice because it legitimates an unrealistic picture of supervision as a fundamentally reasonable practice. While heeding the warning that the "pursuit of safety may unwittingly promote mediocrity" (McWilliam, 1995), and at the same time not wanting to encourage "no liaisons" as a way to avoid "dangerous liaisons", I still argue that supervision must be recognised as a profoundly political and "unreasonable" practice. Universities, in their functions as good employers of supervisors and educators of students, must attempt to make such practices safe. Effective codes need to talk dirty, that is to include consideration of the issues of power, desire and difference. In so doing, they will have to admit that far from being a "strictly academic" (line 61) matter, supervision is a process that engages both the supervisor and the student as whole (complex and contradictory) persons and that, as the more powerful party, the onus should be on the supervisor to ensure that dirty business does not occur.

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[12] Gavey, N. Personal communication, November 1992.

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# E-QUALITY, POSTGRADUATE SUPERVISION, AND THE EDUCATION DOCTORATE: THE DEAKIN EXPERIENCE

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## Introduction: In search of E-Quality

In an useful preliminary account of the development of the professional doctorate in Australia, Hager and Deer (1995) provide a good instance of the challenge that the Deakin experience with the Education Doctorate represents, as a distinctive exercise in bringing together postgraduate studies and distance education. As they write:

> At Deakin University it is possible to complete the doctorate using e-mail, fax, phone, and teletutorials to maintain contact wit the supervisor, together with attendance at an annual conference. We question whether this contact is sufficient replacement for regular face to face contact with the supervisor. It is our experience that this type of contact is sometimes inadequate (Hager and Deer, 1995: 10).

There are several issues here. Firstly, it seems to rest upon an unexamined *norm* ie that "regular fact to face contact" *is* the norm, and moreover the most effective way of achieving the aims and ends of postgraduate education and supervision. However, questions such as the following are unavailable: Are the parties to this transaction transparent to each other? Is it as 'immediate' as seems at least implied here? What follows when it is understood as always already mediated? Secondly, it risks the fallacy of transfer – that is, simply transferring the experiences and judgements of what might be called 'proximal education' to the situation of the distance education mode, in a way that has been critically scrutinised by now extensive research in this latter area.. The point that must be made, and stressed, is that the pedagogic situation, and hence the practices that characterise it, is very different in the case of distance education, and certainly it should not be assumed that competence in one mode automatically means commensurate competence in the other. Hence it becomes important to inquire into the specificity of postgraduate pedagogy, particularly that associated with higher research degree supervision, and to appreciate that this specificity itself must be understood as thoroughly situated – distinctions must therefore be made within that specificity, as it were, and the task initiated of re-theorising the particular circumstance and character of postgraduate pedagogy in the distance education mode.

This is precisely the work underway in those institutions providing for postgraduate research studies at a distance, such as Deakin, and more specifically in the EdD programme at Deakin. Elsewhere we have used the metaphor of 'dancing at a distance' to evoke something of the complexity of this practice (Evans and Green, 1995), in seeking to ring together work in the context of the education doctorate and the increasing use of digital-electronic technologies as a resource for both curriculum and administration. If indeed supervision is understood as pedagogy, as a distinct pedagogic practice, then conceiving of it as dance-like might well prove both challenging and illuminating when it comes to considerations of quality assurance and the like – what is involved in seeking to grasp the quality of a dance, and of dancing more generally? How indeed is it to be 'assessed' and 'measured'.

In this paper I want to explore the concept and practice of 'supervision', principally as it is being developed in and through the new research-oriented degree of the Education Doctorate at Deakin University. The risk I am very aware of here is that it might be seen as, in this particular instance, a more or less blatant exercise in marketing and public relations, since I shall be drawing on my own experiences, practices and proposals and those of my colleagues, and referring specifically to a higher research degree programme currently available through the institution and the faculty where we all work. I will take that risk nonetheless, since it is a fundamental aspect of the programme in question that it is deliberately organised around and in terms of action and participatory research on the part of both students and academic staff alike. The paper arises then out of ongoing research and development work in the EdD in question here, and is directly related to further lines of inquiry and praxis addressed to postgraduate pedagogy, disciplinarity, and the relatively new phenomenon in Australian higher education of the professional doctorate.

Furthermore, I want to frame the account that follows, and indeed the work that is at issue here, within a critical assessment of the 'quality' agenda in current higher educational policy and practice: "Quality, quality management and quality assurance have become the catch-cries of the 1990s in higher education in Australia" (Barnes and Reid, 1994: 503). As commentators such as Nunan (1994) have indicated, the 'quality' concept itself is both complex and contested in recent educational discourse, and moreover it has particular ramifications and implications within and for the distance education context that is my specific concern in this instance. Importantly it is something that cannot and should not be disengaged from social and political considerations, and in particular from enduring concerns about social inequalities and social justice as they relate specifically to educational provision, practices and outcomes.

In that regard it becomes important to take account of the seemingly inexorable move towards new forms of articulation between electronic-digital technologies and higher education, which would seem to provoke new tensions between 'quality' and 'equality' as rival organising principles and rallying points for educational debate and politics in this country, as elsewhere in the Western world. The point might also be made that, ideally at least, 'quality' and 'equality' are best conceived as entirely and necessarily compatible concepts, and as fundamental especially in their linkage to any truly progressive post-modern educational praxis. In that spirit, this form of articulation is perhaps usefully and appropriately proclaimed as and subsumed within a new social project of 'e-quality', with fundamental implications and challenges for higher education in complex new times.

**Rethinking Postgraduate Supervision**

There is general consensus in the literature that 'supervision', as it si most commonly and generically called, is a critical factor in providing for quality in postgraduate education and research development and training. Moses (1994) for instance asserts that "supervision is among the key elements in graduate study", having previously outlined a model within which she calls 'input', 'process' and 'outcomes' considerations that are all crucial in and for postgraduate research education. Supervision in her account falls within the 'input' and 'process' dimensions of the model, although more particularly relates to the former. This involves a framework within which "supervisors, students and the education process", in her terms, are understood as working together. As she indicates, "[a]cademic staff as supervisors" significantly contribute to maintaining quality in postgraduate research education, with her reference point here being more specifically PhD work:

> Their formal qualifications which signify subject competence and research training, their active involvement in research and publication, as well as their knowledge of the research process, constitute competence as supervisors which is important to the success of graduate students. Their attitudes, their own philosophy of higher education and of PhD education in particular, contribute to the quality; their attitudes, often based on their own past experience, shape the interaction with students – the amount of direction and control, of guidance and structure, and of freedom and autonomy their students experience (Moses, 1994: 5).

Historically and traditionally, this had been as Clark (1994) argues a matter of the tight nexus of research, teaching and study, a practice which originated in the great German universities of the nineteenth century. This involved the "binding together of teaching and learning by means of research" (Clark, 1994: 11), with 'research' being understood as both the organising principle for and the raison d'etre of the modern university. It was thus very much based on notions of proximity and enclosure, and on being a relatively restricted, elite activity. Importantly, however, Clark draws attention to the fact that the overall context is now very different from what it was, as a result of the massificaton of the higher education system generally, across the international scene (Clark, 1994: 12). Moses concurs with this analysis but also observes more particularly the collapse of the binary system in Australia, post-1987. As she writes:

> We are no longer talking about a small number of scholars working with a small number of research students. We are now talking about many thousands of students engaged in various research degrees, and about several thousand supervisors who are influenced in their work by the context in which they teach and research (Moses, 1994: 9).

The situation is further compounded in its difficulty and its complexity by the fact that in Australia two quite distinct higher education institutional cultures were brought together within the terms of reference and realisation of such policy-driven amalgamations, one oriented towards 'research' and the other towards 'teaching'. This in itself has meant particular challenges vis-a-vis maintaining and developing research orientations and initiatives since many of those now involved in supervision, or increasingly expected to be, have little experience in this regard.

But what is very clear is that there is considerable confusion surrounding the very notion of 'supervision', and much contention accordingly. Why this term, anyway? What is its history? Where did it come from, and how and when did it enter into the discourse and practice of postgraduate education? Further, what is its relation to another term arguably pertinent – 'pedagogy'? In that regards, it si useful to remember that education itself is something of a curious reference here, since the more usual formulation is 'postgraduate studies' or 'postgraduate research', or perhaps 'postgraduate research and training', and not so much 'postgraduate education'. Bob Connell (1985a) has suggested that "[s]upervising a research higher degree is the most advanced form of teaching in our education system", but as I have argued elsewhere, this is not a common stance in university circles or in postgraduate contexts (Green and Lee, 1995). Rather, 'teaching' is seen as the devalued other to 'research' within the symbolic economy of the academy. This remains the case even though various forms of attention and even 'lipservice' have been increasingly given to the importance of teaching, a major reason for this being that often it underpins the funding of universities and like institutions. Acknowledging supervision as teaching, or more formally as

pedagogy, still seems somehow to go against the very grain of the university, and this bears further examination.

Cullen and his colleagues, in their study of ANU, suggest that there is a need to, in their term, 'deconstruct' the received or taken-for-granted model of postgraduate research supervision (Cullen et al, 1994). This they see as, in essence, organised and conceived as a one-to-one interaction between an academic supervisor and a doctoral student. This might be usefully described as an ideologically-charged individualism, with the relationship itself being extremely privatised and characteristically intense. Again this is something I have been working on elsewhere (Evans and Green, 1995; Green and Lee, 1995), in trying to explore difference ways of thinking about and understanding how postgraduate studies as a pedagogic practice might be conceptualised, as well as the way things are in this regard currently and have been historically. It is worth noting here, too, that this model of a one-to-one relationship between teacher and learner is arguably still central to normative accounts of education and psychology, which suggests that in this respect as in others the distinction in kind that is often made between postgraduate and other university educational contexts and the contexts of schooling in the more usual sense isn't as marked as it is commonly made out to be.

One of the key assumptions it seems to me is *proximity*, which in turn maps very readily onto notions of *presence*. Clark (1994: 11) for instance refers to the (ideal?) situation where 'research', 'teaching' and 'study' in his terms are so tightly interfused that they can hardly be distinguished at all:

> When teachers and students engage in research in close cognitive and physical proximity, the teachers teach and the students learn as they are joined together by virtue of this common activity.

There is very little accounting for *difference* in such a situation, if any; it is very much a matter of the 'meeting of (like?) minds', in that complex, contradictory sense that feminist work draws attention to, as effectively subsuming bodies and as a profoundly masculinist way of being in the world. Language is also therefore denied or glossed over in its specificity and its 'difference-ing'. Exchange happens more or less silently, and the learner (the student, as novice or neophyte) is formed in the image of the teacher (the researcher), or not as the case may be. This line of thinking and argument is to enter into the territory of deconstruction 'proper', and to draw more specifically on the work of the French poststructuralist philosopher Jacques Derrida – a move that is, in my view, particularly generative in seeking to understand the complexity of postgraduate pedagogy. I shall not pursue this matter her; suffice it to have noted some of the necessary intellectual context for this kind of discussion.

What happens, then, when we take into account the manner in which postgraduate studies is further complicated by being conducted in the distance education mode? That is, when 'proximity' as an organising principle is replaced by 'distance'? The point I want to focus on here is that a significant element of risk enters into the calculation at this point, particularly with regard to notions such as 'quality assurance'. There are two aspects to this. One is the assumption that when supervisors and their students are at hand, as it were, ie on-campus or 'on-site', one can feel assured somehow that they are indeed being 'supervised'. Presence and proximity in and of themselves are necessarily reassuring, in this and other respects. That is at least questionable, I suggest. The other is that because the pedagogic relations and practices are sustained at a distance, it is harder to check them out and to see if they are indeed working, or if misunderstandings or problems have occurred in terms of 'learning' or any other aspect of the relationship. That is, because of the very fact that it is conducted at a distance, there is greater risk

involved in terms of 'securing' successful learning and study. At the same time, it needs to be acknowledged that this is an entirely familiar, symptomatic position to work from, and on which is quite fundamental to the rationalist, logocentric worldview that philosophers such as Derrida seek to draw attention to, as the dominant metaphysical context of Western culture and education.

At this point I want to turn more directly to the question of supervision in the EdD programme. The account that follows builds on from that provided elsewhere (Evans and Green, 1994; Brennan and Walker, 1994), as well as from ongoing curriculum and staff development in the programme itself. My starting point is the proposition that good supervision means, or makes for, quality (postgraduate research) education. This is akin to saying that effective pedagogy is a necessary precondition for successful educational experience and achievement, or that good teaching maps readily onto effective schooling, at whatever level. There is here a huge debate simply glossed over in making such points as these as starkly as I have, but I trust that I will be forgiven in this instance. What I want to get to is this: What makes for 'good supervision'? At issue here is the vexed and contentious question of 'research versus teaching', or rather, the tension evident throughout the academy but arguably more marked in postgraduate contexts between 'research' and 'teaching' as principles of academic value and work. The overwhelming tendency is to privilege 'research' over 'teaching', whether it be in terms of promotion, reputation, material rewards, etc. But what seems clear is that a 'good researcher' does not necessarily function as a 'good supervisor'.

As Elton (1994: 26) put it in his account of academic staff development in relation to research, although substantive research expertise and experience is certainly crucial, nonetheless "the possession of such knowledge and skills on the part of staff is a necessary but not a sufficient condition for being able to impart them to others". More is involved, then, than research competence as such. For Lewis, this includes "those aspects of supervision – and they are the most important ones – that have a strong interpersonal component". Rather than simply 'interpersonal', however, I would suggest that this side of supervision be understood as more specifically 'pedagogic' in nature and orientation, and hence as integrating and articulating the 'disciplinary' and 'developmental' dimensions of academic teachers' work (Connell, 1985b). Yet, curiously, little attention seems to be given to systematic reflection on pedagogy in university contexts – including Education faculties - , or on encouraging innovative forms of academic staff development in this regard. Deakin has certainly been no exception to this.

The EdD has provided both opportunity and a way to address this problem, however. From the very outset, it has been clear to us that the success of the programme rests heavily on the involvement and engagement of supervisors, and increasingly so as different cohorts move through the programme, firstly into the Colloquium stage and then into and towards Examination. Early on, there was some confusion and misunderstanding in this regard, and a certain measure of disaffection among those who were called upon to be supervisors, in what was claimed to be a very different kind of postgraduate research context. For some, this meant that they simply applied their supervisory knowledge and skills from their work with PhD students, while for others it meant drawing on their own experience as research students, again mainly in the PhD mode. Neither was appropriate, or effective, as it happened, since the requirements of the EdD and the sort of students attracted to the new programme are often very different from those associated from the PhD, *or* from coursework at the masters and possibly even the doctoral level. Part of the difficulty was in moving away from received mindsets, or ingrained 'habits'. What we have come to see is that this calls for careful

and sensitive staff development work, and more effective communication and collaboration among academic staff than tends to be the case, expressly with regard to issues of supervision and pedagogy. It has also meant, of course, getting abetter sense of the programme itself, as it evolved, on our part as much as that of our colleagues. The point I want to stress here, though, is that the EdD has proved to be a catalyst for professional dialogue and academic staff development, and also in highlighting the complex relations between research and teaching in university contexts (and hence the 'idea' of the university itself).

A major problem in this regard has been the persistence of the 'normal' model of supervision ie a one-to-one relationship and exchange. Rather than individualised and privatised, then, which such a model arguably encourages and underwrites, there is a need to move towards more social and collaborative models, and to emphasise the manner in which supervision is best reconceptualized accordingly. This requires an expanded and more inclusive view that attends more formally and systematically to the relational and institutional dimensions of supervision. As Cullen and his colleagues write, "concentration on the individual relationships which obtain between supervisors and students is misplaced". Rather:

> Supervision should be seen as the total oversight by the institution of a students' progress and broad academic development. Many people are involved: academics other that supervisors, Heads of Department, fellow students, support services, technical staff, and administrative staff. Students get assistance and stimulation from seminars, conferences and talking to visitors. Their concerns can range from theoretical to housing (Cullen et al, 1994: 101-102).

Attention to *administrative* contexts is quite critical, therefore, in developing a quality programme in postgraduate research education, with regard to both supervisors and students and directly related to the nature and quality of the exchange between them.

But as critical are the *curriculum* contexts: the opportunity for productive transactions among 'teachers', 'learners' and academic and professional 'knowledges'. This includes setting up situations and requirements whereby academic staff interact and collaborate professionally around issues of supervision and pedagogy, and students similarly interact among themselves expressly as researchers-in—information. The latter is particularly difficult in the distance education mode, of course, and it is here that the Interchange system is likely to prove particularly significant, in allowing for extended, virtual forms of 'on-line' exchange and community among EdD (and other postgraduate) students.

The structured nature of the EdD as a distinctive research degree is also apposite in this regard. Phase 1 of the programme is coordinated and overseen, and also 'taught', by a course team made up of experienced supervisors and active researchers who are, moreover, responsible for development of the programme as an outcome of their ongoing action research. Importantly the tea is involved in both curriculum and staff development, and supervision has emerged accordingly as a matter of research concern in itself. The team works closely and increasingly with supervisors in Phase 1, leading up the Colloquium. This is effectively a three-way relationship, formally negotiated at the site of the progress report which is required twice a year. The aim is to shift the locus of control from the course team to the supervisor as the main reference-point for both the student and the project, in what might be usefully conceived as a 'scaffolding' effect. The work of the course team here is therefore intended as educative for the supervisor as well as for the student. But it is also a matter of quality control and quality

assurance, in the sense that the team (presumably appropriately authorised and authoritative) undertakes t provide a sound basis for both effective supervision and student academic development. Post-Colloquium, it is the supervisor who takes on the latter responsibility, although this is always within the framework of the programme itself; at this point, the course team as such recedes in visibility and importance (although it might still operate in an advisory capacity, when and as required). Importantly, however, this is not conceived as a resumption of the normal one-to-one model of supervision, partly because of the administrative and curriculum context of the programme as a whole, within the overarching framework of the Research Office. Rather, the principal supervisor operates globally, with regard to the project in question, leading up the production of a Folio as a distinctive doctoral research genre. Part of the job is to manage the project, always in association with the student, and to serve as a 'broker' with regard to helping the student to commission 'local' supervisors as deemed appropriate for different aspects of the work towards the final product, the Folio. The effect therefore is to constitute, once again, a supervisory team, or 'panel'. In this way, ideally at least, the student's work towards successful completion of the degree is effectively underwritten by various forms of collaborative supervision, which are themselves supervised by the principal supervisor.

What this means is that a profound shift has been effected away from what has been described here as the received or normal model of supervision, involving a one-to-one relationship between an academic supervisor and a doctoral student. This is also, of course, a form of 'one-to-many', in the sense that the common situation is that a supervisor works with several students, separately, especially if he or she is both suitably qualified and acknowledged as experienced in this regard. (Interestingly enough, it thus also echoes the situation in schools.) What a structure such as the EdD provides for, then, is what is effectively a reversal of this 'normal' orientation (ie 'many-to-one'): several supervisors working in different ways and with differing degrees of intensity with a single student across the course of the project. At the same time, opportunity is provided for students to interact with each other and within their cohort or community ('many-to-many'), using the resource of the on-line educational environment.

**Conclusion**

This account raises a number of important issues. One that immediately presents itself related to the costs of the new (postgraduate research) pedagogy. Its apparent labour-intensiveness must be reckoned with, first off, since it is clear that this would act against its acceptance and adoption, especially in the current straitened circumstances of university funding. Relatedly, there are particular implications and challenges for conventional practices and policies regarding workload allocation, EFTSU calculations, technical equipment costs, re-training and re-skilling demands, and so on. However desirable such a pedagogy might be ('in theory'), in practice it would need to be adequately resourced and funded – the benefits in this instance therefore in terms of 'quality' to be weighed against the costs. Another concerns the potential extension of what I have elsewhere described as a "pan-optics of pedagogic power" – supervision, that is, as a form of panoptic power, to be understood within a Foucauldean poststructuralist perspective. Matters of surveillance and control in such a view are inextricable from questions of productivity and effectiveness, in a highly charged mix of positive and negative implications and effects. The move to a digital-electronic environment is therefore usefully understood in terms of the concept-metaphor of the 'superpanopticon' (Poster, 1990; Bigum and Green, 1995), which in this instance means that the increased visibility and accountability of supervisors and students makes for

particular realisations of the notion of 'quality control'. This is a matter that clearly needs to be debated further, in assessing the educational value and social meaning of new technological imperatives and initiatives in higher education. This applies in particular to those associated with the Education Doctorate at Deakin, in its articulation of postgraduate studies, research development, and distance education, within an explicit 'open learning' framework of rhetoric and ideology. In that regard, the social and educational project of 'e-quality' clearly remains an ongoing professional and intellectual obligation, on the part of institutions and individuals alike.

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# MODELS OF SUPERVISION IN THE EdD PROGRAM

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What distinguishes the EdD from other similarly-designated doctoral programs is its distinctive character as a *research*-oriented degree. It combines a structured sequence of units (Phase 1) designed to inform and lead up to the presentation of a proposal document at a formally-constituted colloquium, followed by the preparation and submission of a Research Folio (Phase 2). It differs from other higher degree research work, as in the PhD, in the distinctive nature of the Folio as an organised collection of original productions as opposed to the single extended (written) document of the PhD dissertation. As well, the EdD involves a different understanding of research, its nature and purpose(s), and rather than geared towards knowledge-production *per se*, is intended to contribute to and enhance *both* knowledge *and* practice in regard to specific educational sites. (In that regard it is perhaps better designated as oriented, in a quite specific sense, towards research as praxis, or more simply still as *praxis*-oriented). Further to this, the nature of the distinctive 'project' that characterises postgraduate research work in general is necessarily different in the case of the EdD. Rather than focussed on or addressed to a research topic, in the conventional academic-intellectual sense, it is tied more directly to what might be called a 'topos', a specific place or site of educational-institutional work. To some extent, therefore, this question of research distinctiveness is a matter under constant negotiation between students, supervisors, the EdD course team, and the Graduate Office(s) of the Faculty and the University.

The notion of supervision has figured significantly in discussions and debates associated with the development of the EdD, since it is clear that the degree requires a changed understanding of the supervisor's role and of the relationship between students and supervisors, as well as among students *and* supervisors. A commissioned document was prepared specifically in relation to the EdD, outlining "principles, entitlements, responsibilities and roles" (Saville, 1993), and this has been the main reference point for the one formal account of the program published to date (Brennan and Walker, 1994). Moe recently, there has been a further policy elaboration of the Folio and related examination issues, which serves to clarify and consolidate the distinctive character of supervision *vis-a-vis* the EdD, and what we want to do now is use these various documents as the basis for examining models of supervision and pedagogy in this particular instance. The point to stress here is that while, in practice, there are invariably different 'models' of pedagogy in play in the program, in a policy sense there is effectively just one currently in place, albeit perhaps by default. Our concern is ultimately with making visible and available a *range* of 'models in this respect, hopefully allowing for different supervisory-pedagogic 'styles' as well as for improved educational practice and provision more generally[2]

[1] Extracted from Terry Evans and bill Green (1995) *Dancing at a Distance? Postgraduate Studies, 'Supervision' and Distance Education,* presented at the Annual Conference of the Australian Association for Research in Education, Hobart, November 26-30, 1995

[2] For instance, Burns, Lamm and Lewis (1994) outline three major orientations to, or 'models' of, postgraduate supervision: 'thesis-oriented', professional development-oriented', and 'person-oriented'.

A central claim in developing and defending the EdD has been that it serves to "challeng[e] understandings of supervision" in postgraduate studies (Brennan and Walker, 1994: 226). There are several aspects of this. Firstly it is highly significant that the focus of the work done towards the degree is on the specific albeit changing nature of the educational workplace, essentially one's own, at least professionally. That is to say, the emphasis is on educational practice, both as (and within) an organisation and as (and within) a form of work. This means, further, that it is likely to be much more communal and collaborative than is the usual case with higher degree research, which tends to occur away from the worksite as such, or indeed the research site. By definition, students are likely to have more knowledge and experience regarding their own site(s) of work/research than is the usual case for postgraduate students, as well as in relation to their supervisors. Finally, given the differentiated nature of the Folio it may well be that a student works with several minor (or 'local') supervisors in the course of completing the degree, albeit under the general co-ordination of a major (or 'global') supervisor. What this means is that the relationship between student and supervisor(s) needs to be understood and indeed re-conceptualised more in terms of 'negotiation' rather than 'direction', and moreover as less "private and privatised" than is the usual case in postgraduate studies, with a less hierarchical and more reciprocal structure of authority (Brennan & Walker, 1994: 227).

In the first instance what this involves can be seen as simply an elaboration on what is arguably implicit in postgraduate pedagogy more generally, at least rhetorically, in terms of a shift towards student independence and autonomy. In curriculum-theoretical terms, this can be expressed as a movement from a 'transmission' mode to an 'interpretation' mode (Barnes, 1976), with a further move to be understood within the terms of 'negotiation' (Bloomer et al, 1992) – in effect, from 'teaching' to 'learning', and then onto 'teaching-learning' (Green & Morgan, 1992). This latter needs to be understood, further, as both a necessary relation and a dynamic unity, and as involving a re-worked conceptualisation of teaching as a context or environment *for* learning. This might well be a useful and succinct way of understanding the term 'pedagogy', that is, as 'teaching-*for*-learning'. As such it involves elements and phases of both 'transmission' and 'interpretation', of 'teacher-centredness' and 'learner-centredness', realised in and through a distinct patter of practice over time.

In actual fact this is harder to achieve, as a precarious kind of 'balancing act', than the simple counterposing of the terms 'negotiation' and 'direction' here would seem to imply. A supervisory pedagogy based allegedly on principles of 'interpretation' and 'negotiation' might well be more subtly 'directive' than is immediately apparent, along the lines of Bernstein's (1975) work on 'invisible pedagogies'. '(In)direction' still carries embedded within it the notion of 'direction', and certainly there remains at least implicit in the EdD a traditional understanding of curriculum as 'leading' somewhere, as teleological and indeed linear, with both a beginning and an end, an origin and a destination, notwithstanding a certain 'fuzziness' in this regard. However it is also certainly the case that the whole question of 'design' becomes at once more complicated and more problematical here, and as necessarily realised in and through *practice* – in large part, the practice of exchange, dialogue and negotiation between student and supervisor(s).

Part of what is at issue in assessing the images and models of supervision and pedagogy in the EdD emerge from considering the manner in which the very terms, 'supervision' and 'supervisor', have been deployed to date. For instance Brennan and Walker (1994: 227) make the following point, with reference to the changed circumstances of EdD supervision: "In relation to their own work, the student is more likely to have the over-

view (super-view) than the super-visor". They also indicate that terms such as 'student' and 'supervisor' have, to date, been used "out of habit and for the sake of convenience", while acknowledging that "this has the effect of disguising difference". This is consistent with Saville's 1993 discussion paper, which in may ways identifies closely with the original spirit of the EdD, Saville (1993) recommends that "the system of student support currently described as 'supervision' be reformed to more adequately reflect the thrust of the principles and design of the programme". Rather than the term 'supervisor', he suggests in its place the notion of 'programme consultant', in association with "a range of appropriate consulting tutors" (Saville, 1993: 13)[3]. The separation here is between "supporting a student's development and making prescriptive assessments of their work", or in Connell's (1985b) terms between the 'disciplinary' and 'developmental' sides of teachers' work. The value of such a formal separation lies in providing a solution to a key problem with specific regard to postgraduate supervision: the fact that "[t]he supervisor has to be at different times both a supporter and a critic of the student's work, and sometimes the two together" (Connell, 1985a). This clearly demands considerable sensitivity and skill, pedagogically. Yet it also presupposes a particularly complex supervisory-administrative structure, with a culture in place that encourages and supports interaction an collaboration among different academic staff and due consideration for the need for equity in terms of the allocation of workload and credit. Saville's model puts the onus of evaluation and assessment onto the 'consulting tutor(s)', which could have the unfortunate effect of seeming to replicate and defer to the time-honoured university system of a strong division of labour between 'lecturers' and 'tutors'. Unless safeguards were built into the system in this instance to ensue that the roles of 'programme consultant' and 'consulting tutor' were equally distributed among the academic staff involved, some would find themselves more oriented toward one rather than the other sides of the 'supervisory' work in question here. That might well be acceptable, provided that it is a matter of principle and choice, and formal recognition built into the system along the way. But it could also lend itself to various forms of exploitation, however unintentional that might be. Of course assessment and evaluation here do not coincide with examination, and the possibility of developing a genuinely collaborative culture of supervision needs also to be acknowledged.

It is still the case, however, that an initiative such as this, formally separating out the disciplinary and developmental functions of supervision, but no means assumes a 'more balanced symmetry of authority', although it may well provide "[a] basis for negotiating a research focus" – as well as a research design – "that is quite different from the way such processes usually evolve in the PhD" (Brennan & Walker, 1994: 227). Simply refusing the term 'supervision' and 'supervisor', or perhaps seeking rather to defuse their connotations, may well be neither sufficient in this regard, then, nor desirable. Instead, 'supervision' needs to be more explicitly recognised as a concept-metaphor, as implied in the above reference to 'over-view' and 'super-visor', and hence the evocation of notions such as 'over-seeing' and 'overseer'. The mistake would be to assume that the structure of authority, (epistemic, institutional, and what might be perhaps appropriately called charismatic) can ever simply be put aside in this manner. This might be expressed as a tension arising from the liberal framework within which such discussion often proceeds, as is arguably the case in this instance. A more Foucauldian perspective would be far more sceptical and wary of such moves, and in working with and from a different understanding of power and authority seek among other things to

[3] That such a move may well be characteristic of the rhetoric and ideology of this kind of development in postgraduate studies is indicated in Gregory (1995), who notes that the University of Bristol EdD works with "an 'Advisor' rather than 'Supervisor' model" (Gregory, 1995: 181).

exploit the possibilities, administrative and pedagogic, in the image of the *panopticon*. "Supervision' in this sense is better grasped as a 'pan-optics' of pedagogic power, with due regard for its productivity in terms of securing the best conditions for postgraduate research and training and hence for the formation of appropriate research(er) subjectivities. Here postgraduate pedagogy might well be better understood as a matter of artfully arranging the educational environment for the novice researcher, with 'environment' conceived here as inclusive of resources, information, accommodation, different or multiple perspectives, expertise, networks, 'direct instruction', and so on.

At the same time it is undeniable that the usual situation with regard to the authority relations of postgraduate studies and supervision does not and cannot hold in the EdD. The students are often older and more experienced, sometimes earning more than their supervisors, and more often than not holding down positions of considerable responsibility and authority in their own workplaces. Hence: "In the EdD the student is less vulnerable (retaining the supports provided by home and work), retains expertise in their own area and better placed to arrive at a negotiated contract wit the supervisor" (Brennan & Walker, 1994: 227). Or as Saville (1993: 4) puts it:

> One of the features of the EdD programme which marks it out from other higher education activity is that it involves practitioners who are already likely to be experts in their own field, who are well qualified and carry a wealth of experience.

Correspondingly, the team of supervisors ('consultants', 'tutors') draws its authority from a combination of their general and specific research experience and skills, their 'insider' status and knowledge of the academic institution, and their substantive forms of disciplinary and filed-specific expertise and understanding. This then is the basis for their negotiated relationship, based on due acknowledgement of students' and supervisor's *respective* experience and expertise, within what is described as a "contract of engagement" (Saville, 1993: 5). As much as anything else, then, supervisors operating within such a program framework need to listen more, and more carefully, to 'stories from the field', accounts of practice, in all their complexity, 'otherness', and recalcitrance.

Yet it is also the case that the team, and individual supervisors, retain considerable authority over and beyond that of their students. This is by virtue of the fact that they are usually equipped with what is at once a 'meta-language' and a 'meta-practice' of research, which gives them a different perspective even on those areas of practice and experience in which students are 'expert'. While 'teachers' and 'learners', 'supervisors' and 'students' – researchers all – are likely to learn much from each other, it remains far from symmetrical, in many instances at least, although the situation may well approach such a state in the course of the degree. The very fact that students undergo a first Phase of the program, leading up to the presentation an defence of a Proposal, suggest that it is unwise to overly generalise, or idealise, the prevailing authority relations'; and it may well also be that subsequent work leading up to the submission of the Folio similarly involves different and varying assignments of authority and autonomy, openness and closure.

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# IMPROVING CROSS-CULTURAL RESEARCH SUPERVISION IN AN AUSTRALIAN UNIVERSITY

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## Introduction

My intention in this paper is to contemplate what it might take for Curtin University to provide more effective research supervision practices for its language minority (LM) postgraduate students. The contemplation is built on these premises: a) that at least some of the current supervision practices are less than effective for LM students at Curtin (and probably elsewhere); b) that LM students have special needs for their supervision; c) that there are ways and means (glossed below as a preferred model) for providing more effective supervision practices for these researchers; and d) that supervisors, given the will, are eminently capable of bringing about the proposed 'improvement' (though presumably some of them would require further incentives and/or 'professional development' in order to do so – in which case there are further implications!

What follows is first, a display of some empirical evidence (albeit in a radically reduced form) to support the propositions: that LM students do seem to be experiencing difficulties in their supervision and that these difficulties are somewhat different from those of mainstream students; second, the main focus of the paper, and outline of general principles for more effective supervision practices for LM students at Curtin. (The fourth premise, concerning the propensity and professional development requirements for supervisors to bring about the proposed improvement, will be pursued on another occasion.)

## Evidence from a casse study

As part of a larger study on postgraduate research supervision at Curtin University in 1995 (Barker, Chung, Hall, Low and Shoebridge, 1995), I conducted a case study of 17 international research postgraduates' supervision experiences My brief was to undertake a qualitative enquiry of these students' perceptions, employing face-to-face interviews rather than the questionnaire approach used by the other members of the research team. I had opted for an ethnographic study, believing it to be a more appropriate form of research with students whose first language was not English.

However, some of the potential strengths of such a methodology were lost with my willingness to comply with the wish of my team members to produce data comparable to theirs. For example, by using a more structured approach to the interviewing, and giving ore emphasis to generating frequency distributions, I sacrificed contextual richness and depth of understanding of postgraduates' narratives. Nevertheless, my study, along with those of my colleagues, was deemed useful to others working on policy development in this area (Reeves & Robbins 1995).

Overall, the main differences in the 'findings' I constructed were the apparent precariousness of the LM students' relationships with supervisors and the low levels of satisfaction expressed by the students about their supervision experiences. I believe the first four of the following sample sets of responses show some indications of their 'precariousness':

i. When asked about the allocation of their supervisors, only 4/17 postgrads said they had any input in the decision; of the 13 who did not. Seven were satisfied with the arrangement, the other six said they would have liked a say in the matter.

ii. On the question of choosing their research topic, only 1/17 postgraduates was allowed to exercise complete free choice; 10 had their topics modified considerably by the supervisors, and five of these said they had no say whatsoever in the formulation of their topic.

iii. When asked if they had been well prepared in the English language at the outset of their research programs, only 3/17 postgraduates considered themselves so; of the 14 who thought not, only four undertook formal instruction, though most of the ren regretted not having done sol as it happened, only 3/17 supervisors had advised their students in this matter, but, interestingly, the postgraduates did not blame their supervisors- most attributed their decision to forgo English instruction to their (the postgraduates') perception that it would take up too much of their time.

iv. As for the postgraduates being informed about their rights and responsibilities, as per the guidelines and regulations, only 1/17 thought they had been well informed; 12 claimed they had not been informed at all; with respect to receiving information about their material entitlements, such as availability of c computer, there was a similar response – most had had to rely on informal students networks for this information, and five respondents confided that they felt either too shy or too afraid to ask staff about these matters.

The final response set pertains to postgraduates' general wellbeing and cultural identity, not at first glance pertinent to the research supervision act but, I argue below, an important aspect of empowerment for the LM student:

v. Twelve of the 17 in the sample were asked if they had received recognition and support for their cultural identity by Curtin; 3/12 said they were satisfied – two of these were Indonesian postgraduates who were pleased with the interest shown by the supervisors about Indonesia; the other was a Singaporean who proclaimed, somewhat magnanimously, "Australians respect Singaporeans"! The other nine stated they had received no such recognition or support from staff at Curtin, but six of these (mostly Indonesians) said they were getting good support from fellow Indonesian and other postgraduates, and from people outside the university in their respective churches/temples. One respondent, an African, suggested that many things could be done to make the campus a friendlier place for minority groups, such as providing in the library at least one newspaper from their part of the world.

I provide no further interpretation or analysis of these responses in this papers and, with the economy of time and space befitting this conference, move swiftly to reflect on a possible pedagogy for minority students at Curtin University.

**A preferred supervision model for LM postgraduates**

In contemplating what is needed for more effective supervision of LM research postgraduates, I draw on the perceptions of participants in the aforementioned study and on my own experience as a cross-cultural teacher and supervisor. But I am especially indebted to the ideas of Cummins (1988). Cummins contends that minority education programs driven by a 'liberal ideology' – typically under the rubric of multicultural

education or cross-cultural education – have been ineffectual because they have not addressed the power relations between the dominant and the dominated (cf McConnachie and Kapferer, 1981). Cummins favours a policy framework informed by critical theory (i.e. a neo-Marxist, action-oriented ideology) which typically employs the nomenclature of anti-racist education.

Though I concur with Cummins' basic posture, I am somewhat chastened by the realisation of having contributed to 'liberal; ideological policies and practices; and even as I strive to adopt a more radical stance, being a being West Australian, I am culturally bound to speak with a softer tongue and use terminology like anti assimilationist education!

In pondering effective minority education programs and practices, Cummins (1988, p. 138) givers primacy to the interactions of educators and students; however, he claims these interactions are mediated by the following key **institutional characteristics** (minority parent participation is omitted here because it is deemed of little relevance to the tertiary sector), and the extent to which these characteristics are adopted in the role definitions of educators:

1. **Minority students' first language (L1) and culture are incorporated** into the educational program, this minority language/culture is regarded as an add on (i.e. 'additive') rather than as a replacement for first language/culture (i.e. 'subtractive');
2. The pedagogy (teaching and learning practices/strategies) promotes students **using their language(s) actively** in order to generate their own knowledge, rather than emphasising the transmission of pre-determines knowledge (i.e. 'filling of the empty vessel'); and
3. When it comes to assessment, **educators become advocates** for minority students, e.g. by focussing on how students' academic difficulties are constructed by interactions within the institution, rather than legitimising the location of the 'problem' as only within students.

Now to apply Cummins' three key characteristics, along with other resources, to a consideration of how research supervision of LM postgraduates at Curtin (and elsewhere) may be improved:

a) Cultural/linguistic incorporation

In his meta theoretical deliberations Cummins points to the weight of evidence in favour of minority students' first language (L1) being 'incorporated', i.e. being included, in education programs. Focussing on primary schooling, Cummins asserts that incorporation ensures "Both the more solid cognitive/academic foundation developed through intensive L1 instruction and also the reinforcement of their cultural identity" (1998, p. 139). However, at the tertiary level in Australia there are very dew instructors or supervisors able to communicate with LM students in their L1, and given that LM students have at that stage acquired full literacy in L1 it is not such an issue. Nevertheless, it is surely important for supervisors of LM research students to have a clear conception of their role as facilitators of these students' literacy development in the dominant language. This the following postulation by Cummins has relevance for the tertiary supervisor:

> Educators who see their role as adding a second language and cultural affiliation to students' repertoire are likely to empower students more than those who see their role as replacing or subtracting students'

> primary language and culture in the process of assimilating them to the dominant culture. (p. 139)

Tikunoff is another researcher in the field of minority education who emphasises the need for reachers to take advantage of LM students' L1 and cultural experience. Tikunoff (1983) reports that incorporating aspects of LM students' home culture tends to promote engagement in instructional task is and to contribute to a feeling of trust between the students and their teachers. It is interesting to note that LM postgraduates at Curtin, when defining what constitutes a "good supervisor", place a lot of importance n the respect shown by supervisors to their (the students') cultural background (Hall, 1995).

In our institutions policy development on literacy is well underway (Curtin Policy, 1995), but I believe more consideration must be given to the special needs of LM students. I have argued elsewhere (Hall and Bell, 1995) that LM postgraduates in research programs have different linguistic needs from other students, in line with their main tasks of research writing, and that their post-program linguistic requirements ought to be carefully considered. For example, for those postgraduates who are returning to situations where increased English proficiency will not enhance their professional standing it may be possible to design with and for them a program with diminished English literacy requirements. It is also possible that arrangements could be made for the examination of these students' theses in their L! (Martinez, 1995). The others, who put a premium on acquisition of English literacy, will profit from intensive and sustained conversation and writing programs. These are just some of the possibilities for empowering LM research students through cultural and linguistic incorporation.

b) Pedagogy to promote active learning

Cummins (1988, p. 143) refers to several pieces of research which demonstrate that students "designated 'at risk' typically receive intensive, formal instruction that confines them to a passive role and induces a form if 'learned helplessness'". The alternative model, more conducive to their empowerment, encourages students to be active, independent learners who 'negotiate the curriculum' (Boomer, 1982) and construct their own knowledge

An important dimension, according to Cummins (1988, p. 143), is the degree of control exercised by the educator over the classroom interaction. The situation where extreme control is exercised may be characterised as the 'transmission' model; which positions students as having a high degree of control in setting their learning goals and in achieving these goals. Cummins (1988, p. 145) contends that the transmission model of pedagogy is not conducive to genuine multicultural (or cross-cultural) education because it "entails the suppression of students' experiences and consequently does not allow for the validation of minority students' experiences in the classroom".

At the tertiary level it would seem that active cross-cultural learning is eminently achievable, if two action research projects undertaken by Curtin lecturers to improve their cross-cultural teaching are anything to go by (Hall, in press). In these studies, one of the schools of business and the other in engineering, minority and majority students were teamed up and required to work collaboratively on learning projects. Most students appreciated the opportunity for cross-cultural co-mingling and, as a better learning of key concepts and knowledge. Wong-Fillmore & Valdez (1985) and Garcia (1989) likewise linked more effective cross-cultural pedagogy to classroom discourse with high degrees of teacher-student and student-student interaction.

The implications of the preferred pedagogy for LM postgraduates' research supervision are fairly obvious. Because many LM researchers experience difficulty with their thesis writing there is a reported tendency for supervisors to dominate and even to take over the authorship completely; whilst this is usually well intentioned, it had the potential to be damaging to the relationship and to the self-esteem of the student – to say nothing of the ethical implications! For example, as reported else where an Indonesia postgraduate, 'Namo', "complained that his supervisor always pushed him to write in the supervisor's style and always found Namo's expression to be incorrect – which Name found to be 'dehumanising'" (Hall, 1995, p. 3)

This does not mean that supervisors should not be strong leaders. Indeed, this is another characteristic favoured by LM postgraduates in their supervisors. But though there is bound to be some deference shown by research postgraduates to their supervisors, 'reciprocal interaction' seems a useful ideal for both parties to strive for. After all, many of the LM postgraduates are already professionals in their field and those who are not are expected to be independent, autonomous learners by the completion of their programs.

c.) Advocacy in assessment

Cummins (1988) is convinced that 'psychological assessment' has served to downgrade the academic of minority students in the Western world by locating the academic 'problem' within the student, thus:

> Screening from critical scrutiny the subtractive nature of the educational program, the exclusionary orientation of educators towards minority communities, and transmission model of teaching that inhibits students from active participation in learning. (p. 145)

In other words if the only tools available to the assessor are psychological tests then it is inevitable that a student's difficulties will be "attributed to psychological dysfunctions" (ibid, p. 145; cf McConnachie, 1982). And this serves to remind us that there is no such thing as a culture free assessment – all tests have terms of reference which favour a particular set of 'culture capital'.

For Cummins (1988, p. 147), non-discriminatory assessment means at the very least the minority students' linguistic background must be taken into account when crucial tests or placement decisions are being made that will seriously affect the student's future. The preferred role definition, then, is one of "advocacy", wherein educators should delegitimise the traditional forms of assessment and "become advocates for the student in scrutinising critically the social and educational contexts within which the student has develo0ped" (ibid, p. 148). Presumably this would entail educator intervention to ensure that LM students are not discriminated against in their assessment; in extreme cases this could mean educators refusing to use certain forms of assessment of modifying them to allow the minority students a more culturally appropriate opportunity to demonstrate their ability.

At the tertiary level and attempt to change established assessment practices is bound to be controversial because these are central to the organization and conceptualisation of established fields of knowledge and their power bases. For example, in my institution what constitutes 'real' research is grounded in a positivist epistemology, and any attempt to challenge the orthodoxy a hard-fought affair! Notwithstanding the resistance to change, I note that academic staff at Curtin are showing signs of being more aware of the disabling aspects of some forms of assessment for LM students and this awareness is being manifested in school policies and strategic plans. One small but significant

change in University policy in recent hearts has been the allowance of extra time in examinations for students who qualify on the basis of a disability of LM status. There are also special conditions for entry into the University which apply to LM students, but it is often a matter of 'sink or swim' once minority students have gained entry, with an assimilationist ethic holding sway - especially in the case of undergraduates.

From personal observations and anecdotal evidence it would seem that at Curtin LM postgraduates are assessed in a much more sympathetic, if not culturally sensitive, manner than undergraduates and the new result of the former is more equitable. However, in policy terms, an advocacy-based form of assessment for LM research students needs to9 be explicated. At present too much is being left to chance in all aspects of supervision, and without some clear guidelines along "anti-assimilationist" lines there is a danger of there being serious casualties in this ever-vulnerable population.

**Concluding Remarks**

This paper has grown out of a perceived need for me to be more explicit about the difficulties facing LM research students, as constructed by my research; and, in a more speculative frame, about possible ways of addressing these difficulties. Not all LM students are "at risk" – in a university environment in which we are becoming aware of out cross-cultural responsibilities (Curtin Policy, 1992), but in my view we have a long way to go.

However, despite the rather laboured and earnest manner in which I have begun to examine policy ideas for improving cross-cultural research supervision in this paper, I am pessimistic about improvement being achieved by a well-articulated list of do's and don'ts. Written policies and regulations do have their place, and at times they are downright useful. But in terms of bringing about widespread improvement, I believe, it is the **process** of policy development – the debates and contestations (towards which, hopefully, this paper night contribute) – which are likely to be more consequential than any policy **product**.

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# Challenging prevailing discourses in Higher Education: The role of trust in the research process.

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## Background to the paper: valued experiences and recent developments in higher education

This paper has evolved out of my experience as a postgraduate student of political theory, other experiences as student and teacher of piano, as well as several years of participation in research projects looking into higher education processes and policies. It is a response to the increasing role what could be called discourses or rationales that have developed in contexts external to what has traditionally been viewed as the university sector, have been playing in shaping the conduct of higher education. I am referring here to developments which translate for academics into increasing pressures to fill quotas and produce publications in quantities dictated by formulas developed outside the university; to carry out monitoring procedures which have been imported from industry management models, and to engage in specifically self-promotional activities. In a subtle way these developments which have come about through what I am calling here 'external' pressures seem to be pushing the academic community towards more competitive, more instrumental ways of relating with each other and to their work, and less subtly, taking precious time away from teaching and research.

In this paper I argue that these developments diminish the chances of aspects of what I have valued as a student taking place within universities. Examples of valued experiences include: the excitement of being challenged and extended to my intellectual limit by a respected teacher or fellow student; the feeling of being in the good hands of a highly experienced teacher with finely tuned skills in the discipline; and a sense of belonging to a community connected by a shared commitment to the discipline (be it political theory or piano). I am not suggesting that all of my student experiences have had these qualities, or that these experiences are *necessarily* associated with a more traditional view of academic research. Rather, that some recent developments in the way higher education is being talked about and organised, are mitigating against the chances of such experiences taking place.

Central to my argument is the notion that these external pressures on universities are having a negative impact because of the *way in which* they are being accommodated by the academic community. Examples of the implications of some of these pressures include: stricter time constraints effecting the nature of PhD projects undertaken; funding tied to completion rates resulting in establishment of more Masters by Coursework Courses and at the undergraduate level; the need to attract students to the department leading to modification of course content and topic names.

These developments are not necessarily in themselves a bad thing. What *is* crucial for the sorts of educational experiences I am defending here is, *who* is making these decisions? Who is taking responsibility for them?

I will argue below, that it is crucial for what I, and I assume others value about the experiences which take place within what I will call here a'disciplinary culture', that those who undertake research and teaching within a discipline, acknowledge the criteria by which they are making academic and organisational decisions, and take responsibility for them. When these criteria have not evolved through the discipline, and are not valued ('owned') by those making the decisions, this needs to be explicit. Clearly in most cases quotas need to be filled, PhD's need to be completed. I am not suggesting that demands made by external pressures should be ignored. Rather, that researchers and teachers need to sort out how best to meet external demands without jeopardising what is valued within their discipline.

How does failure to do this undermine the chances of the sorts of experiences I have valued as a student taking place? Common to the sorts of experiences I am affirming here seem to be on the part of the teacher or student a commitment to and understanding of the values and practices embedded within their disciplines. When the commitment to policies and practices are not there, the morale, the sense of common purpose, the willingness to do more than is required seems to be undermined. The best teachers I have worked with have been prepared to take risks and go beyond the minimum required of them by their institution. They have had the confidence, which in my view comes from depth of experience within the discipline, to take the risks involved in teaching in ways which are sensitive to my particular needs as a student at a given time. This seems to have involved being prepared improvise, to not be *afraid* that they may be breaching codes of conduct, being prepared to *not* know what is going to be needed until they have, with sensitivity, gaged the my particular situation at that particular time. At times has this involved them saying they are *not* the best person to answer that particular question and suggesting someone else. At other times this has involve their

taking the risk of saying: stop wasting my time and come back when you've done the practice or restructured the paper.

The point I am making is that their decisions seem to have been made in terms of what their experience tells them the *discipline demands* as well as what is needed from them in their role as a teacher at a given time. Making sure that I think they're a nice person, proving that they are an expert, ensuring that they are acting within written codes of conduct do not seem to have been the crucial factors which have informed their actions.

Central to this paper is the notion that this confidence and commitment comes from experience in relation to *a particular discipline*. While policies and procedures generated external to the discipline may be useful, legitimate within other social structures, valuable, necessary for survival, they need to be evaluated by those engaged in research and teaching in terms of what the discipline they are working within demands. Unless these people take on the responsibility of evaluating externally developed policy they are faced with, in terms of the implications of such politics for their discipline, and incorporating or rejecting these developments accordingly, academic autonomy, and the disciplinary culture that supports it will be eroded.

**What this paper sets out to do**

This paper is critical of the view that the recent shift towards a "consumer culture" within universities is inevitable, and provides a framework for defending valued practices in universities, arguing that those who value aspects of a disciplinary culture can provide a defence for it by affirming what is *unique* about research that takes place within universities.

The paper provides an overview of recent developments in higher education terms of academic autonomy and responsibility, looks at the role of Postmodern critiques of Enlightenment concepts in relation to these developments, and argues that this critique does not necessarily involve a wholesale rejection of the use of terms such as KNOWLEDGE and TRUTH. The paper then turns to the concept of originality, and suggests that building on a traditional definition, this term can be usefully interpreted to defend the sorts of practices and experiences I have indicated I value as a student.

**The Current context: Academic Autonomy and Responsibly**

Over the last decade there has been a steep increase in involvement of federal government policy in shaping the activities within higher education institutions. Particularly since the Dawkins Green and White Papers in 1987 and 1988, government

policy has increasingly effected the way academics think about, as well as go about their work. The increase in government involvement in universities has been on several fronts: promoting greater accessibility through equity initiatives and increases in student numbers; provision of scholarship and other incentives for joint industry/university research initiatives; rewards for participation in Quality Audit Rounds; incentives for amalgamation between universities and former Colleges of Advanced Education and between smaller universities. At the departmental level this has meant the adoption, as routine, procedures such as teaching evaluations, close monitoring and recording of postgraduate student progress, and the recording of research outputs. These developments have clearly exerted pressures on individual researchers and departments to make decisions about their fields of research, curriculum content and structure, resource allocation, and public profile, more in terms of the need to compete for scarce resources, and less in terms of criteria which have evolved through processes internal to their discipline, or what are often termed *academic* considerations.

These developments can be viewed as a consequence of the universities' failure to protect their (traditionally) prized autonomy by ensuring that they were sufficiently responsive to the social structures which supported their position. Miriam Sawer foresaw the impact that external pressures would exert on universities in 1987 in her presidential address to the Association for Political Studies. She stated: 'The fact that the universities have done so little to exercise academic freedom to positive effect in our society, means that they are in a correspondingly weak position to negotiate over the kinds of applied research and other social responsibilities they are increasingly being expected to undertake' (Sawer, 1987: 1).

The recent emphasis in universities on monitoring, and the need to compete through performance indicators can also be viewed as a consequence of the university sector's failure to take the initiative in ensuring consistently high quality research and teaching. Reporting on his mid - 1980's investigations of universities across Australia, Paul Bourke saw a need for an across-the-board development of a 'culture of evaluation and self-assessment, especially at the departmental level, which is an integral part of any professional activity' (Bourke, 1986: 39). In his 1986 report to CTEC: *Quality Measures in Universities*, Bourke warned that 'Without the development of a more energetic culture of evaluation ..... the universities will remain unprepared to engage in that *negotiated evaluation* where by external authorities seeking to intervene more actively in the specification of university activities will have to confront a body of evidence and practice produced on terms which the universities themselves will have

identified (Bourke, 1986: 47, my italics added). Bourke wanted to spare Australian universities from the 'show of activity' involved in competiting for scarce resources through a set of performance indicators, which he saw in Britain in the 1980's, or the type of situation he saw in the United States where universities were locked into providing (expensive) evidence of their performance for a 'complex and demanding set of constituencies with legitimate expectations' (Bourke, 1986: 45).

Bourke recommended that academics take more seriously their responsibility, as professionals, for more 'systematic and sensitive' intramural evaluation, insisting that evaluation was a task for academics themselves. He called this the 'voluntaristic maintenance of quality'(Bourke, 1986: 46).

One decade later and Australian universities have participated in their own 'show of activity' with the Quality Audits Rounds, and extensive data collection processes are now routine throughout the sector. The establishment and continued existence of these processes, as has been argued above, can be viewed as a failure on the part of the academic community to take the initiative in ensuring its protection from the fiercer winds market forces, by demonstrating, in its own terms, the value of its activities to the wider community.

I have looked at these interpretations of the causes of government intervention in universities, as they emphasise the link between academic autonomy and responsibility, and the universities' failure to take up the challenge of protecting that autonomy.

Arguably the need to defend the autonomy of higher education institutions has come at a time when the resources available to universities to defend their autonomy have been eroded by developments in social theory. The folowing discussion outlines how the prominence of social theories often collectively labelled 'Postmodern', has contributed to the erosion of the legitimacy of the notion that university research could be defended as a good thing, regardless of its ability to contribute to the economy or score well against quality indicators.

In his article *Postmodernism and Quality* Barry Harker argues that the collapse of rationalism, coupled with rise of technology this century have lead to fall in the structures which legitimated universities as valued entities in themselves, worthy of a high level of autonomy (Harker, 1995: 31). By the 'collapse of rationalism', Harker is referring to the theory that particular forms of human knowledge can no longer be privileged as being more legitimate than others. In particular, that the Western

intellectual Enlightenment project to uncover the TRUTH through the use of Reason, has been rejected. With the fall from it's privileged position (in the West) of this 'pure' conception of knowledge, greater legitimacy has been given to other forms of knowledge, particularly those which involve sophisticated technology. Drawing on the work of Lyotard, Harker suggests that increasingly sophisticated information-processing technology has lead to the scrutiny of institutional activities in terms of in-put and out-put equations. The very existence of this capacity, coupled with the fall of 'pure' forms of knowledge, has given rise to the privileged position of 'knowledge' that can be processed into quantifiable information (Harker, 1995:32). An obvious example of this trend is the increased dependence on the collection of statistical data to determine the relative merits of different universities. Harker concludes his paper with the gloomy comments that 'It appears that the university sector must regain its autonomy or risk remaining captive to economic policy, indefinitely. If universities fail to restore their traditional autonomy quickly, the era of the university as a liberal institution may be over'(Harker, 1995: 38).

The failure of the academic community to acknowledge the responsibilities which go with a position of autonomy, and the fall of Reason, are useful explanations for the increase in government intervention and the rise of instrumental views of higher education. However, as I will argue below, they do not represent the end of the story: academic autonomy is still worth defending, and in spite of the fall of Reason. The following discussion is critical of a position put by Cullen and Allen that suggests that an instrumental view of higher education predominates and there is nothing we can do about it.

**An instrumental view of education is not inevitable**

In their article entitled 'Quality and "Efficiency and Effectiveness"' Cullen and Allen argue that attempts to define PhD research in terms which appeal to idealistic notions such as 'quality' or 'truth' are outdated and pointless. For them these are figments of the Enlightenment "grand narrative" imagination: In these post-modern times where relations can only be viewed in terms of power and interest, such 'modern thinking remains with us, but only as a nostalgic simulation, an advertisement for a past which has passed' (Cullen and Allen, 1993: 106).

They argue that without the ideals of modernity to use in debates about the conduct of PhD education, these debates are now conducted in what they term the "language of consumerism". 'Essentially,' they write, 'the consumerist nature of late capitalist society has turned the debate over quality and competency in the higher education

system into a debate in which customer service and consumer relations are becoming the test of quality. The most public comments by universities on quality can be found in advertisements (in both the print and electronic media) which seek to entice prospective customers into purchasing what higher education has to offer' (Cullen and Allen, 1993:106).

They assert that students and academics are increasingly seeing themselves as consumers of PhD education, each with their own needs and hence their own conceptions of quality. They explain various trends in student or academic behaviour in instrumental terms. Phenomena such as over-long completion times in higher degrees are explained as a strategy on the part the students to maximise their chances in tight post-doctorial job markets. Similarly they explain the supervisor's view of what constitutes quality in PhD processes and outcomes in instrumental terms: They explain that supervisors' views of what constitutes a quality PhD will depend on what best enables them to reap an "academic return" on their investment of time spent working with students on projects. For Cullen and Allen, this explains why increasing the industrial skills of PhD students is not a priority for many academics, as it does little to increase the immediate "academic return" to the supervisor. Further, and unlike supervisors, universities, who "consume" PhD education by selling the products of that education to external "consumers" (ie potential employers of graduates), have greater reason to meet the quality needs of those external "consumers" (Cullen and Allen, 1993: 108/9).

While I do agree that this instrumental view of Higher Education is an increasingly dominant one, I reject the *uncritical* way in which Cullen and Allen present this view. In their paper they privilege this way of viewing human motivations and actions, asserting that it is fruitless, to 'stand against' this language of consumerism, as some academics have tried to do, for "we" being consumers ourselves are 'spoken *by* that language'. For them, the crucial issue in debates about what constitutes quality in higher education, is *who* the consumers of higher education are, and therefore, whose definition of quality in education should prevail (Cullen and Allen, 1993: 105-106).

Brian Crittenden foresaw the dangers of a view of higher education which can see debates about the definition of quality education and legitimate knowledge *only* in terms of who has the power to promote their own interests, and hence, the power to promote their own point of view. In 1989 he wrote :

'A more subtle threat to academic independence comes from those within the universities who espouse various forms of radical epistemological relativism. If what

we call knowledge is largely a reflection and instrument of group interests (class, ethnicity, gender, etc.) in the struggle to hold or gain political and economic power, there is no significant common ground of intellectual values against which the proper neutrality and commitment of the university can be assessed' (Crittenden, 198?: 89).

Along with Crittenden I am concerned about the consequences of privileging a view that can only see human action as driven by interest and power. However, in my view, what he calls 'forms of radical epistemological relativism' must be taken seriously by contributors to debates about higher education. First, because like it or not, notions about the relativity of knowledge already have a dominant place in these debates. Second, because taking seriously the *relational* nature of concept-based language and discourse, opens up possibilities for taking human actions more seriously.

**The notion of the relational nature of language as a useful tool**

One of the valuable insights of political theory in this century has been into the relational nature of language. By this I am referring to the notion that our understanding of different concepts is dependent on an infinite web of other concepts. Cullen and Allen have used this insight to critique the privileged position given to the concepts TRUTH and KNOWLEDGE in the "Enlightenment Grand Narrative" of Modernity. What they have failed to do is acknowledge that their view of recent developments in higher education privileges another "Grand Narrative", one which views human relations only in terms of power and interests. In contrast to Cullen and Allens' position I am suggesting that where people are able to mentally step outside of relations of competition and consumption, and critique these relations, there is the possibility for thinking, speaking and living within an alternative framework.

What is exciting about a view of language which emphasises the interconnectedness of concepts, and which suggests that there is nothing about language which necessitates the privileging of any particular discourse, is the opportunity it opens up for individuals to make choices about how they think about their lives, and to make decisions about which discourses they will privilege. This notion can be used to suggest that rather than automatically privileging certain concepts and certain discourses, we have a responsibility to draw more on our experiences, sensations, intuitions and feelings to make choices about which concepts we will privilege.

**Concepts traditionally associated with universities which can point to valued experiences or processes**

To return to the central purpose of this paper: providing a defence for the sorts of experiences I value as a student. Concepts such as academic autonomy, collegiality, and originality, may be useful to this end as they acknowledge the possibility for shared understandings and rationales for organisation based on participation in disciplinary cultures which are not organised around relations of consumption, but rather, commitments to abstract ideals of disinterested scholarship. As we have seen it is possible to view these ideals as simply legitimating academia's hegemonic relationship over knowledge - and it is likely that this is an appropriate critique in some contexts. However, power and domination is not the only motivation behind the use of ideals pointed to in words such as 'truth' and 'disinterested scholarship'. While these notions have been used as instruments for discriminatory and exclusionary practices, they are also notions which acknowledge the possibility of other sorts practices, including ones which are deeply valued.

Earlier in the paper I suggested that the best way to defend what is valued in the university is to affirm what makes research activities in the university *unique*, rather than wait for other sectors to define research parameters. In the following I outline an interpretation of the concept of originality, a term which is central to what is unique about research processes within a university.. At this stage I am still struggling with the idea, so the following comprises only the early sketches of an on-going project.

**Original Research: an Interpretation**

Original Research is defined below in terms of the attributes it requires of the researcher, and the processes involved in the production of original research.

Original research suggests:

• that the researcher is able to grapple with the unknown, working critically within, and ultimately beyond disciplinary constraints

• that the researcher has the ability to make his or her own decisions about what is and is not consistent with the discipline, and have be ability to judge where it is feasible to attempt to bridge the gap between the two

• that the researcher has the freedom to make these decisions, but also takes responsibility for making them.

Clearly this does not attempt to include all the sorts of research that takes place within a university, but rather outlines the nature of the sort of research that is unique to the university.

The points above are probably quite familiar from debates about what constitutes originality in the PhD. To these I would like to add another characteristic of the production of original research which may be more readily understood in relation to other creative activities associated with the arts. That is, that the production of original research - like other creative/artistic pursuits and disciplines - requires that the researcher is able and prepared to undertake the work, from moment to moment as the research takes place, without referencing their personal identity. Clearly this is an odd sort of concept. In relation to the arts this notion may be more readily accessible. We can think of artists or musicians who have developed such facility in their field that they are at some point able to let go of, or at least take for granted, the techniques of their trade and the rigidity of the tradition in which they are trained, in order to go beyond what has gone before. Through their experience and their training they are able to practice according to their artistic/scholastic "instinct" or "intuition" which, at the moment of creation or performance has nothing to do with the sense of self.

What I am suggesting is that this experience of acting without reference to the self, but rather through the mastery (for want of a better term) of a discipline is central to what makes original research. Many of us may be able to relate this experience of acting without conscious reference to our identity - perhaps in relation to activities we engage in everyday, for example playing a sport, riding a bike, cooking a meal. The only difference is that the highly creative, 'original' activities discussed here are perhaps more complex, and require years of disciplined practice to be able to engage in them with the confidence required to do so without continually 'self-referencing'.

Clearly, this notion of originality is the antithesis of instrumental views of research, which view the 'self' or groups of selves (ie industries and sectors) and their interests as central.

**Conditions which foster original research**

To conclude, I'd like to suggest that the production of original research as discussed above is best fostered by certain conditions which do not, most of the time, flourish in competitive environments. So far I have emphasised in the interpretation of the notion originality above, that the student must ultimately take responsibility for the research decisions taken. Little has been said about the role of the supervisor or fellow students in this process.

As has already been stated, concepts more traditionally associated with postgraduate research point to much of what I value as a student. In particular there are several prominent metaphors which suggest relations which are not competitive, but are built on trust. These metaphors include the notions of the master/apprentice, of collegiality and of communities of scholars which, at least for some conjure up suggestions of membership, close collaboration and almost familial ties. These concepts my useful resources for those engaged in research and teaching wanting to identify, articulate and discuss features of existing practices in universities they value and want to defend.

**Concluding comments**

This paper has attempted to defend what I value about participating in higher degree research in a variety of ways:

• By noting some of my the experiences I value as a student, hoping that this may trigger in others acknowledgment of their own valued experiences

• By suggesting that maintaining a disciplinary culture requires that those engaged in research and teaching are explicit about which considerations inform their decision making: criteria which have evolved through practices internal or external to their discipline

• By proposing an interpretation of *originality* which, in contrast to the 'language of consumption,' affirms the possibility of working in ways which do not engage self interest

• By suggesting that theories which assert the relational nature of language may be used to affirm our capacity to choose how we think about what we do

• By arguing that terms like 'truth', 'autonomy', 'academic community' do not necessarily imply an elitist view of knowledge, but may be useful to the extent that they point to valued experiences within universities

• By arguing that autonomy only comes when people are prepared to take the responsibility that goes with it

It is hoped that the previous discussion has underlined the point that those teaching and researching in universities have a particular responsibility to defend valued practices and organisational structures associated with teaching and research, simply because they have an understanding of these practices which comes from *experience.* If researchers, teachers, artists, writers and other creative people do not somehow convey what is unique and valuable about what they do, in and for itself, and not just in terms of its ability to serve industry or the national economy, they will lose the patronage which enables them to continue to carry out their activities relatively free from unwanted intervention.

Finally I would like to conclude with one supervisor's comment reported in a recent study of student and supervisor experience. He stated:
*It is a daunting experience doing a higher degree, I think, because you're shooting arrows at a target but you don't know where it is, or how big it is, or even in what direction it is, and you're trusting other people to give you that information. And even when you think you're shooting perfectly at the bullseye, you're relying on other people to tell you whether you've hit the bullseye* (Parry and Hayden, 1994: 62).

In spite of its references to shooting, targets and hitting things I think is a useful quote as it captures the discomfort and the uncertainty involved in undertaking a postgraduate research. It points to the risks that need to be taken, even the pain that is part of any growing, learning process. It captures that tension between dependence, interdependence and independence that is pointed to in master/apprentice, rite of passage metaphors. It suggests that students are most likely to take the risks necessary to produce original work, when they are working with the support of an academic community that can be trusted to signpost the path along the way.

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# SO LONG AS WE BOTH SURVIVE, AND YOU GET YOUR PhD

*Glenice Ives*

## Background to Study

Nursing is new to the tertiary sector and new to the development of research degrees and a research culture. I went to the literature on research degree supervision to assist me, and became so interested that I ended up enrolling in a PhD degree in the area. Whilst the literature outlined many attempts over the years to improve graduate education, the attempts have almost exclusively addressed the structure of graduate education, for example, the development of graduate schools; joint supervision or supervisory panels and departmental support for supervisors; increased coursework, seminars and progress reports for research degree students. Whilst acknowledging the importance of these structural changes, and also the professional and academic aspects of the student-supervisor relationship, I decided to explore what is actually happening within this significant relationship. Phillips (1979, p.339) described this relationship as "a comradeship of extraordinary intensity' and "intimate in every sense of the word".

Set within the context of a personal and interpersonal relationship, I am exploring the nature of the supervisory relationship with a particular focus on supervisory style and how autonomy and power are negotiated and managed within the relationship. With completion times in the vicinity of three to four years for full time students (and often double for part timers) the supervisory relationship tends to be a lengthy one necessitating a longitudinal study. Initially supervisors and PhD students were invited to complete the Role Perception Rating Scale developed by Ingrid Moses and indicate their willingness to participate in a series of interviews over the next three to four years. Only supervisors and students forming matched pairs will take part in the longitudinal study. What I am going to share with you today are some of the difficulties I encountered on deciding to undertake such a journey, and some preliminary data on the similarities and differences in how a number of students and supervisors regard their respective roles in the supervisory process.

## Gap Identified, Question in Hand, but so far the Path has met with Trials and Tribulations

Where I work and study there is an institutional requirement that all students and staff undertaking research involving human participants get ethical approval from the Standing Committee on Ethics in Research on Humans prior to commencing data collection. For my study ethical clearance did not come easily. The problems did not seem to centre around ethical issues. The explanatory statement was clear, participation was voluntary, participants could withdraw at any time, written consent was to be obtained and confidentiality was assured. Delays in ethical clearance seemed to focus around what the study might unearth in relation to supervisory practices. There were discussions about placing an embargo on the thesis. But what about publishing, do you want to publish the findings I was asked. Then common sense prevailed, some good supervisory practices may be detailed!

Secondly recruiting participants was problematic. Research degree students in informal discussions said what a wonderful idea and were very interested in the study. But supervisors won't participate they said. Wrong! After two mail outs (plus a follow up for the first

mailout) only 23 out of 148 students (15.5%) have agreed to participate compared with 39 out of 107 supervisors (36.5%). It is acknowledged by the researcher that the ongoing time commitment for participants may have been daunting to many prospective participants.

**Preliminary Findings**

The Role Perception Rating Scale was used to ascertain supervisors' and students' perceptions about a number of roles and functions that occur during the supervisory relationship. Whilst acknowledging that Moses didn't intend the scale to be used for research purposes, it was thought that it might provide valuable insights into the relationships of students and supervisors forming matched pairs in the longitudinal study. Criticisms of the scale include variation for particular students, and variation for the stage of the degree the student is undertaking. Having said that, there are some interesting similarities and differences between the responses of students (n = 23) and supervisors (n = 39). There is no suggestion that these findings are generalizable. The rating scale uses five points, and a score of 1 puts the role responsibility with the supervisor whilst a score of 5 puts the responsibility with the student. Obviously there are variations in between with 3 neutral, <3 more with the supervisor and >3 more with the student.

**Topic/course of study**

In relation to whose responsibility it is to find a promising topic students felt it was their responsibility. They had a mode of 5 and a mean of 4.24. Supervisors were more likely to see this as a joint undertaking between student and supervisor with a mode of 3 and a mean of 3.19. It is acknowledged that the different cultures in arts and science lead to differences of opinion in this area.

There was general agreement between students (mode = 5, mean = 3.70) and supervisors (mode = 4, mean = 3.68) about the choice of a theoretical frame of reference for the study. Both groups saw it more as the right of students than supervisors.

Likewise there was general agreement between students (mode = 3, mean = 2.74) and supervisors (mode = 3, mean = 2.81) about the development of an appropriate programme of research and study. It appears that both groups saw this as a joint responsibility.

**Contact/involvement**

Both groups tended to favour purely professional relationships over close personal ones, although the means indicated this was not absolute and there was room for negotiation in this area (students: mode = 2, mean = 2.61; supervisors: mode = 2, mean = 2.72)

In relation to who should initiate frequent meetings, supervisors saw it as their responsibility (mode = 1, mean = 2.13). Students were more likely to view it as a shared responsibility (mode = 3, mean = 2.57), although the means indicate there is a slight leaning towards the responsibility lying with the supervisor.

Both groups agreed on a midway position regarding the supervisor knowing which problems the student was working on, and students having the opportunity to find their own way without having to account for how they spend their own time (students: mode = 3 & 4, mean

= 2.74; supervisors: mode = 4, mean = 2.64). Although the modes put this role slightly with students, the means indicate that overall there is agreement towards supervisory control.

Likewise there is general agreement for a negotiated position regarding the supervisor terminating supervision if s/he thinks the project is beyond the student and the supervisor supporting the student right through until the thesis has been submitted, regardless of his/her opinion of the work (students: mode = 3, mean = 2.72; supervisors; mode = 2, mean = 2.66). Once again, there is a slight leaning towards supervisor responsibility in this area, emanating more strongly from supervisors than students.

**The thesis**

There was a slight tendency for both groups to see it as the supervisors responsibility to ensure that the thesis is finished not much later than the minimum period. This was felt more strongly by supervisors (mode = 1, mean = 2.32) than students (mode = 1 & 4, mean = 2.61).

A midway position was chosen by both groups in relation to who has responsibility for the standard of the thesis, although supervisors saw it as slightly more their responsibility (mode = 2, mean = 2.62) than students (mode = 3, mean = 2.87).

Both students (mode = 1 & 2, mean = 2.30) and supervisors ( mode = 1 & 2, mean = 1.90) felt that the supervisor should insist on seeing drafts of every section of the thesis in order to review them, rather than leave it up to the student to ask for constructive criticism from the supervisor.

In relation to whether the supervisor should assist in the actual writing of the thesis if the student has difficulties, both groups acknowledged the supervisor should be wary of contributing too much to the thesis. The students felt even more strongly about this (mode = 5, mean = 4.39) than the supervisors (mode = 4, mean = 3.85).

**Early general impressions about interview data**

The first round of interviews have not yet been completed. However the impressions I have developed so far are of very good to excellent supervisory practices and relationships, with both parties in the relationship contributing to making the supervisory relationship work.

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# "HOW DO I KNOW HOW I AM GOING?" ASSESSMENT IN POST GRADUATE RESEARCH DEGREES

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**Abstract**

A part of a Cathie-funded project on Assessment the author, along with two other applicants (Keller and Austin) chose to investigate the forms of a feedback postgraduate research students found helpful in their progress.

Two Departments were chosen for the study, one a science-based discipline the other social science. Both Departments have significant numbers of international students, most of whom have English as their second language.

The focus was on the students and their perceptions of the feedback they received, rather than supervisors and the feedback they thought they gave to students.

Information was collected through voluntary semi-structured interviews which were taped and then typed. The initial analysis indicates quite clearly the types of feedback which students find helpful and more significantly, those which they do not. The results of the analysis are discussed with an aim to develop possible strategies for change.

## Context of the study

Assessment takes many forms and has many purposes. In postgraduate research the most common form during candidature is feedback on progress, i.e. formative assessment, with the only summative assessment coming at the end with the Examiners' Reports.

Crooks (1988) proposes that we assess in higher education for the following reasons:

1. selection and placement;
2. motivation;
3. focusing learning;
4. consolidating and structuring learning;
5. guiding and correcting learning;
6. determining readiness to proceed;
7. certifying or grading achievement;
8. evaluating teaching.

Of all of these, Crooks suggests that

'Perhaps the most important function of assessment in tertiary teaching is its role in giving the students feedback on their progress and achievements: helping them see their areas of strengths

[1] In association with Associate Professor Andy Austin and Dr Mike Keller, Department of Crop Protection; Dr Maureen Longmore, Department of Geography; and Dr Kerrie Round, Department of History, all staff of the University of Adelaide.

and weakness, identifying misconceptions and difficulties they are having and guiding and encouraging their further development' p. 8

During candidature students are learning and developing a range of research skills such as critical thinking, academic writing and experimental design. However, it is unlikely that students will receive direct, specific assessment of these skills, but rather written or oral comment as part of their overall progress. If students do not receive this feedback they are likely to feel confused and lacking in direction.

Powles .(1988) cites a study by Ibrahim *et al* at the University of Sydney in 1980 and another at the University of Queensland in 1983 where one of the main problems encountered by research students was lack of critical feedback on work. For students who are embarking on perhaps their most sustained period of work on a single project, constant feedback that they are progressing along the right track, albeit not necessarily a straight track, is essential for their work and well-being.

Work in another study currently being undertaken by the author indicates that one of the main areas of concern for international students during the first six months of their postgraduate candidature is not knowing how they are going and whether they are meeting expectations. In fact, for many of them they are unaware of what is expected of them in this new cultural and academic environment. While local Australian students may not be working in a new cultural environment, for many of them their postgraduate research is a new academic environment with new, and often unknown expectations. Feedback for beginning research students appears to be crucial for the potential success of the overall candidature.

Following a Cathie-funded workshop on Assessment the applicants (Kiley, Keller and Austin ) examined the forms of assessment (feedback) postgraduate research students found helpful in their research and how they knew what was expected and whether they were meeting those expectations.

The two Departments which were chosen for the study were based on a number of factors including: the percentage of international students enrolled, previous work with the Postgraduate Coordinator and a belief that the two Departments were prepared to take note of the outcomes of the study. While the focus was quite deliberately on the students and their perceptions of the feedback they received, it might be useful to consider another study in the future which asks similar questions of supervisors to determine the correlation between the two groups.

**Methodology**

Each postgraduate student in the two Departments was sent a letter explaining the purpose of the study and inviting participation. A time and location was suggested for each interview and the outline of the questions to be asked was provided on the reverse of the letter. The letter explained that the researchers were interested in hearing about the students' experiences and comments related to feedback on their work. Rather than excluding students who were involved in a coursework Masters, each student was asked whether the bulk of his/her time was spent on research or coursework.

Information was collected through voluntary semi-structured interviews which were taped. No student objected to being taped, but most required reassurance that they would not be able to be identified. In this paper student gender has been changed randomly to protect the identity of students. The interviews were then typed (but not transcribed) and analysed. While students often commented on a range of issues related to their candidature only comments specifically relating to feedback have been included in this paper.

**Results**

In the Science  Department 41 students (91%) of a total of 45 listed took part. Those who did not attend the interviews had either submitted their thesis, were on field work or had child care constraints.

Two of the 41 students responded that they were involved in both coursework and research, the others, i.e. 39 (95%) commented that the bulk of their time was devoted to research.

In the Social Science Department 16 students took part in the study. Seven other students listed as postgraduate research students in the Department had either finished, moved on or were in the field and six additional students did not attend the interview. Indonesian students studying in a special Coursework Masters for Population Studies were not included in the study as they had been involved in an earlier study and the assessment arrangements made for this group are quite specific.

Table 1 summarises the demographic details for the students involved. Of interest is the difference in ages between the Science and Social Science students and the number of part-time and full-time students.

**Table 1. Summary of demographic data for Science and Social Science Departments**

| | **Science** | **Social Science** |
|---|---|---|
| Potential cohort | 45 students | 23 students |
| Number taking part | 41 (91%) | 16 (70%) |
| Female | 13 (32%) | 6 (37.5%) |
| Male | 28 (68%) | 10 (62.5%) |
| International students | 21 (51%) | 6 (38%) |
| Local students | 20 (49%) | 10 (62%) |
| Full-time | 37 (90%) | 11 (69%) |
| Part-time | 4 (10%) | 5 (31%) |
| Age 20-29 years | 18 (45%) | 3 (19%) |
| Age 30-39 years | 17 (42%) | 6 (38%) |
| Age 40+ | 6 (13%) | 7 (43%) |

*Feedback on progress*

Science

When students were asked whether they had a 'clear sense of how their study was progressing' the responses for the Science Department were as follows:

- 30 (73%) reported that 'yes' they did know how they were going, with 4 of these saying they definitely knew how they were progressing.
- 4 (10%) reported that it was 'so so' although two commented  that they thought this was part of the whole ethos of research and two others commented that they were getting to a stage of understanding after their first year.
- 6 (15%) reported that they did not know how they were going, three explained they were at the beginning of their research and they were not worried by this. Two students reported that it was just the nature of the project and that there was no way of knowing whether they were going the

right way until the results of their experiments were in. The areas were complex and it was difficult to be sure of the direction. Both commented that their lack of direction was not a result of poor supervision, but more the nature of the research. One student was concerned that considerable time had been wasted during the first year of candidature due to University requirements.

- One student had just submitted the thesis.

Social Science

For the Social Science-based Department the responses were:

- 8 (50%) reported that 'yes' they did know how they were going;
- 6 (37.5%) reported that they 'hoped so', or thought they 'probably were', but could 'never say with certainty'. Two said that they did not really know how they were progressing;
- 2 (12.5%) reported that they definitely did not know how they were going. One commented that it 'felt like a guessing game' and the other commented 'Never.'

**Table 2. 'I know how I am going...' summary for Science and Social Science Departments**

| | **Science** | **Social Science** |
|---|---|---|
| 'I know how I am going' | 30 (73%) | 8 (50%) |
| "Maybe...Hope so..' | 4 (10%) | 6 (37.5%) |
| 'I don't know how I am going' | 6 (15%) | 2 (12.5%) |

*How students know how their research is progressing*

Students were asked how they knew whether they were progressing and from where that information came.

Science

When asked how they knew they were on the right track and progressing for the Science students the most common way was from their supervisor/s (61%). Of interest was that 8 students particularly commented that it was the informal interaction which they had with their supervisor that was so helpful. This compares with the Social Science students who found written comments from supervisors to be most helpful. Six students mentioned their supervisor second in their list of 'helpful'.

Five students (12%) reported that results from their experiments were the most helpful form of feedback on progress and twelve students reported that lab meetings were very helpful in providing feedback. This result was of particular interest to the Department as there had been considerable emphasis placed on the development of lab meetings in the past year or so.

Of interest were student comments on seminars, that is, the seminars that students are expected to present in the Department. While 7 students said seminars were somewhat helpful, most clarified that it was not the feedback one received which was helpful, but the experience of having to present ideas which was helpful. In fact a number of students stated that seminars were not a useful forum for feedback on work in progress because the professional interests of the Department were so diverse.

A number of students mentioned 'Others' as being helpful, these included other people in the field but outside the Department or other students.

Social Science

For the Social Science students, however, the situation was somewhat different. While the supervisor was still the main source of feedback, in this case 6 students commented that it was written comments on their written work which was the most significant form of feedback received with one student rating written comments second and another rating them third. Included in these figures, 5 students rated discussions with their supervisor as the main source of feedback. In only one case did a student talk about informal discussions with supervisors rather than planned meetings and discussions. Of particular interest is the comparison with Science students do not receive the same level of comment from supervisors on written work as they tend not to write up in the in-going manner that many of the Social Science students are encouraged to adopt.

For 2 students supervisors outside the Department (but within the University) were the main source of feedback and people outside the University of Adelaide provided significant.

**Table 3. Summary of helpful feedback for Science and Social Science Departments**

| | **Science** | | | **Social Science** | | |
|---|---|---|---|---|---|---|
| | Most helpful | Very | Helpful | Most helpful | Very | Helpful |
| Supervisor | 25 (61%) | 6 (15%) | 3 (7%) | 6 (38%) | 1 (6%) | 1 (6%) |
| Supervisor in another department | | | | 2 (13%) | | |
| Supervisor in another University | | | | | | 2 (13%) |
| Experiments | 5 (12%) | | | | | |
| Lab meetings | 2 (5%) | 10 (24%) | 6 (15%) | | | |
| Friends/spouse | | | | 2 (13%) | | |
| Post docs | 2 (5%) | | 4 (10%) | | | |
| Self | | | | 1 (6%) | | |
| Conferences/ Referees comments | | | 10 (24%) | 2 (13%) | 1 (6%) | |
| 'Others' | 2 (5%) | 6 (15%) | 2 (5%) | | | |

*Least helpful feedback*

Interviewees were also asked about the least helpful form of feedback they received.

Science

For many students this was a difficult question to understand and most commented that they had not received any unhelpful feedback. Of interest, 11 of a total of 17 who mentioned some form of least helpful feedback, were women.

From the comments the least helpful form of feedback was definitely the Departmental Seminars. As a general rule at the University of Adelaide research students both attend and present at Departmental Seminars. In particular, each student is expected to present his/her outline of proposed research to the Department within the first twelve months of candidature. Some Departments have special seminars for this purpose, others use the regular Departmental program. Students suggested that seminars were unhelpful because the audience was so diverse that the questions and comments tended to be superficial. One student commented 'At the Departmental Seminars they ask "stupid"

questions'. Other students (in addition to the six who commented on the seminars) suggested that it was not helpful when people, who didn't really understand the field, 'tried to be helpful'.

Other comments on unhelpful feedback included:

> 'Being made to feel "small" in the lab because I didn't know something'
>
> 'Pessimistic comments'
>
> 'Little comment on written work'
>
> 'Work being attacked because of people's views of the supervisor rather than the work itself'.

Social Sciences

For the Social Science students again the Departmental Seminars appeared to be the least helpful form of feedback. One student commented '...the seminars are penance' and two said that the seminars they presented to the Department were negative experiences, particularly as one had had the work criticised by the supervisor the day before the seminar presentation. One reported that '...feedback from the seminar was denigrating.'

From the comments it appeared that for some students one of the major difficulties was the lack of understanding exhibited for the theoretical framework underpinning their research. Students suggested this was due to the different forms of the discipline within the one Department.

*Other desirable forms of feedback*

In an effort to determine what other forms of feedback students might find helpful they were asked the question:

> 'Looking at what happens with your friends and other students, what sorts of feedback do they receive which you think would be really helpful for your work and progress?'

Science

The majority of students in fact did not have any comment to make on other forms of feedback which they would like, although a few said things like 'By comparison ours [Department] is the best' or 'If I need feedback I get it'.

Of the seventeen students who did have suggestions 9 were overseas students. Comments relating to feedback included:

- more students in the group working on the same or similar topic;
- further development of lab meetings;
- the establishment of a panel to evaluate students' work and its appropriateness for a PhD (similar to the practice in another Department);
- involvement of the supervisor in the lab; and
- more positive working relationships with supervisors.

Although not clear from the above comments, a sense came from the interviews that students felt that there were too many disparate interests within the Department and therefore there was not a sufficient

number of students and staff working in the one field to have an active, dynamic interchange of ideas on a specific topic.

Social Science

Again, not many students suggested additional means of feedback which they would like. However, comments included:

- having a supervisor who understood the theoretical framework;
- more information on the structure of a PhD 'what is expected';
- working in an environment where there is a lot more common understanding and sharing of views;
- a better student/staff ratio to allow for adequate supervision.

Again, listening to the interviews one had a sense that the Social Science students felt there were too many varied interests within the Department to support a specific topic or methodology. There was also a strong sense of 'busyness' within the Department. There were frequent comments about the busy and active professional lives of staff which often meant that students felt they should not, or were not able to, interrupt the supervisors to seek help.

*The Structured Program*

In 1994 the University instituted the Structured Program for PhD students. Most Departments, as with the ones in the study had extended the Structured Program to Research Masters students also. The aim of the Structured Program is to provide students with the requisite knowledge and skills to make an efficient and effective start to their research. In addition, all international students are involved in the Integrated Bridging Program which provides a language-based approach to starting research. As part of the study students were asked to comment on the overall usefulness of the Structured Program not only as a means of feedback, but for beginning their research.

Most students in both Department who had undertaken a Structured Program found it to be helpful although some commented that it was good in theory, but in practice either too inflexible or not helpful in addressing their needs. (See paper by Andy Austin and Margaret Kiley, Symposium 5.)

For International Students, a component of the Structured Program is the Integrated Bridging Program and the students who had done that found it very helpful. (See paper by Margaret Cargill, Symposium 7.)

*Annual Review of Progress*

The University of Adelaide has a system of Annual Review of Progress where both the student and the supervisor present a report of progress over the past twelve months and indicate milestones for the next twelve months. The Postgraduate Coordinator and/or Head of Department is expected to review each student's progress based on the reports and an interview and then report this progress to the University's central administration. Students were asked to comment on the usefulness of the Annual Review as a means of feedback on work in progress.

Science

Most students had taken part in at least one Annual Review, although students who had commenced in 1995 were yet to have one. For those students who had, the comments on usefulness were fairly uniform. The Annual Review of Progress was not generally seen as a useful means of feedback on work. Although students appreciated the need for such a process of ‘checking' they suggested that

the people doing to Review were not always *au fait* with the student's topic and so could only talk in generalities.

Of interest was the comment from a number of students that they thought the review process would be helpful for students having difficulty, but as they themselves did not have any problems it was a 'paper exercise' only. And yet students who did have problems felt that it was not a place to raise problems and that they had had to deal with their problems in other ways.

Students, on the whole, thought that the process was helpful in making one feel 'cared for' or that 'someone bothered' as well as highlighting the need for, and the provision of, additional resources but not as an academic exercise related to the actual work being undertaken.

A recent innovation in the Department was the Student Symposium Program. The Program was seen as a means of providing an opportunity for all research students in the Department to present their work to students and staff of the Department. Students were given fifteen minutes to present an update on their work over the past twelve months. The Symposium was conducted just before the Annual Review process so that the Head of Department and Postgraduate Coordinator, as well as other staff and students, could gain an insight into students' work.

As the interviews occurred just before the Symposium an additional question was included asking students to comment on their expectations of the helpfulness of the Symposium. The majority considered that any value that the Symposium would be as practice in presentation skills and would have little or no benefit as a means of feedback on work. Twenty seven (66%) thought that it was a good idea - even with reservations - but only as a means of developing presentation skills. Eight (20%) were not at all happy with the idea, particularly as it was going to be taking such a long time out of their working week.

(Note: A follow-up evaluation of the Symposium was conducted and 11 of the 27 students who responded to the evaluation said that the Symposium was better than they had expected and 8 students rated it as very worthwhile and 16 as worthwhile.)

Social Science

Seven students (44%) considered the Annual Review to be useful, but only 2 thought that it was helpful as a form of feedback on progress. Three students commented that the Annual Review was not at all helpful and six commented along the lines of the Annual Review being superficial and not a place to raise grievances but that 'at least something was happening'.

*Other comments*

Following comments in the first few interviews an additional question was included after the seventh interview for the Science students and for all Social Science students. The question related to whether students would prefer to have a component of coursework in their PhD program. A number of students had suggested that if there were a coursework component they might be able to gain early and specific assessment. In Science sixteen students (39%) commented that they would have preferred some formal coursework in a PhD program. Of these, the majority were international students (72%). Six (37%) of the Social Science students thought that a coursework component in a PhD would a good idea but eight (50%) suggested that they would not like it and two felt that there were benefits of both types of courses. As with Science, the majority of students who preferred a coursework component, were international students.

Students were also invited to make comments on any aspects of the interview and a number took the opportunity to expand their response. However, only comments related to feedback have been included in the following comments.

Science

These comments included:

- 'It is very important at the beginning for the students to know the expectations of the relationship with their supervisor and to know what is expected of them as a student'.
- 'There should be oral defence of the thesis'.
- 'I wish that other supervisors were as interested in their students' work as my supervisor is in mine.'
- 'It would be better if there were more people in each group who were working on similar topics'.
- 'Supervisors need to realise that they need to give more help to overseas students at the beginning of their candidature'.
- 'There are too many students in the xxx section for them to be adequately supervised'.

Social Science

Again in this Department, as with the Science Department, some students felt that the ratio of students to staff was quite poor and so supervisors were too busy to adequately supervise all students.

**Discussion**

When discussing the students' perceptions with the Departments' Postgraduate Coordinators it was clear that the most interesting finding was the difference in perceptions held by staff of the Department from those held by students. Certainly one of the most useful outcome of the study would be to encourage discussion between staff and students which led to shared understandings of the usefulness of various Departmental practices in providing feedback to research students.

For example, in most Departments students are expected to attend Departmental Seminars and present once or twice during their candidature. The main reasons staff give for students to attend are:

- as a means of exposure to the wider culture of the discipline.
- the opportunity to provide constructive comment to the presenter;
- to learn more about the topic under discussion.

It might be argued that part of the development of a researcher it to be aware of developments in the field, even if they are not directly linked to the student's specific area of research. On the other hand, students often feel so pressured for time that attending seminars which are not going to directly contribute to the satisfactory completion of their thesis, can come quite low on their list of priorities. On the other hand one of the reasons that students are likely to attend seminars is to provide support for fellow students. In fact, it is not uncommon for a student who is presenting to have other students 'planted' in the audience to 'head off' any particularly difficult questions from some staff members.

Given that students may be quite single-minded in the pursuit of their own topic, it could well be the case that seminars in other Departments would be more helpful, particularly if they are discussing a methodological or theoretical approach of interest to the student.

In terms of students presenting their own work to the Department, particularly the outline of proposed research, one option is to establish special seminars or workshops and encourage students, with the help of the supervisor, to invite the people they want to attend. Rather than have all Departmental staff present, including those who work in a different area of the discipline or who use a very different methodological or philosophical approach, it might be far more helpful for students to invite academics and students who are involved in similar research areas. This is particularly true for students working in multi-disciplinary areas and those which adopt research methodologies not usually used in the field. By inviting such people to their initial seminar students may be able to establish long-term support networks with people who have interest and/or skills in the research topic or methodology. It might also be possible to develop a more collegial and helpful environment for beginning researchers if the participants were invited.

Already with the Social Science Department an Honours and Postgraduate students' research group has been established. The group is coordinated by the students, with some assistance from the Postgraduate Coordinator.

Given that students are not perceiving the Annual Review as a useful form of feedback but do see it as helpful in providing a caring environment and an opportunity to discuss issues (not specifically the content of the research) then the need for clarification of aims, purpose and practices would seem to be helpful.

In the case of the Science Department the provision of the Student Symposium might be one way addressing the difficulty of providing the Postgraduate Coordinator and/or Head of Department with enough background information about the student's project that the Annual Review can be a more meaningful exchange. Overall, there appears to be some further work needed where students and staff work together to share perceptions and expectations so that Departmental practices might be as helpful and meaningful as possible to those concerned.

**Summary**

While the results of the study were not surprising in that one would expect that the supervisor was the main form of feedback to research students there has been some interest in the students' perceptions of Departmental Seminars and the Annual Review.

The expectations of staff differ from those of students regarding the purpose of these two activities. To enable a more consistent approach to formative assessment in postgraduate research it appears from the study that a common understanding of purpose is essential.

For students who have not before undertaken a major piece of research and writing, the need for feedback on their progress and direction is necessary if they are going to develop as researchers, let alone successfully complete their award program. The majority of the students involved in this study did feel that they knew where and how their work was progressing and the areas of concern are now being addressed by the respective Postgraduate Coordinators.

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# QUALITY IMPROVEMENT THROUGH A UNIVERSITY-WIDE SURVEY OF PH.D. STUDENTS

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## Abstract

During 1994, all Ph.D. students at Monash University were surveyed on the quality of their supervision and departmental/faculty support. A total of 1045 completed questionnaires were returned which represented a good response from the approximately 1400 students surveyed. For the 43 departments/academic units that had 8 or more students who responded, the percentage of students expressing dissatisfaction was calculated for 14 key questions. These percentages were then aggregated, allowing these departments/academic units to be ranked according to their aggregate percentage points of dissatisfaction. Confidential reports that pointed out strengths and weaknesses were provided to deans. A lunch was organised for the graduate coordinators of the top 9 departments. Each coordinator was asked to tell the lunch why, in their opinion, their department ranked so highly. Out of the whole process, there have been a great number of developments. This paper documents the process, the lessons learnt and the outcomes that have been achieved.

## 1. Introduction

During 1994, all Ph.D. students at Monash University were surveyed on the quality of their supervision and departmental/faculty support. The survey instrument was developed using Monash's Code of Practice for Supervision of Doctoral Candidates as a framework, with further questions being suggested from Phillips and Pugh's (1987) chapter on good supervision. A draft questionnaire was then widely-circulated and suggestions from academics, students and Monash University's Higher Education Advisory and Research Unit (HEARU) improved and expanded the original draft. The final instrument included 19 questions on the principal supervisor, 15 questions on the associate supervisor (if applicable) and 14 questions on departmental/faculty support. General comments on supervision, departmental support and any other matters were also sought. Throughout there was an emphasis on confidentiality. For this reason HEARU was asked to receive and process the returns. Respondents were asked to identify their department/academic unit and their faculty, but nowhere were individual supervisor's names requested. In order to preserve anonymity, only when 8 or more Ph.D. students from a particular department/academic unit responded did the results get aggregated and returned to that department/academic unit.

A total of 1045 completed questionnaires were received which represents a good response from the approximately 1400 students surveyed. Because this was the first university-wide survey, there was a lot of interest in the results. Would they show supervision in laboratory disciplines to be qualitatively different from that in non-laboratory disciplines? Would the results help us identify departments which

could be held up as examples of good practice and other departments in need of some improvement (at least in the eyes of their students)? Would the results help us identify weaknesses in departmental/university support for Ph.D. students? These are some of the questions we were seeking answers to.

There are obviously many ways in which the results could be analysed. Each of the questions from 5 to 51 was a positive statement that one would hope students would agree with in a perfect world. Respondents were asked to say whether they (i) strongly agreed, (ii) agreed, (iii) were undecided, (iv) disagreed or (v) strongly disagreed with the statement. A decision was made to analyse the proportion of responses that disagreed or strongly disagreed with each statement. In other words, it was decided to focus on the proportion of dissatisfied students.

Not all questions could be claimed to be of equal importance. Also, large numbers of students did not respond to the questions on associate supervisors, either because they did not have an associate supervisor or because they had not had enough interaction with their associate supervisor to want to comment. In order to make comparisons, the responses to seven key supervision statements and seven departmental/faculty support statements were analysed. The seven key statements concerning principal supervisors were:

- Shows a good knowledge of my research area.
- Provides appropriate guidance on the conduct of my research.
- Provides me with a clear picture of what is required to produce a successful Ph.D. thesis.
- Is available for consultation when needed.

- Reads my work in a timely manner and in advance of meetings with me.
- Indicates ways in which my work might be improved.
- Overall provides satisfactory supervision.

The seven key statements concerning departmental/faculty support were:

- Has an adequate induction program for new graduate students.
- Has an adequate research seminar program in which I can present the results of my research to an interested audience.
- Provides adequate access to help/advice on computing matters.
- Provides adequate access to help/advice on statistical matters.
- Provides adequate access to help/advice on language matters.
- Provides a stimulating environment for my research.
- Provides a supportive environment for my research.

For the 8 faculties and the 43 departments/academic units that had 8 or more students who responded, the percentage of students expressing dissatisfaction was calculated for each statement. The 14 percentages were then aggregated for each department/academic unit. This allowed the 43 departments/academic units to be ranked according to their aggregate percentage points of dissatisfaction. We also looked at the aggregate levels of dissatisfaction over the seven supervision statements and over the seven departmental/faculty support statements in order to calculate two further rankings.

Each of the deans whose faculties had 8 or more respondents received a confidential report from the Chair of the Ph.D. and Scholarships Committee. This

report gave all results for both the faculty as a whole and those individual departments within the faculty that had 8 or more respondents. The analysis of the 14 key questions and the resultant rankings were also provided but only for those departments within the faculty. Noteworthy features of the results were drawn to the dean's attention but the emphasis was that any interpretation of the results was best left to the faculty/department involved.

Some of the comments from students were of such a specific nature that they allowed certain students and or supervisors to be identified. These were all edited to remove or neutralise identifying comments and then passed onto faculties and departments.

## 2. The Results

Across the university, about 10% of students expressed dissatisfaction with their principal supervisor. The degree of dissatisfaction varied from question to question. For example, only 6% disagreed that their main supervisor indicated ways in which their work might be improved while 14% disagreed that their supervisor gave them a clear picture of what was required to complete successfully. The variation between faculties was even greater, with one faculty having only 1.7% of their students dissatisfied with the overall quality of their supervision while a second had 20% of students registering their displeasure. This variation was even more pronounced at the departmental level, with the majority of departments having a very low dissatisfaction rate and a few departments spoiling this overall picture - some rather too dramatically.

With respect to statements about departmental/faculty support, the level of dissatisfaction was about 20% on average across the university. A major finding was that 37% of all students were dissatisfied with their induction into the PhD program. It was universally agreed that this level was far too high. In addition, 23.5% and 21.1% of students were dissatisfied with their access to help/advice on computing and statistical matters, respectively. It was also most disappointing to discover that 22.4% and 18.0% of students who responded disagreed that their department/academic unit provided a stimulating environment and a supportive environment, respectively, for their research. Again, at the disaggregated level of departments with 8 or more respondents, there was considerable variation in these latter two percentages with some departments registering zeros for both while two departments recorded rates in excess of 50%.

Clearly our survey was telling us that, at least in the eyes of students, there were some departments whose Ph.D. programs could be improved. This message was reinforced by the comments of individual students.

An obvious question is whether peculiar aspects of a particular discipline could be the cause of greater dissatisfaction. Our rankings suggested this was not the case. For example, the top nine departments overall in order of least dissatisfaction were

1. Econometrics
2. Philosophy
3. Psychological Medicine
4. Economics

5. Robotics & Digital Technology
6. Pharmacology
7. Computer Science
8. Microbiology
9. Civil Engineering

In fact the first 18 departments provided representatives from each of the 8 faculties. In other words, if our top ranking departments can be assumed to be examples of good practice, then each faculty had in its midst at least one department it could hold up as an example to other departments.

With respect to the written comments, one consistent plea was for more money to enable Ph.D. students to travel to conferences. Otherwise the comments largely amplified the responses to the 47 statements, in many cases praising a supervisor or department. A very small minority of students from laboratory-based disciplines complained that they were over supervised, that they were not allowed to explore their own research ideas and occasionally that they felt their supervisor was requiring them to do more experiments than necessary.

## 3. The Faculty Responses

As might be expected, faculties responded to the results and reports in different ways. There was much discussion. Some led to questioning of the wording of the survey questions but most led to positive suggestions for improvement and change. High on all agendas was how to improve the induction of new students. The

Faculty of Engineering responded with a very structured week-long induction process conducted by an outside consultant. Most other faculties chose to have half day inductions with short lectures on various important but practical topics followed by a social event. The information provided was also typically summarised in an induction handbook. It is widely recognised that induction is partly a faculty matter and partly a departmental matter. It turned out that the head of the department with the lowest percentage of dissatisfied students had been holding weekly meetings (before the departmental seminar) with all graduate research students who wished to attend. Students who raised problems at these sessions often had them solved by other students or by the head of department.

In addition to their 102-page induction handbook the Faculty of Medicine produced a 23 page booklet on statistical resources for their research students. Many departments and faculties also examined the computer resources available to their students and, where possible, upgraded and expanded these resources. Extra money was also found to expand the number of computers in the new Postgraduate Centre.

Since the survey I have noticed some departments and faculties trying to do more in terms of accommodation for their students. The Arts Faculty, which was probably the most heavily criticised by students for its lack of accommodation, now has a plan for improvement which fits in with a long-term plan to refurbish the Menzies Building in which they are housed on the Clayton Campus. Central to this plan was the formation of the Arts Graduate School late in 1994. It is currently physically located on the top floor of the new Graduate Centre. It mostly accommodates students but there is office space for a small number of academic staff

who are seconded to the School for short periods to concentrate on their own research. As part of the refurbishment of the Menzies Building it is planned to create additional space within the Faculty for its graduate students. These are very heartening developments.

In my role as Chair of the Ph.D. and Scholarships, one Dean asked me to join discussions with some individual heads from departments with high levels of dissatisfaction. As a result of these discussions, the heads were then asked to formulate a plan for improvement within their department. In some cases, problems perceived by the students looked like they could be readily solved. In one case there was a clear cultural problem within the department that needed addressing.

There are probably many more changes and improvements instigated by departments and faculties that have escaped my notice. Overall I have been very impressed with the positive reactions of faculties and departments to the survey results.

## 4. The University Wide Response

The results of the survey allowed the Ph.D. and Scholarships committee to argue for more money for the Conference Grants-In-Aid program. In the seven years of its operation, central funding for this program which provides money to assist graduate students to attend conferences in order to present their work has grown from $10,000 to $45,000 in 1996. We have also asked faculties/departments to match the central money dollar for dollar so that in effect at least $90,000 will go to student travel to conferences this year. We are prepared to look at cases in which faculties are

unable to provide matching funding but so far faculties have been happy to come to the party.

With respect to statistical advice for Ph.D. students we have been able to find money to provide up to five hours of free statistical assistance from the Monash University Statistical Consulting Service on the Clayton Campus and the Syme Econometrics Consulting Service on the Caulfield Campus. In the first 6 months of operation, this scheme was able to assist 45 students.

Also, I have observed that the demand for training of staff in the skills of student supervision increased significantly since the survey. In the past these training sessions were small workshops. Now they involve large groups of thirty or more academics.

Overall I have noticed a greater degree of support around the university from the Vice-Chancellor down for the Ph.D. program. This support may have been just as strong had we not done the survey but, when arguing for more resources, it has helped to have some data to back our claims.

## 5. Lessons from the Top Nine Departments

Individual departments are clearly the engine-rooms of any university Ph.D. program. They provide the supervision and in most cases, particularly when some form of technology is involved in the research, they also provide most of the resources required to undertake the research. Our survey identified a group of departments across a range of faculties that, at least in the eyes of their students, were performing well. We held a lunch for the graduate co-ordinators of the top nine departments and

asked each coordinator to discuss why, in their opinion, their department ranked so highly. Also in attendance was Margaret Sloan, the Monash Postgraduate Association Executive Officer. The aim of the lunch was to try to identify what makes these particular departments rank so highly.

It was noticeable that none of the nine departments could be regarded as big - particularly when measured by numbers of Ph.D. students. On the other hand, they all had a critical mass of students. Departments with very large numbers of Ph.D. students tended to rank around the middle of our list of 43. It was also noticeable that the nine departments could be regarded as settled in the sense of not having internal problems. Departments in such trouble often showed up towards the bottom of our rankings. If there is trouble in the department, it also tends to show up in student discontent.

The main theme that came through at the lunch was one of strong departmental cultures of caring about their Ph.D. students resulting in high student morale. There were many ways in which departments achieved this goal. Three of the top four departments (Econometrics, Economics and Philosophy) reside in the somewhat overcrowded Menzies Building. They each had a policy (unlike many other departments in the same building) of offering their full-time Ph.D. students (with appropriate communication skills) fractional assistant lectureships or fractional research assistantships. In this way the students are given office space within the department, access to departmental resources and quickly become part of the department. Particularly by working as teachers within the department, they develop

a feeling of being a part of the team. It is noteworthy that these three departments are the only non-laboratory departments within the nine.

Of course, in most laboratory departments, the high cost of research requires that it be funded in some way. For this reason, Ph.D. students are often part of a research team that works together to solve research problems funded by one or more research grants. The more expensive the research, the greater the care needed in selecting appropriate students. In the case of the Department of Computer Science, they have an annual retreat with their graduate students which helps instill that feeling of being part of a team.

The Department of Microbiology had recently introduced a program of review for their Ph.D. students. Within the first year and again after the first 2´ years, the students would present to a small panel of the supervisor, associate supervisor, another academic, a post-doctoral fellow, another Ph.D. student and a scientist from outside the university. The first review focuses on the appropriateness of the proposed research project. The aim of the second review is to see what is required to finish. Any problems are quick to surface. The emphasis is on providing helpful and largely independent advice to the student.

Civil Engineering and Pharmacology have similar review processes but with different emphases. Psychological Medicine and Pharmacology are relatively small departments which allow for closer pastoral care. All departments reported strong seminar programs which were used to monitor student progress. The feedback that comes from presenting at a well attended seminar gives students much needed confidence. For some it may provide the first indication that they may have to

rethink part of their research plan. For students in Psychological Medicine who are spread all over Melbourne, the seminar/research meetings are important in making contact with department members and fellow students.

These reviews and student seminar presentations also provide important signals for students. They feel their department cares about their progress as students and is interested in what they are doing. If this is all done in a department with a strong reputation for its research both within the university and within the discipline, then one has a very positive atmosphere for the students to conduct their research in.

Another important ingredient is student morale. Students like to see their more senior colleagues complete successfully and obtain good jobs or postdoctoral fellowships. They like to be able to present their work at conferences so any travel assistance a department can give is very welcome. They like to see problems taken care of rather than being allowed to fester. A good department will take great care to ensure the morale of both staff and research students is high.

## 6. Concluding Remarks

While much of the emphasis in this paper has been on the negatives, the university wide survey did unearth much that was good. Many students wrote glowing statements in support of their supervisors who in at least 90% of cases are doing an excellent job. One over-riding principle in the whole exercise was not to do anything to damage the important relationship between students and their supervisors.

There has been much discussion of the results and a very pleasing amount of change has occurred. The next step is to improve the wording of the survey instrument and repeat the survey to see if we have significantly improved the quality of supervision. Of course this whole exercise may have raised a student's expectations in which measuring improvements may not be that easy.

**Reference**

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# Positive outcomes of a discipline-based, collaborative approach to addressing postgraduate language and learning needs

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Postgraduate students across disciplines have very specific language and learning needs which have often been overlooked because of the assumption that students who reach postgraduate level possess all the requisite skills. This case study outlines and evaluates the authors' attempts to address the specific language and learning needs of Environmental Science postgraduate students using a discipline-based, collaborative approach.

A discipline-based approach was preferred to a general approach since it provided greater opportunities for meeting students' needs. Essential to the succcess of this approach was the identification of the conventions, expectations and requirements of postgraduate study in the discipline which necessitated on-going and extensive collaboration with subject specialists. This led to the formulation of a modular semester-long workshop series for students from both English speaking and non-English speaking backgrounds at key stages in the research process.

Attendance and participation at the workshops was good, and both formal and informal feedback was consistently positive. Student evaluations indicated the usefulness of having an increased awareness of the entire research process, including knowledge of the generic conventions of research writing in their discipline, style, structure and language. This workshop will detail the strategies used to develop greater conscious awareness of the conventions and features of research in their discipline.

## Introduction

Student Learning staff at Murdoch University work with undergraduate and postgraduate students on an individual basis to address their particular language and learning needs. In addition to consultations, group teaching is provided and includes

running general workshops, teaching on foundation courses and team teaching adjunct classes with mainstream staff. Discipline-specific thesis writing instruction may also be provided when staff and students in a particular program/faculty request such assistance. Our contact with postgraduate students confirms our view that such students have very different needs from undergraduates and that they are commonly overlooked by universities (Ballard, 1993; Torrance, Thomas & Robinson, 1993).

This paper outlines the four? main theoretical approaches used to address postgraduate language and learning needs in a discipline-specific context. The case study presented is an example of a collaborative arrangement which arose out of recognition that supervisors in Environmental Science were under pressure due to the increase in their workloads resulting from increased enrolments and student allocations. Staff in Environmental Science realised that a sensible approach would be to get students to be independent researchers from the outset.

The resulting workshop series is based on three? main assumptions about the nature of the writing process and about the ways in which students can develop writing and research skills. These are obtained from our expertise in the analysis of the use of language which is obtained from composition studies, the field of linguistics (esp. applied) and first and second language teaching (L1 & L2). Firstly, we will briefly describe the student group and their needs and then provide details of the approaches we used, followed by the results of the workshop evaluations. Finally, we will summarise our conclusions about thesis writing instruction for graduate research students based on our reflections on these experiences.

## Background

SLG staff * devised a series of workshops for honours and postgraduate students totalling 12 hours ($1^1/_2$ hours a week for 8 workshop presentations spread over the semester). From our initial negotiations with the program chair and a postgraduate student representative from Environmental Science we were informed that the a fifty or so enrolled students had diverse needs as they were from a wide range of backgrounds and at different stages in their candidature. In particular, their written and oral presentation skills were in need of assistance. As well as there being generic requirements of the discipline, the students were working in four main fields within Environmental Science, each with its own specific requirements, as summarised by the program chair:

> It is important to recognise that while some projects [for MPhil or PhD] follow the Scientific Method, many others do not. Some are observational (such as some in ecology), others are in simulation fields, involving mathematical modelling, others are in environmental management, and others in policy areas. (Murray, 1995)

## Students

Before detailing the particular student group who attended the workshop series, it is important to sketch the broader context of the university system and the changes it has undergone as a result of significant growth. In Australia, over the last 10 years, there has been a considerable increase in the number of postgraduate student enrolments putting pressure on many staff (supervisors and support staff) and on limited resources (refs). A large part of this growth has included an increase in the number of international students. In 1994 there were 9,885 international postgraduate students enrolled in Australian universities (DEET, 1994). A recent IDP study (reported in Campus Review, 1995) predicts the number of international students will quadruple over the next fifteen years. Along with changes to the student profile it is important to anticipate the needs of this "little-understood student cohort" (Aspland & O'Donoghue, 1994, p. 62), as well as those of staff working with them; this can be done by devising appropriate strategies and developing an awareness of each other's cultural backgrounds to appreciate different teaching/learning styles, and expectations.

Within the division of Environmental Science the research culture is one which has grown very quickly (over 20 years) and it is therefore illustrative of these changes. A total of 40 students/staff attended all or some of the workshops: 26 from English speaking backgrounds (ESB) and 14 from non-English speaking backgrounds (NESB). Among the local postgraduate students the majority have done their undergraduate and honours degrees in Australia with a few NESB students completing their previous studies overseas; whereas, in the non-English speaking background group such students may be private and government-sponsored fee-paying, visiting scholars, and Australian citizens, with undergraduate qualifications completed overseas. There have been many implications of this growth - the most significant being in the area of student-supervisor relations because of the need for ongoing dialogue between supervisors and students in order to communicate expectations explicitly and to discuss the required relationship and the epistemological understandings. Checking assumptions is especially important for international students and supervisors.

## International postgraduate students

Generally, it is not until students arrive in Australia that the opportunity is presented for them to attend culturally-relevant induction/orientation workshops. Even then, it is unfortunate that not all international students will benefit from this opportunity (for a variety of reasons). Aspland and O'Donoghue (1994) also pointed out that recruitment practices do not adequately prepare students for their supervisors' expectations of self-directed learning and independent management of their research. In a survey of 1,100 international students it was found nearly half of the postgraduate respondents (n = 83) indicated that they had not received adequate information about supervision requirements prior to enrolment (National Liaison Committee for Overseas Students in Australia, 1992). For many international students there are considerable adjustments to be made in settling into their postgraduate programs, especially in a system which relies heavily on a one-to-one student-supervisor relationship.

## Student supervisor relations - move to module 1?

In recognition of the need for more conscious management of this relationship, and the inherent difficulties of supervision, many universities in Australia are now providing support and development for supervisors. These programs typically identify a range of strategies and emphasise the need to adopt a flexible style of supervision which is appropriate for the individual student. At the same time, students need to be made aware of their roles and responsibilities and the need to articulate their expectations. Supervision is after all a shared responsibility and both parties need to be prepared for the level and nature of interaction expected by Australian tertiary institutions.

Special needs may arise in these relationships where international students are concerned, because of cultural assumptions affecting relations, attitudes to knowledge, scholarship and teaching (Ballard & Clanchy, 1993). The implications of this are that relations between staff and students can no longer be built on a broad set of shared assumptions about attitudes to knowledge and approaches to learning. These assumptions are best clarified by both parties through the careful expression of specific expectations regarding their professional relationship.

Adding to the complexities of students' expectations of supervision and their evolving relationships with supervisors, some international students may require more extensive supervision involving more direction and intervention because of their very different

cultural, educational and linguistic backgrounds (Ballard & Clanchy, 1993), especially during the early stages of their research. Ballard and Clanchy (1993) explore the factors which significantly affect the supervision and experience of such students identifying three prevailing ideologies which supervisors may adopt (or a mixture of them). The supervision of international students may be regarded as a source of fees, giving rise to a business-like attitude; as a facet of aid, giving rise to an attitude of benevolence; as a partner in international research, giving rise to a collaborative relationship (1993, p. 62-3).

These attitudes reflect the supervisor's particular approach to the relationship and determine how the student's needs will be met. Aspland and O'Donoghue's (1994) case study of international Master's students through qualitative interviews of their experiences of supervision identified four categories of difficulties: "alienation from the university, the human qualities of the supervisor, the teaching strategies of the supervisor, and the supervisor's cultural understandings" (p. 62). The authors state that the "information base pertaining to the nature of supervision of overseas students ... is sparse" (p. 62). They add that this situation can be redressed by "Using students' voices to add a qualitative dimension to the existing small body of quantitative findings on the national scene (p. 63)". Clearly, greater efforts need to be made to supplement this paucity of information.

Induction/orientation programs play an important role in preparing students by equipping them with the skills they need to develop in critical thinking, modes of argumentation, knowledge of western? intellectual traditions, research management, standards of research work, and student-supervisor relations. However, it is not just international postgraduate students who benefit from such programs, for all students need to adjust by dealing with changes as they are entering new cultures of knowledge. It is clear that their language needs of both go beyond fluency and correctness, they include differences such as the need for greater knowledge of the discourse conventions of the target academic community as well as and how postgraduate study is different from undergraduate study needs to be discussed. Furthermore, some of them will openly say they have avoided writing. As postgraduates students they are expected to adjust to the academic and cultural demands of extended writing in a discipline. Many students may not be equipped for extended writing despite their success at undergraduate level. For these reasons, our workshops focus on equipping students

with a repertoire of techniques and strategies so they can produce a different kind of writing and to improve the quality of the student's writing.

Both groups of students as undergraduates may have been used to answering pre-structured questions and the writing of the thesis and the proposal may be their first experience of extended writing. They may also be used to a descriptive style of writing as practised in their practical write-ups of labs. This attitude seems to lead to the perception by some students and staff that the thesis will be written up as a mechanical process rather than seeing it as a creative process. In view of the varied backgrounds of the students outlined above it was clear that the pedagogy needed to reflect the diversity in preparedness, motivation, language proficiency, prior learning, work experience, and cultural and ethnic background.

## Writing is part of a holistic framework

All aspects of the workshop series were/are presented as part of an integrated approach to writing and research. The sessions were presented as "workshops" and incorporated tasks and discussions designed to maximize student participation. Examples were taken from samples of theses, proposals and research articles to design exercises to illustrate all aspects of the course and were completed in pairs, groups and individually. Because the workshops are organised from within the discipline they are seen as an integral part of their support program and not tacked on the end as an added extra. The comprehensive program offerings cater for a wide range of students (see Appendix 2 for a program outline) and ensure that a discipline-specific approach is provided.

## Materials development/Publicity

Materials have been developed for all of the workshops listed in tables 2 and 3. In order to prepare these materials, sample research proposals and recommended theses were obtained from key staff from each specialisation in Environmental Science. Excerpts of relevant sections were photocopied from the recommended theses and were sometimes used as handouts or for activities. The analysis of authentic examples of writing is central to our effectiveness and ensures that disciplinary conventions are made explicit. If the workshop series goes ahead next year, we will be able to build up more resources/samples for staff and student reference so that we can provide explicit information about academic requirements and expectations in terms of standards, organisation of content, formal requirements, and features of written style.

In May, a memo and questionnaire were sent to staff members from each specialisation to advise them of the workshop series. The questionnaire sought to obtain responses on specific planning matters. Supervisors were asked to recommend journals from their field and three theses (identifying the qualities they exemplify). Other questions addressed conventions on structure, referencing, unique qualities of theses, expected audience, and specific language features. Liaison with key staff in Environmental Science has been most important and we are particularly grateful to Frank Murray for his timely and helpful assistance. Tony Smith was also helpful in disseminating information and a valuable participant in the workshops.

The workshops were publicised through letters, e-mail, and word of mouth.

## Needs analysis

An ongoing needs analysis was conducted using formative and summative methods. The information-gathering methods and needs analysis techniques used to prepare the workshops included: a study of samples of work, questionnaires, group teaching, and discussions with the postgraduate student representative and relevant staff.

We aimed both to teach techniques and principles that were directly applicable to thesis writing (based on an analysis of genre conventions) and to give some understanding of the theoretical framework informing our approach.

The course aims to improve students' ability to produce text and develop strategies for generating and organising ideas and information prior to composing and during drafting. The workshop series was divided into four modules (Appendix ?) giving students the option to pick and choose to suit the stage in their candidature and the topics that would best meet their needs. The first module introduces students to several practical ways in which they can get started and organised and gives guidelines and examples of proposals, emphasing how it lays the groundwork for the thesis and is a working document in the form of a tentative plan for the research.

The second module deals with the seminar presentation of the research proposal and provides general rules for presenting ideas and information in oral presentations. Many students were most concerned about answering questions. To provide practise in these skills and build confidence the students did two mini-presentations and were given feedback by staff; the second presentation (of the proposal) was recorded on video and students were evaluated by their peers and staff.

The third module introduces several ways in which teachers and theorists have suggested that writing can be made clear and easy to read. This component includes teaching students reader awareness such as the use of transition works to guide the reader through the text and the use of the active voice and the first person as ways of making the text more accessible, and giving students advice on clarity and accuracy of meaning.

Another aim of this module is to build on the kinds of expertise they need in language and in understanding how the discipline interacts with language; thereby inviting them to reflect on how their discipline thinks by showing them how to recognise the discourse community and how to write for a specific discourse community and thus the ability to negotiate meaning with the readers/members of the discourse community for whom he or she is writing (Swales check) by recognising their stylistic requirements.

By offering explicit instruction on the required features of the thesis and proposal, as well as introducing rules for effective writing and guidelines for generating and structuring thesis content (what exactly?) and for tailoring the text to the reader students were aware of the need to be multi-literate. so metadiscourse (is considered to be underutilised in NESB ac writing at pg level? (Swales)), grammar, style, passive/active etc. "I" or "we" debate. Discussion of the reasons for writer's block and strategies for overcoming it helped connect the idea that one's perception of writing was influenced by disciplinary practices.

In the Sciences, thesis writing is commonly perceived as a mechanical process of writing-up the research after the experiments are completed (data driven), whereas in the Humanities it is the writing and the development of an argument thus it is seen as the central part of the entire research process (refs) as a recursive (concept driven) process. To illustrate this we use a number of techniques: one is to graphically display the process using the research writing wheel (see Appendix 3). Another way is by suggesting that writing need not always follow thinking - that it is through writing that ideas can be generated and information can be recalled (refs).

To emphasise that writing is best used as a thinking tool we stress how the research proposal lays the groundwork for the thesis; that it should be used as a way to order ideas for research not from research. According to Wason (cited in Phillips & Pugh, 1994 ?) there are serialists and holists, it is recognised that some students need to generate ideas through a focus on text production and others can pre-plan and clarify thinking

before writing. For the former? drafting involves the production of full text in the form of a rough draft without first identifying in detail what is to be said. Little attention is paid to the audience for whom it is being written (refs). For the latter pre-planning is necessary and ... Within the framework explained above it is important to provide alternatives and to discuss students' styles of writing,

## Choices provided

In recognition of the specific discursive practices across the discipline it was important to take account of this variety by always providing students with choices and by writing to supervisors from each specialisation and asking them to recommend a thesis so that each students' specific and general needs could be met.

During the workshop series all sessions are conceived as offering choices or allowing the writer to make decisions to indicate that students have control over their experiences and in directing their learning, in the way they approach their research. This helps them see that in making decisions the writer has the demanding task of balancing four elements; that of the content/message, audience, writer's voice and the formal properties of language. Writing is not purely seen as a matter of mechanics as there is a creative component. The decision making involves asking questions, this way we are providing help with developing thinking and expressing ideas. Stylistic features discussed are active/passive, I/we, tense usage, paraphrasing, commentary on the text, etc.. In making choices students need to check their assumptions by first identifying the writing requirements within the discipline.

*Environmental sci report paste*

## Genre analysis approach

*Genre theory paste(Beasley and Knowles, 1995)*

By drawing from genre analysis studies to identify the structural features of research proposals, research articles and thesis texts, students learn that textual awareness of the structure of written and spoken communication and knowledge of discourse is as important as grammatical knowledge. Discourse here is defined as the disciplinary concerns related to the epistemology which shape critical analysis and argument within it. This approach introduces students to recent research in applied linguistics on the structure of academic articles (Hopkins & Dudley Evans, 1988; Swales, 1984, Weissberg

& Buker, 1990). Students are asked to obtain a thesis recommended by their supervisor and to analyse it in terms of the moves or stages in the thesis sections. It is also used to identify the characteristic features of the scose? of the discipline

Theses recommended by supervisors in each specialisation were examined so that we could identify what is valued and not valued by not being present in the text, for example we found that in the research proposal for an experimental type thesis it is inappropriate to use ??prominent citations, whereas in a policy type thesis different both citation usages are appropriate e.g. author and information prominent ???? We also found a range of thesis types each with specific conventions; for example, the policy type thesis has literature review as its main component and an analysis based on critical interpretation of policy issues. In the workshops the theses were used as resources to identify the conventions of the discipline. In one session we conducted a round robin inventory to show the range of possibilities and help students see the similarities and differecnes by teaching them the "principle of discourse variation" (Swales, 1984: ?; Elbow, 1991: 152?)

Also, we used from traditional ideas about what is regarded as good English style (refs) as presented in style manuals and self help books on thesis writing (e.g. AGPS, Turabian APA?) such as advice on tone, citation styles to make explicit to students the generic skills which apply to all disciplinary learning. Our intention is always to describe rather than prescribe mandatory rules and these are carefully identified by the students themselves by an examination of the samples recommended by the supervisors. Since they are taken directly from the discipline area and from the uni itself it puts in on an investigative level rather than an evaluative level? DL to elaborate not constantly being asked for an evaluation of the not formulaic about our work

The questionnaires revealed the supervisors' attitudes to structure, standards and features by asking for an indication of a typical structures by identifying typical components and unique features such as extensive use of graphs, tables, pictures, maps used in land & air type theses. From this information we were able to glean that the majority of policy type theses sought to develop a theory based on scholarship and an argument to support that theory. with the literature review playing and integral part of the thesis structure. The use of the first person in policy type theses was used as a means of showing the researcher's response to the subject matter is an accepted way of writing; whereas, in the experimental type thesis such as the mathematical modelling of atmospheric conditions required ...

## Evaluation

The positive outcomes were measured by our formative and summative evaluations of the course. Informal feedback was obtained via the program chair...

The efficacy of the workshop series was measured in terms of (1) what the students liked best about the workshops (2) what they like least about the workshops (3) improvements that could be made to the course (4) comments.

All the modules were well received by the majority of students and participants. Firstly, there were many positive outcomes gained from the workshop series; therefore it appears that even relatively small amounts of instruction can have a positive effect. While the work is very labour intensive and demanding for language and learning specialists, the benefits justified the effort involved and forms a solid basis for future workshop series for postgraduate students in this and other disciplines. The regular meetings also plays a role in removing feelings of isolation through the peer support and mentoring which ensues as they are learning from the experience of students (first year final year and recently completed students).

Students gained an increased awareness of structure as we made the possibilities explicit by gaining an overview of all thesis types across the discipline with the help of the supervisors so that we were able to come up with a thesis definition task for students (Beasley and Knowles, 1995?). The often tacit understandings which supervisors rarely express or can't explain because they are too close to the discipline can create problems for newcomers. In deciding on course content it is important to address the students' concerns about how to express their ideas in acceptable ways and not just based on popular belief about what constitutes good writing. A discipline-specific approach ensures relevance to students, thereby matching their expectations. We used the theses recommended by the supervisors to study the discourse features and locate materials for our activities and booklets so that they were constructed around what the School defined and expected as best practice. From our discourse analyses we were able to identify the generic written communication skills most needed by the students and then able to develop materials and teaching strategies for the implementation of generic writing skills training.

Another positive outcome mentioned was the sense of belonging to a research community created by an informal buddy and mentor system facilitated by the contact

in our classes. Their participation and contact with other students helps remove feelings of isolation and ensures communication between isolated groups and individuals. The students' language and cultural needs are also satisfied because the teaching method and materials clarify expectations of examiners and supervisors by showing samples of reports and giving them an idea of the standards and textual organisation possibilities.

The work on student-supervisor relations (usually treated as a theme in each workshop) was appreciated because it helps students realise that they need to direct their own learning as much as possible and be aware of their roles and responsibilities. But most importantly, and this was the goal of the workshop series in the eyes of the Environmental Science staff, was to become independent researchers and build the holistic approach to give them the awareness that students gained that there was consistency and variety in what was expected in the discipline. Recognition that there were similarities as well as differences eg. between the policy type theses and the theoretical type theses made them feel powerful because there were many choices and they had grasped how to identify the best ones for themselves through greater conscious awareness of the conventions and features of research in their discipline.

What has become clear is that we need to build in more on justifying argument and restating the thesis throughout the text.

In future workshops we would like to include a drafting and revision sessions using peer review to enhance students' motivation feeling of control and self confidence based on their needs for critical and supportive feedback to acquire the disciplinary norms. We also need to obtain their views on whether their writing has changed as a result of attending the classes and incorporating the recommended strategies. This need to determine if they have put some of the ideas and strategies presented in the workshop series into practice will verify/justify the approaches... In doing so it would be useful to ascertain which particular ones were rated more favourably for helping develop content and express ideas.

Students' satisfaction with the nature of their Australian educational experiences needs to be ascertained through institutional self-assessment. Information about key aspects of their Australian tertiary experience must be collected to learn about the sort of experiences these students have gone through in their postgraduate programs. This information needs to be collected systematically so that relevant staff can inform their administrative, teaching and research supervision practices and effect whatever changes

are necessary. At present, monitoring and reviewing appear to be done in a piecemeal fashion, if at all. Unless we investigate students' satisfaction through conducting institutional research we cannot plan for quality or ensure that we are meeting these students' specific requirements.

On the workshop evaluation forms collected after each session students were asked to comment on the most useful and least useful part(s) of the workshops. Other questions asked them to comment on whether they learned what they had hoped to and a final question asked them to make suggestions for improvement.

Many students stated that they found it useful to be given guidelines on method and form as set out in the booklets we developed. There was no attempt to be prescriptive as our approach was a descriptive one which aimed to show students that there are specific conventions for thesis writing and we tried to make these explicit. Comments from students in regard to some workshops focussed on how helpful it was for them to be aware of textual organisation. In the workshops it was important to focus on the production of text and on strategies for generating and organising information and ideas prior to composing and during drafting. Other comments indicated they appreciated the distinctions that were made between different thesis types, as illustrated by the following comment below: "Glad to note the distinction made between Policy research and many other areas of science".

The most resounding suggestion for improvement was that each workshop should have been longer and the staff teaching on the series also found this a restriction. So in an effort to allow for better integration of the materials and more time for questions and discussion, a recommendation to this effect has been at the end of this report.

To determine how successful we have been in meeting present writing needs and determining future writing needs and how well students are able to use what they have learned from our workshops, we need to monitor retrospectively through student and staff surveys. A second recommendation has been made so that more precise feedback on requirements will help improve workshop materials and presentations.

## Conclusion

We are sure that students who attended the workshop series found them to be of benefit and have even had expressions of interest for participation from students doing N421 (Advanced Environmental Management). By providing students with a structured

thesis writing programme we are improving the teaching and learning environment at honours/postgraduate level, thereby ensuring that students are aware of the very different expectations in postgraduate work compared to undergraduate work, particularly in regard to independence and responsibility in academic research. We believe these workshops are of particular value to students who are at risk of having poor completion times or to those who have not had the advantage of completing an honours degree in an Australian tertiary institution. Furthermore, the peer support environment helps all students feel they are a part of a research community and the division of Environmental Science is to be applauded for recognising this need.

Environmental Science staff were not operating from a deficit model but from recognition that they needed to better meet the needs of a diverse group of students and supervisors who were under pressure because their workloads had increased. The evaluations confirmed the realisation that students would benefit from a structured program of support during their candidature which accommodates their considerably varied writing needs . The outcomes were positive, largely due to efficacy of the framework for writing and research and its value of specificity, relevance and collaboration. Students were equipped to produce a different kind of writing and to improve the quality of their writing. A further benefit is the increased probability of the thesis being completed.

However, despite the usefulness of thesis writing training for postgraduate students few graduate courses offer formal writing instruction, but there is a growing recognition that ongoing support in language and learning to assist students with their research, including thesis preparation, is also essential (refs). Since this is not presently guaranteed by Australian tertiary institutions, there is uneven provision of support across universities. Ballard and Clanchy have even gone as far as to say the provisions for it "remaining under-resourced and primitive" (1993, p. 64), which is also true in the USA and UK according to Torrance, Thomas, and Robinson (1993).

Responsibility for providing advice and support does not just rest with the supervisor: the university and its support services also share this responsibility and that of ensuring that students succeed in their studies. Unless an exit study is conducted, only specific information may be collected about the student-supervisor relationship, or about students' experience of university support systems. Institutional research on the experiences of postgraduate students needs to be investigated from a number of perspectives so we are to provide a teaching and learning environment that is conducive

and supportive of the people who come to study with us. Support systems are important not because students are unable to deal with the situation themselves, but to act as informal? channels of information; administrative reference points and moral support.

By using diverse sources, we have given an overview of key aspects of the thesis writing workshop series in terms of the induction, student-supervisor relations, and .... Changes to existing evaluation/teaching practices have been proposed to take account of different students' needs in order to provide more flexible methods for obtaining feedback on postgraduate students' progress and experience with the writing workshops. Most importantly, if no effort is made to gain specific knowledge about the efficacy of different forms of instruction, then attempts to introduce thesis writing instruction for postgraduates will be impeded. The systematic collection of feedback will ensure that the support methods will be continually assessed so that they are responsive to the needs of postgraduate students. This way, by identifying the most effective ways of integrating teaching of academic discourse into the disicpline we can ensure the low priority afforded graduate writing instruction will discontinue.

* based on work with Colin Beasley, Sally Knowles, David Lake

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## Appendix 1

## Audience

### *To whom should the thesis be pitched?*

| Audience | n = 4 |
|---|---|
| supervisors | 2 |
| examiners | 3 |
| external experts | 3 |
| student researchers | - |
| all of the above | - |

# POSTGRADUATE SUPERVISION AND STUDY IN 'NEW ACADEMIC DISCIPLINES' AND/OR NON-METROPOLITAN CAMPUSES

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## Introduction

The amalgamation of smaller institutions or tertiary education into larger units has formed pockets of researchers in 'new academic disciplines' or 'non-metropolitan campuses' within larger universities. These groups experience the pressures of the unified system in very specific ways as they attempt to develop a research culture with no time to wait for an organic growth of discipline-specific practices. The call is for a fast-track version of research development. However, the massive discrepancies between the older and newer disciplines in terms of numbers and characteristics of the participating staff point to obvious difficulties (Moses, 1994b). Traditionally, supervisory training, mentoring and monitoring of progress have been recommended to promote food supervision practices. Moses argues that most postgraduate students want very similar things from their supervisors, but the staff in new disciplines and non-metropolitan campuses may not automatically be able to provide it even thought their institutions may insist that they take on this new task as part of embracing the culture of research (Moses, 1994a).

An EIP project Supervising Higher Degree Students (1993) by S. Parry and M. Hayden recommended the development of guidelines and policies at the institutional and or departmental level in 13 distinct areas to foster effective postgraduate teaching and supervision. These recommendations were the focus of a series of conferences and institutional programs. However, having recommended the development of new policies, the question remains of how the staff understand the policies and how successful they are in improving the outcomes. Furthermore, Parry and Hayden located their study and recommendations in the 'classic' academic fields such as Physics and History.

What is the range of perceptions and practices of staff and students of postgraduate supervision in the new campuses and disciplines? To what extent has a polarity developed between *'creative, productive and relevant'* units on the one hand and those who are *'riddled with conflict and compromise*', and '*becoming increasingly irrelevant"*? (Turpin & Hill. 1991). How can we use our understanding of these perceptions and practices when planning the development of policies and developmental structures to foster a fast and effective growth of a research culture in the academic areas with relatively short histories of postgraduate research.

This paper is a report on a small research and developmental project in two faculties in one amalgamated university studying supervisors' and students' perception of their situation. I was particularly interested in issues which would define areas of developmental needs i.e. development and/or support for staff. I tried to develop an approach which would help me design appropriate programs for schools, their students and staff. This approach is based on a qualitative analysis of the data which I collected during this study. My data suggest that some background factors such as staff qualifications, seniority, the number of qualified colleagues in a school and the level of satisfaction with a school's performance have a stronger predictive power for the

outcomes for an individual or a school than others, i.e. institutional or school practices. On the other hand, the data clearly suggests that the interrelation between all factors is quite complex and that academic or policy development for schools and disciplines needs to differ from that for individuals or groups e.g. inexperienced supervisors.

## Methodology

A series of structured interviews with postgraduate supervisors and students from new academic disciplines and non-metropolitan campuses forms the basis of the data.

### *1. The sample*

The university at which this study was undertaken merged with various metropolitan and county colleges. Each merger was negotiated separately. The university has existed since the late 1960s. It has nearly 22,000 students and 900 staff in total, approximately 56% of all staff have PhDs and 7.2% of all students are higher degree candidates.[1]

Faculty A constitutes a non-metropolitan campus which has approximately 4,300 students and 250 staff. It is organised into five separate schools. Previously an independent college, it was recently integrated into the metropolitan university. The courses offered are a mixture of traditional disciplines such as humanities and science and new academic areas such as health science and business. The faculty has approximately 70 postgraduate students. Over 60 staff hold PhDs.[2]

Faculty B offers a wide range of professional courses. It was integrated into the university in the late 80s. Before integration it functioned as an independent college. It has 11 different schools and centres. The number of staff is just over 200, with well over 4,000 students. It currently has 139 research students. Over 50 of the Faculty's teaching staff hold PhDs.

**The University and Faculties**

| | University Total | Faculty A | Faculty B |
|---|---|---|---|
| Number of academic staff | 864 | 235 | 219 |
| Number of students | 21,500 | 4,444 | 4,304 |
| % staff with PhDs | 59% | 26% | 25% |
| Research students | 2174 | 69 | 139 |

The 11 schools vary in age of discipline, size, number of PhD holders amongst their staff as well as type and number of enrolled postgraduate students. The number of staff ranged from 16 to 60, of which in each school between zero and 26 held PhDs. The number of research students ranged from zero to 31.

### *2. Method*

A selective but systematic survey of both faculties by interview and statistical analysis was undertaken. I requested interviews from representatives of 4 positions of the 11

[1] Research Management Plan, June 1994
[2] This is an approximate number as no official records are kept on the qualifications of teaching staff.

schools: postgraduate coordinator, experienced supervisor, inexperienced supervisor, and students from each school in the sample. I also collected statistical data from all participants about their background and interviewed the chairs of the faculties' Higher Degrees Committees. The interviews were structured around the participants' perceptions of their school's or faculty's strengths and weaknesses in the area of supervision, the effect of the short history of postgraduate research of the discipline or the distance and size of the campus on their work as supervisors or students and any other issues they felt that they wanted to mention, I also asked questions referring to each of the 13 supervisory activities preciously described by Parry and Hayden to find out to what extent any specific school policies or guidelines relating to any of these areas were in use (Parry & Hayden, 1994).

*3. Qualitative Analysis*

In order to structure my analysis I divided the data up into five groups.

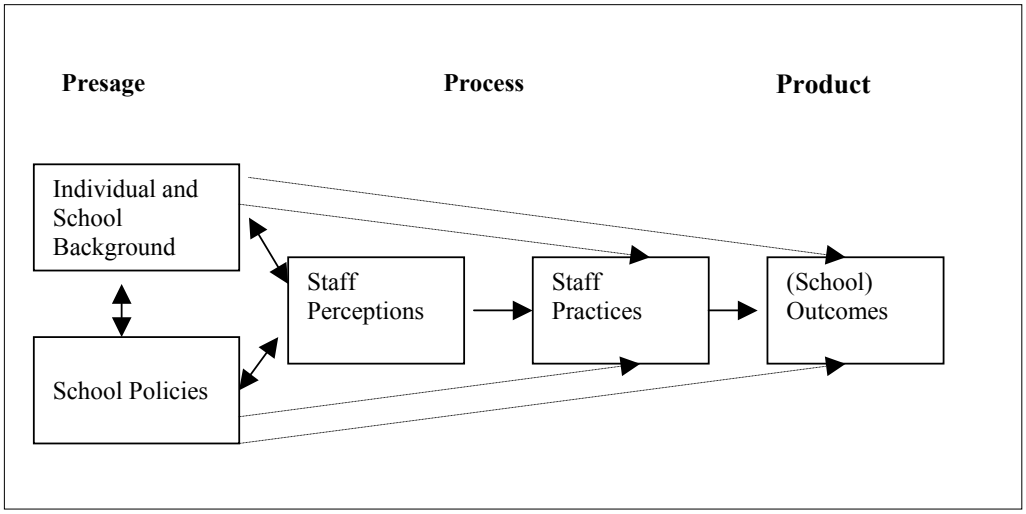
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| **Presage Institutional and school context** | **Presage Institutional and school policies** | **Process Perceptions** | **Process Practices** | **Product** |
| History of postgraduate research | School policies: Presence of guidelines in 13 areas | Satisfaction Personal | Approach to postgraduate supervision | Workload |
| No. of staff in school | | Satisfaction departmental | | Completion rates |
| % of PhDs in staff of school | | Stress levels | | Scholarships |
| Campus: size and distance | | | | Conflict, stress |
| Qualifications, experience, gender etc | | | | |

I constructed cases for each staff member by allocating all data a position which a grid and I then searched the grids for patterns and trends. This yielded groups of cases for each position, for each school, for each discipline etc. To protect the anonymity of my participants I decided to report on the situation and perceptions of groups e.g. inexperienced supervisors, and only report in summary the situation of individuals, schools and disciplines and to suggest trends. I used the data from students to confirm the reports about policies and general perceptions about the disciplines made by the staff as well as to help me isolate common issues such as distance and size, but I did not add the student sample to my detailed analysis.

I related the five areas to each other according to a systematic model of learning which conceives of the learning process according to a presage, process, product model, (Biggs, J.B. 1993).[3] Within this model the interrelationships between each component

[3] Biggs, J.B. "From Theory to Practice: A Cognitive Systems *Approach' Higher Education Research and Development,* Vol 12 No 1.

can be seen as both following a linear progression as well as tending towards an overall equilibrium. The process can be described as starting with the learner's background: There is a relationship between a learner's characteristics (1) and the learning context (2) to the learner's perceptions of the context (3). This perception then has a direct relationship to the approaches that are used in learning (4). These affect the learning outcomes (5). The learner's characteristics also indirectly affect the approaches used (4) as well as the learning outcomes (5) while both in turn have an effect on learning characteristics and learning contexts. The systematic nature of these relationships explains why a change in one component may or may not cause a change in another, depending on the overall situation.




My project attempted to describe the range of relationships between the various components for supervisors and school in new academic disciplines and non-metropolitan campuses. The internal logic between each part of each component and between all components changes for each individual. In this model outcomes of supervision would be expected to be related to staff perceptions and practices which are interrelated to individual/school contexts and school policies. The issue being that staff practices are a function of their perceptions of school policies and the wider contexts. By studying patterns and trends I was able to sift out some tentative characteristic patterns. Testing the coherence of the approach will need to be done with a larger sample.

**Results**

The data are complex and rich. In the following I shall attempt to report on the range of perceptions and practices which I found. Thematic summaries will illustrate the wide-ranging nature of the perceptions amongst people in my sample. The analysis of these perceptions according to specific groups will make these more relevant to each position within the postgraduate research process. The summaries of the specific range of practices for three different positions i.e. postgraduate coordinators, experienced supervisors and inexperienced supervisors bring out more detail about how background factors and perceptions directly affect the practices.

*1. Thematic Summaries*

A summary of the main themes can be found in Figures 1-5. A thematic summary of all interviews yielded four groups of issues: those concerning distance (Fig. 1), size (Fig 2), supervising in new academic disciplines (Fig. 3) and studying in new academic disciplines (Fig. 4). I also collected a list of examples of perceived good practice relating to supervision (Fig. 5).

**Fig. 1 Effects of DISTANCE from main campus on postgraduate supervision *and* study**

| **Positive** | **Negative** |
|---|---|
| Provides access to postgraduate study for local candidates | As students are centrally enrolled the local faculty treats them as 'off-campus' students |
| You don't get distracted | Overcoming distance costs and effort<br><br>Distance works against attracting overseas visitors, good staff. |
| Interactive Technology has made a big change | Library needs improving and access to networks is slow. |
| Staff are committed. | Isolation promotes the lack of currency in academics. |

**Fig. 2 Effects of SIZE of campus on postgraduate supervision *and* study**

| **Positive** | **Negative** |
|---|---|
| Intimacy promotes close collaboration and integration of academics and their work and research into the community. | Ethical question of objectivity arises due to overlap of people's roles as students, supervisors, partners, community committee members, employers. |
| There is more time available per students | There is a lack of choice of supervisors, students and topics. |
| A process of value-adding happens on non-metro campuses. | The time consuming nature of this process is not acknowledged. |
| | Lack of choice forces some academics to take on tasks for which they are nit ready i.e. postgraduate supervision. |
| | Some academics cannot go on study leave as they cannot be 'replaced' by anybody. |

The issues concerning size and distance of *campus* were similar for both staff and students and were fairly evenly balanced. They are relatively constant and predictable. Size of *school* is a more complex issue.

**Fig. 3 Issues of 'AGE of an ACADEMIC DISCIPLINE' in postgraduate SUPERVISION**

| Issue | Details | | |
|---|---|---|---|
| Intra institutional issues | • Lack of openness, co-operation, development approaches, open academic exchange, interdisciplinary ventures, mentoring and peer support | | |
| | • Central management dominated by people form classic research disciplines | • Pressure to increase postgraduate numbers | • Culture of exclusivity, privacy and individuality dominates |
| Students | • No or little research or academic writing skills | • Successful, amities proficient professionals | |
| Staff | • Few qualified colleagues<br>• Small pool of examiners | • Qualified but unwilling colleagues | |
| | • Inexperienced underqualified colleagues. | • Colleagues as candidates | |
| Work | • Heavy workloads with no critical mass of activity | | |
| Lack of models | • Discipline and academic field delineations are being forged | • Research is unevenly accepted by professionals and industry | • Students are unclear about relevance of qualifications |
| Academic development | • Limited opportunities to learn from mentors or peers | • Vision or commitment to research are sometimes criticised or marginalised | |

**Fig. 4 Issues of 'AGE and ACADEMIC DISCIPLINE' in postgraduate STUDY**

| Issue | Details | |
|---|---|---|
| Main issue | • Students feel they are on their own but under pressure to perform well | |
| Facilities | • Uneven provision of rooms, desks, photocopiers, post boxes, telephones, support for networking, computing or other specialise work | |
| Culture | • Small groups of staff with close relationships are sometimes perceived as a power block | • Older inexperienced staff seem uncomfortable with proficient research students |
| | • Lack of a student 'voice' | |
| Discipline | • People with research experience are perceived as set against people with professional skills | |
| | • Adequate supervision and research infrastructure in professional discipline is difficult to obtain | |
| | • Enforcement of disciplinary limits of the newly emerging areas acts as barrier against interdisciplinary projects | • The changing climate makes career decisions difficult |
| Staffing | • Narrow choice of supervisor | • Lack of adequate replacements for absent supervisors |
| Information | • Lack of induction into discipline, school or campus, rights and obligations | |

**Fig. 5 Examples of good practice in supervision**

- Solid 'research culture' exists before postgraduates enrolled.
- Thesis topics are located in areas of school research strengths.
- In-service, mentoring and peer support are available for inexperienced supervisors on both discipline-specific as well as cross-disciplinary basis.
- Postgraduate degrees are designed to suit the needs of staff, students and industry.
- Postgraduate teaching and supervision is valued in its own right and balanced with undergraduate teaching in teaching load allocations.
- Research-supervisory panels are established to develop policies and provide peer support for supervisors.
- School Thesis Supervisor/Coordinator or Postgraduate Coordinator plays the role of mentor for both students and supervisors and is a fairly senior, actively research staff member.
- Each candidate has more than one supervisor with clearly delineated tasks.
- Mentoring of supervisors is acknowledged as a load.
- Obvious hurdles/timelines exists for both supervisor and candidate and are validated by the school.
- School has its own method of checking on progress of candidatures in addition to the institutional process.

2. *Range of perceptions of different groups*

An analysis of the data for each group of factors and each individual factor gave a different picture. The picture also changed according to the unit of analysis e.g. individual, school, group or discipline. In the following I shall describe the range of perception and practice patterns for individuals, schools and some groups. I shall them attempt to discuss what they tell us about hot the situation of individuals and schools can be approached in the context of academic and policy development to foster rapid and effective growth of a research culture.

**Individuals**

As perceptions and practiced vary widely, outcomes were often difficult to ascertain for individuals. I concentrated mostly on workload and existence of conflict and stress as the major indicators. As previously stated, the factors I looked at can be conceived as striving for some sort of overall equilibrium and therefore a chance of on e factor can make a dramatic difference, or it can make not difference at all.

Students

Being a student in a new academic discipline or in a non-metropolitan campus brings with it risks as well as opportunities. Deciding in which discipline to enrol is pivotal: is supporting and growing in the research culture of a professional discipline more important than the available choice of topics, supervisors and academic support level? What is more strategic: to get a degree quickly or to have a degree in a certain discipline?

The lack of models puts strain on students who have to work out what is sufficiently high standard, what is relevant for the discipline, what are the emerging questions to be explored. The interdisciplinary or groundbreaking nature of the research makes the development of a suitable methodology a more time consuming and sometimes a torturous task.

New academic disciplines frequently attract students who are professionals with career and family responsibilities. This is not always acknowledged by their school, instead students are expected to 'fit into' a traditional postgraduate role, even thought eh school encouraged them strongly to enrol. Many postgraduates feel disappointed and confused about this apparent contradiction.

Staff

Staff in new academic areas have to negotiate many stress points: large numbers of students in many diverse areas, insufficient supporting policies for dealing with crises, pressure on staff to complete their degrees and immediately start supervising, demands by colleagues to be given paid time off to complete their degrees full-time, unhappy, isolated older colleagues who feel that they will now never 'fit in' and that their professional practical expertise is undervalued, a lack of a supportive research culture, insufficient internal policy and guideline development. There are no consistent patterns which could be isolated, as even a difference in only one variable (i.e. gender, seniority) may have a considerable effect on outcomes.

Some staff in new disciplines and non-metropolitan campuses work long hours, have high numbers of postgraduate students, sometimes with an impressively wide range of topics and approaches. The track record of some senior staff is excellent and they are aware that the discipline needs their active participation now and see the work as an investment into the disciplines' future. Some are frustrated and even impatient with what they perceive as the remnants of a 'college' culture in their discipline. Some are genuinely depressed about their personal chances of ever getting into a research culture where they can fully develop their skill as supervisors and mentors as well as produce high quality research themselves. Others are embittered and negative, because they blame they blame this culture for the failure of this earlier attempts to introduce rigorous research.

Junior staff experience the lack of training for their role as supervisors as a source of stress and hunt around for ideas and opportunities to gain experience, exchange views and get advice. They state that their own experience of being supervised is their only source of information and often perceive their students as peers. Many feel 'pushed' into this role as they have the qualifications, but they feel that they need more, i.e. experience and in-service. Some feel that the triple task of undergraduate teaching, research and postgraduate supervision is leading to high stress levels. Some are unsure about the various stages of a candidature and guidelines or policies relating to these staged. They realise that they are some new breed, as some are surrounded by more senior, but less qualified colleagues. Some feel exploited by more senior colleagues who could supervise, but are unwilling to do so. When this situation coincides with a gender imbalance, conflict and stress are inevitable.

**Schools**

The situation of the schools in my sample varied widely depending on number of PhDs in the school, existence of policies, discipline and campus.

Generally the number of qualified staff made the most obvious difference in the school comparison. Schools with higher proportion of qualified staff were more confident and

proud of their achievements, irrespective of whether the discipline was classic or new, Schools with low numbers of staff with PhDs felt under pressure, but unable to change their practices as quickly as the institution seems to want them to.

After the % of PhDs held by the school's staff, the numbers and effectiveness of policies supporting high quality supervision practices within the school was the most reliable predictor of positive outcomes. The existence of practices and policies supporting quality supervision tended to be an outcome of the combination of sufficient numbers of qualified staff and a perception of the situation as potentially successful. This combination happened more frequently amongst the new disciplines.

The schools in classic disciplines (which in my sample were located in non-metropolitan campuses) with higher % of doctorates amongst their staff reported lower levels of outcomes. This combined frequently with a perception held by staff that their success levels were low, their workloads high and levels of support from the central campus for their research students and their work as supervisors was insufficient. These schools had less interest in developing policies or structures to foster skills in supervision practices than school from new academic areas with comparable numbers of PhDs amongst their staff.

*3. Range of specific practices of different positions*

The practices of staff currently working in this area, their specific strategies and achievements towards the development of new and relevant traditions relating to postgraduate research and supervision give us valuable insights into the situation. I found that background details as well as perceptions of their situation and of the university policies related to the practices which were adopted.

Postgraduate Coordinators

There are some relatively young, quite confident PGCs who work hard at developing their peer's expertise and confidence, who are strong and leading in the formulation of constructive, useful policies and who feel that the new situation in providing them with a welcome opportunity to grow, to put their expertise to use and to help shape and form a new tradition and culture of research. Most of these work amazingly long hours, and are highly committed if unsure if this commitment will be honoured by the institution with promotion or even tenure. Most follow the university guidelines or have replaced them with their own, school specific ones. On top of this workload, they frequently publish widely as well. This is where my sample provided the most astonishing examples of valuable developmental achievements in the generation of a new research culture.

Slightly more senior PGCs, some of whom are from older disciplines, who have moved into new disciplines or a non-metropolitan campus are slightly less positive. They still see it as an opportunity, but often with mixed feeling, as if they are perhaps wasting their talents, or feeling slightly heroic for giving their expertise. They work and have fairly set ways of approaching supervision, often modelled on the classic disciplines from which they originate. Frequently they are dismissive of the university guidelines but do not always support the development of school specific policies. Many among this group have grievances about the manner in which the main campus or centra administration handle the postgraduate concerns of their discipline or campus.

Some younger, fairly inexperienced, recently qualified PGCs are overworked, under-resourced and unprepared for their task. Not knowing much about the position, or the type of issue which crop up at the postgraduate level. They are honoured or flattered to

be offered the position, but soon find it a thankless task. They work long hours while more senior academics sometimes ignore their attempts to coordinate the area. Senior, less qualified academics resent and ignore the new practices and requirements. Their lack of seniority gives this group of PGCs no handle with which to tackle the situation. They feel that postgraduate research is not receiving high priority by the senior staff in their discipline. Frequently they take on 'unofficial' supervision tasks, because they are aware of problems, but have no ability to fix them other than with their own 'hand-on' intervention. Instituting university-based guidelines seems impossible, let alone develop some which are specific to their discipline. These situations are frequently intractable and frustratingly hard to improve.

Experienced Supervisor

There is a lot of overlap between the practices of the experienced supervisors and the first group of PGC as there is also an overlap of personnel. Experienced supervisors in new disciplines and non-metropolitan campuses mostly work long hours have high numbers of postgraduate students. Those who have experience of other systems such as the North America or European, where the task of a supervisor isn't so privately conducted and more work is done with course work and group supervision fid that these practices which would benefit their discipline are discouraged by the University's structures and by the manner in which the younger, less experienced staff have to apportion time and effort to the manyfold tasks which they are expected to perform. Sharing of supervision, without EFTSUs is discouraged which this group feels is a shame. They themselves frequently supervise unofficially, but feel that they can, because their position is secure and can understand their younger colleague's reluctance. The call for sensible central support in the area of postgraduate study was most eloquently and forcefully voiced by this group. Not all members of this group are aware of the details of the university guidelines for this area, neither are all willing to initiate the development of specific school based practices and guidelines. This is mainly due to their background, age and the manner in which they perceive postgraduate supervision. Those who reject the development of guidelines often prefer a mentoring system of introducing new supervisors into the activity.

Inexperienced Supervisors

Practices in groups are fairly uniform. Using get feeling, their own postgraduate experience and if available, the university guidelines, they experiment and improvise with little awareness of whether what they do is having the desired effect or not. They also perceive that this activity is labour intensive, but undervalued by the school and institutional structures. As they are not only inexperienced in their role as supervisors, bit also functioning in a new discipline with a short history of research they are frequently short of examples, models or even people who can act as sounding boards. Some have large numbers of students and few supportive, more experienced colleagues. They are overworked and feel that the responsibility of guiding a student in a major research task needs a person who is an experienced researcher, not just a person who has a postgraduate degree. They call for mentoring and guidelines to help them.

## Conclusions

I set out to shed light on the following questions:

1. What is the range of perceptions and practices of staff and students of postgraduate supervision in the new campuses and disciplines?

2. To what extent has a polarity developed between "creative, productive and relevant" units on the one hand and those who are "riddled with conflict and compromise" and "becoming increasingly irrelevant"? (Turpin & Hill 1991).
3. How can we use our understanding of these perceptions and practices when planning the development of policies and developmental structures to foster a fast and effective growth or a research culture in the academic areas with relatively short histories of postgraduate research?

The situation changes dramatically for each unit of analysis. An overall school situation may contradict the situation of individuals within that school, or two schools within one discipline may have very different positions. Predictably, there are no clear indicators for positive or negative outcomes for individuals, whilst some seem to exist for schools.

The most important indicator of positive outcomes in my analysis is the existence of a critical mass of qualified staff in each group. The second indicator is the existence of school-based structures, policies and guidelines which promote good supervision practices. Supportive structures cannot develop without a sufficiently large group of committed people, who have a high level of experience and who have gone beyond developing good patterns of practice for themselves and their own students. These two factors, the critical mass of qualified and experienced staff and their ability to reflect on their practice and institute new policies and guidelines could be interpreted as constituent parts of a research culture for both no-metropolitan campuses and new academic disciplines.

My results show that the stresses and strains of post-1987 merged and blended universities in relation to the expansion into research are still being felt. The notion that the alignment between research culture and structures which enable and support this culture are decisive for the quality of a student's experience of research study and the confidence and success of supervisors still seems relevant. However, my study provides no evidence that the two factors are able to evolve independently of one another, Therefore the diversity in outcome levels between academic units might continue for some years. When the uneven levels in the proportion of qualified staff have become less obvious and school policies have had a chance to develop a research culture can become reality.

The design of any academic or policy development activities to foster a research culture will have to take into consideration the delicately interrelated nature of the various factors which my study used. Support for staff members to get sufficiently qualified may be more urgent in some schools than in others, or for some individuals than for others. The development of discipline-specific policies, guidelines and in-service opportunities for supervisors and researchers is important for all new academic disciplines, as 'introduced' or 'copied' practices will not be helpful to an evolving research field. However, in order to be successful and effective this step will need to be preceded by a perception in the staff of postgraduate supervision and research generally as relevant for them, as positive and dynamic and in need of new relevant practices. More energy needs to be put into this preliminary step, so that the growth of the specific policies or guidelines can be a natural extension of the changed perceptions amongst the staff.

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# Running An International Collaboration Across Three Continents

J Matisons

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Ahlström Glassfibre Ltd, Karhula, Finland.

## Introduction

Recent changes in the Australian higher education system have raised quite some concern, and also some heated debates, concerning the quality inherent in our higher education, university system. Such debate has been documented in many government reports, policy statements, and by the popular press. It does deserve close attention. As Henry Brooks Adams once said, "Nothing in education is so astonishing as the amount of ignorance it accumulates in the form of inert facts".

## Historical Perspectives in Quality

The quality debate in higher education is part of a much broader social movement, that is occurring, not only in this nation, but across the world. It is interesting to look at quality from a historical perspective. Historically, quality really only surfaces as a national issue, when there is a decided lack of it, or a decline in quality.

Over-optimism and quality were widely prevalent before the fall of the Roman empire. We need not go back that far though, to see similar examples. The United States in the 1920's was the world of F. Scott Fitzgerald's jazz America; youth was prominent, skirts were short, dances were frenzied and everyone lived on an overwhelming sense of unprecedented newness. Quality of life was the focal issue. But, all the optimistic euphoria spiralled dizzily downwards into reality at the Great Depression.

Equally, European intellectuals enthusiastically welcomed the new Soviet regime, early in this century. A prominent historian described the stream of early Western tourist in Russia as "... hilarious - clergymen reverently walking through anti-God museums; then smiling radiantly as they were told that in the USSR capital punishment had been abolished; liberals overjoyed to learn that what amounted to proportional representation had been developed". History, of course, has shown where reality lay.

## Quality in Postgraduate Research

G. M. Trevelyan writes "Education has produced a vast population able to read, but unable to distinguish what is worth reading ..." Does quality in postgraduate research exist? Yes, I believe it does. It exists where high standards are maintained, and attention to detail is commonplace. My experience of postgraduate scientific research within Australia has indicated an alarming decrease in quality over the last 20 years.

In 1992, the Higher Education Council issued a report "Achieving Quality". In that report it maintains that a graduate from an Australian university ought to be able to operate anywhere, at a professional level, consistent with the best, in the world. That is our ambition as a nation for the graduates of our university system. It is a notable ambition, and is one that the Polymer Science Group ascribes to, and promotes. It is also an ambition that is not easily achievable.

I can remember, as a young postgraduate, leaving to do postdoctoral work in another continent. Even though I had worked for a very eminent and an internationally recognised scientist, and had a string of publications, it was still a shock to come to this place and realise that my skill level wasn't at the level of the colleagues working with me. I learned from that experience; otherwise I wouldn't be where I am today. There were some Australian colleagues that didn't survive this environment. Quality was related to skill with advanced instrumentation.

**Quality in Polymer Science**

I want to focus now on where polymer science is and why it is important in the national context. Then, I want to focus on a specific problem that the Polymer Science Group addressed, and how it took several scientists in Finland, Germany, the United States and Australia to solve that problem.

Let's address the first issue - polymer (or plastics) science. In 1989 without much fanfare, the world entered what can only be called, the polymer age. What do I mean by that? Simply put, in 1989 the weight of polymers produced in the world exceeded that of metals used. This constitutes a rather remarkable growth. In 1955 polymers were in their infancy and scientists were only just starting to understand them. The weight of polymers produced then, wouldn't have equalled one pixel on a television screen (where the screen represents the metals in use). There has only been a few decades separating the first commercial development of polymers to their pervasive use. Synthetic polymers nowadays are so well integrated into the very fabric of our society, that really we take little notice of our dependence on them. If you think of the social benefits in health, medicine, transportation, housing, defence, energy, electronics, employment, trade (the list can just go on and on). Synthetic polymers have a large impact on our lives. In fact, polymers affect every area of our lives.

If we look at polymer science and engineering worldwide, we can see that the US dominates polymer science and engineering. There are good reasons why it does. Polymer science and engineering, in terms of commodity plastics, developed after the second world war in the United States and Germany. Those two nations still occupy a key role in polymer science and engineering.

However, that role is changing. Today 80% of the world's patents are coming out of Asia. The next generation of polymeric materials may well have an Asian origin or at least an Asian influence. Certainly companies like Dow Corning and General Electric have recognised this trend, and formed strategic alliances with major chemical corporations in Japan.

There are opportunities today, and they are becoming quite abundant, for creating new polymeric materials; for modifying existing polymers to use in

new applications and to design materials and polymers on a molecular scale. Such research creates more demands on the scientist, his skills and the quality of instrumentation he has available to meet these new challenges.

**Quality in Solving One Scientific Research Problem**

A lot of the issues affecting quality are apparent in a specific problem. Three years ago, the Polymer Science Group was involved in analysing polymer adsorption onto glass surfaces. During the research, one student detected a sudden decrease in adsorption in the last two samples (of a series of 12). Generally, scientists observing a sudden abberation in their research results, would repeat the two analyses in question. The student did just that, and these two results were reproducible.

If those two results were consistent, what about the other results - were they consistent? To our surprise, the other results were now 1/10 of their previous value. Obviously something had happened during the course of the experiments. New glass fibre samples supplied saw the absorption return to its previous higher levels. The glass was stored in an isolated room, in a plastic container. There were no other chemicals at the site. There shouldn't have been any detrimental absorption onto the glass. Yet, halfway through our research, two separate glass batches had suffered a dramatic decrease in polymer absorption.

We applied a battery of instrumental techniques, to isolate the reason for the sudden change that had occurred. Only one technique detected a difference on the glass surface; a particular surface analysis technique where a new peak appeared. In science, if you're reliant on one technique, you are not going to get any reproducible quality. You must have a battery of techniques, and these techniques must be based on high quality instrumentation.

Only one technique capable of assessing differences on the glass surface. So it remained for about eight to 10 months until I came to Finland. There, using another specialist technique, a difference between new fibres supplied by the manufacturer and the older fibres was seen again. The size of the difference fluctuated however. It was only the collaborative efforts at the Polymer Institute in Dresden, that could quantify this difference. Scientists there had developed this particular technique into the world's best.

Meanwhile, in Australia, washing glass fibres with a solvent called toluene, again produced previous levels of polymer absorption. Both detection techniques confirmed the surface had returned to its original state.

We still didn't understand however, how in an isolated room such a transformation occurred. We could have let the problem just slip away and have forgotten about it, but we persisted in finding the solution. We had new fibres, and knew how to regenerate our old fibres. We just didn't understand how the glass surface had changed, and what had caused the change.

Understanding came when I visited Dow Corning in the United States. There, discussions at the interface expertise centre isolated some minor changes in elemental profiles. Scientists at Dow Corning believed the fibres had formic acid absorbed on the surface, as such acid was not spectroscopically detectable. Trials in Australia later confirmed exactly that.

Quality in research had gone beyond individual skill and technique. It was necessary to have quality instrumentation, but even here more than one type of technique was necessary. The quality issue did not stop there however. It still needed expertise, resident in three other countries, and cooperative collaboration to establish even a working hypothesis.

The only issue remaining, was to discover how formic acid penetrated an isolated environment to cause surface contamination. That was more difficult than what it should have been.

Eventually we did actually isolate the problem. It turned out that a teaching lab at the far end of the building, had formic acid in a fume cupboard for undergraduate experiments. To conserve energy, save money and improve efficiency, the university had the air conditioning system switched off over the weekend. The way the vents are interconnected, formic acid penetrated the office area where the glass was stored. Worse still, when we got back to work, the air conditioning was functioning again, being automatically switched on. Now our fibres were completely changed, without anyone being aware of it. It took two and a half years to discover what had happened. It took a lot of effort in four different countries to realise what the problem was, and how to solve it. It needed a multidisciplinary approach. On our own, we did not get far.

By collaboration, we improved the precision of our various techniques, and so developed some of the world's best techniques for looking at things on glass surfaces.

**The Changing Face of Scientific Research During This Century**

The problem we solved reflects where scientific research has come this century. At the beginning of this century, scientists worked with small molecules, and this saw the development of molecular physics as well as organic and inorganic chemistry. In that respect, scientists were working with small molecules.

Halfway through this century, scientists started working with large molecules. macromolecules or polymers. This saw the development of many plastics, and has ushered the world into the polymer age. Now, scientists are working with the complex, or actual real life situations. They are no longer just content to use simple models to examine complex multidisciplinary issues, they are directly examining such issues with a battery of advanced instrumentation, made available during the late 1980's.

**National Issues in Polymer Science**

Where are we then in this nation? In terms of a major player in polymer science and engineering, we remain the only continent in the world which doesn't have a polymer institute. Australia has entered the polymer age with many metallurgy engineering departments looking at materials chemistry from a metals perspective, but our polymer science and engineering is still at a very low level compared to most civilised western nations.
Several questions need to be asked:

- Will government policy encourage a state of health in the polymer industry in the future?

- What level of research and development spending and commitment is necessary to enable effective competition with other nations?

- How can funding for university, industry and government facilities assist in the development of new technologies and products that will benefit not only our society but maybe the world at large?

- How can the state-of-the-art industrial infrastructure be attained in processing and production equipment, when Australia tends to follow other nations, regarding commercial polymer science initiatives?

- How should production, distribution, use and disposal of polymeric materials be managed to ensure protection of the environment and the health of the public?

These are serious issues and I don't believe they have been addressed clearly. It is essential to define concrete national objectives, so that we can easily assess when such objectives are achieved.

**Quality Within the Polymer Science Group**

It is good to consider the national context. However, postgraduate research quality is an issue that each research group must address within that national context. The Polymer Science Group has in a sense created its own curriculum, set itself some high or demanding standards (both in terms of its own equipment capabilities and personal researcher skills), and made every possible effort to ensure its researchers are in close touch with world excellence in the field.

All the students that have been with the group for at least 12 months, have now worked in another country in a new polymer environment. Consequently, their knowledge and expertise has developed to very high levels. Last year, one student worked at Dow Corning Corporation for five months. The University of South Australia is lodging a joint patent on the research undertaken. Over the next three years another five to six patents should result from the collaborative interaction with Dow Corning Corporation.

**High Quality Australian Graduates in Polymer Science**

To achieve high quality graduates in polymer science and engineering, Australia must:

- establish a national Polymer Institute in Canberra with central state branches across Australia to coordinate specialist regional collaborative programs;

- examine new polymer materials in a collaborative and realistic manner, focussing on multidisciplinary research;

- establish unique applications for polymer materials in a national context;

- include semester long units in polymer science and engineering into chemistry, physics and engineering curricula at all Australian universities from second year onwards;

- promote and develop programs for primary and secondary teachers in polymer science, similar to those developed by the American Chemical Society during the 1980's;

- facilitate increased exchange between academic and industrial research laboratories;

- develop concerted programs that address issues of plastics recycling on a national level;

- encourage international as well as national collaborative ventures in polymer science;

- insist on quality instrumentation/equipment in research laboratories; and

- use existing strengths in silicate minerals to develop strong programs in inorganic polymers, such as silicones.

If we are going to be serious about scientific quality, then we have to be serious about the issues that produce quality science students. One such issue is the instrumentation necessary to do multidisciplinary research. Advanced instrumentation is expensive; science is not a cheap option. We are living in a polymer age, where advances are beginning to occur almost on a monthly basis. Some of those advances are going to have staggering implications. Quality becomes an issue if we choose to actively participate in the polymer age, for it determines the level and extent of Australian participation. If we do not participate, we must import at some technological level. The real concern is that importing has become the commercial norm, and participation in multidisciplinary scientific research an exception.

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# "Enriching the Postgraduate experience: What do students (seem to) want?'

Professor Peter McPhee*
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## 1. The philosophy of the Graduate Centre: interdisciplinary and multicultural; high tech and high fun.

The Graduate Centre of the University of Melbourne was established in 1994 in the '1888' building as a partnership between the School of Graduate Studies and the University of Melbourne Postgraduate Association. The opening of the entire facility, including dining and social areas, is scheduled for 1 May 1996.

Its major objectives are to:

- Take responsibility for regulation and oversight of the PhD programme of the University in conjunction with faculties and the academic departments in which students are enrolled;

- Maintain general oversight of the quality of research supervision in the University and monitor completion rates in postgraduate programmes;

- Maintain a collegial life within the School of Graduate Studies and the Graduate Centre, seeking to foster interdisciplinary communication, dialogue and debate amongst graduate students and academic staff through a variety of programmes and events;

- Enhance the development of presentation, communication and other practical skills in graduate students, and to support such students in the process of preparation of their theses through expert advice and access to facilities to assist them in this process.

The School enjoys a close and beneficial relationship with the University of Melbourne Postgraduate Association (UMPA), and has worked to further develop these ties since the School's inception. Students are represented on every major committee, and are involved in most aspects of policy development.

The School of Graduate Studies and Postgraduate Association co-manage the facilities at the Graduate Centre, thus ensuring that students' needs are met. The Association, for instance, allocates 70 spaces in small and large studies equipped with computers for students who are in the writing up phase of their thesis; the School, in turn, manages all information technology requirements for the Centre.

# INFRASTRUCTURE SUPPORT FOR POSTGRADUATE STUDENTS: IS THERE A STANDARD?

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## Introduction

Prompted by an earlier study, commissioned by the Postgraduate Board, of infrastructure requirements for postgraduate research study[1], the Academic Board of the University of New South Wales, in 1992 established a Working Party chaired by the Director of the Office of Postgraduate Studies to explore the advisability of institutional-wide standards for infrastructure being set. The report of this Working Party,[2] which recommended the establishment of standards, subsequently led to a document form the Postgraduate board entitled *Statement of Minimum Conditions for Postgraduate Study*. This document, which was subsequently widely discussed, made recommendations on the preferred level of support provided. These were endorsed by the Student Guild and rhe UNSW Staff Association.

The issue of infrastructure support for postgraduates was also reported on a number of occasions to the 1993 University Council by the Vice-Chancellor[3] and was the subject of study by the Vice-Chancellor's Office[4] which concluded that "the current level of resources provided for postgraduate students [was] sufficient in most areas to maintain high quality teaching and supervision". Other comments from this study identified significant problems in 36 (48%) of the 75 schools surveyed, primarily relating to lack of space and other resources and the reliance on subsidisation from external funding.

In November, 1993, the Vice-Chancellor established the current Working Party to address, inter alia, resource allocation for postgraduate students and other matters to do with the cultivation and promotion of an efficient and effective research ethics within the University's postgraduate research student population.

Terms of Reference of the Working Party were:

- Infrastructure requirements for postgraduate research study
- Policies and protocols governing postgraduate study
- Mechanisms for oversighting and ensuring compliance with policies and protocols

The report of the Working Party on Postgraduate Infrastructure, with Professor Chris Fell as Presiding Member, was submitted to the Vice-Chancellor in July 1995.

The following summary is information taken from the report, a copy of which can be obtained from the office of Professor Chris Fell, Deputy Vice-Chancellor, University of New South Wales, Sydney 2052.

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[1] E. Travers *Infrastructure Support for Postgraduate in the University Department.* Postgraduate Board. 1991

[2] *Infrastructure Support for Postgraduate Education within the University of New South Wale*s. Academic Board, 1992.

[3] Report of the Vice-Chancellor to Council, 3 May 1993, 28 June 1993 and 2 August 1993.

[4] T. Hand. *Allocation of Resources for Postgraduate Teaching.* Office of the Vice-Chancellor, 1993.

## 2. Postgraduate Space Data

Data on the space provided for postgraduate research students were collected by survey. The methodology adopted was to provide each School or autonomous Department with a list of registered postgraduate students and to ask in which room each student was located and whether they also had experimental space set aside in a laboratory. The survey instrument also questioned Schools about the number of desks provided for postgraduate students.

Separately from the School based survey, data at the individual School or autonomous Department level were collected from the University's Space Information Management System (SIMS) which holds records of the classification type of all rooms with the University.

> Recommendation 1: That the University explore, as a matter or urgency, the provision by 1996 to all full-time postgraduate research students of a desk on campus and a secure areas in which to store their research materials. This recommendation will particularly impact on the Faculties of Arts and Social Sciences, Built Environment, Commerce and Economics and Professional Studies.

## 3. Costs involved in supporting a postgraduate research student

Information was collected by a survey sent to the Heads of School and independent Departments.

Essential information elicited included:

- An estimate of the current average costs of supporting a postgraduate research student.
- The source of external funds used in research student infrastructure support.
- Whether the School makes specific allocations to the research infrastructure requirements of individual postgraduate research students.
- How funds would be used if an additional $500 or $2,500 per student was provided.
- What are seen to be crucial funding issues with respect to postgraduate research students.
- Whether any allowance was made in staff work loadings for postgraduate student supervision.
- Whether students are supervised by external staff (e.g. those in Centres) and whether provision is made for the transfer of the costs associated with this supervision.

> Recommendation 2: That, as a result of support for full-time postgraduate research students to be provided from the Special Research Fund, each Faculty should allocate to Schools a sum of at least $500'postgraduate research EFTSU to provide for basic infrastructure such as supply of stationery and office supplies, access to telephone and facsimile and photocopying.
>
> Recommendation 3: That Faculties, on an annual basis, report to the Vice-Chancellor on the way in which the number of postgraduate research

students in a particular School/Department is accounted for in their allocation of financial resources to Schools/Departments.

Recommendation 4: That all Schools/Departments be asked to report annually through their Deans on how postgraduate research student supervision is taken into account in the setting of teaching loads for academics members of staff.

Recommendation 5: That success in obtaining external funding be recognised as an important feature in providing infrastructure support for postgraduate research students and that reward mechanisms in the University for grant success should reflect this.

**4. Access to information services**

Information provided in the Survey suggested that, in the majority of Faculties, there was ready access by postgraduate research students to high quality computing facilities. This situation was particularly so outside of normal teaching house, when undergraduate demands were low. Nonetheless, it was notes that many Schools responded to the survey indicating that they would five a high priority to provision of computing facilities and software if more postgraduate support funds were available. The Working Party interpreted this as evidence of the pervasive nature of information technology in all current research activity and the need for the University to ensure that its researchers have access to the best information technology facilitates possible.

A key outcome of the Review of Academic and Administrative Computing (1993) was that the prime responsibility for the provision of computing for teaching and research should lie with Faculties, with a budget recompense being provided to allow for this. The University Capital Grants committee has indicated its willingness to provide support for the purchase of computing equipment for research where this represents a significant change in the facilities available and where the Faculty concerned will subsequently take on the maintenance and orderly replacement of the facility. It will, however, be important to continue to ensure that the information technology needs of UNSW postgraduate research students continue to be adequately met, as this will be an important factor in UNSW's maintaining research pre-eminence.

Recommendation 6: That the Division of Information Services conducts an early review, with subsequent regular reviews, of the information services provided for postgraduate research students, with the intention of advising on ways in which perceived shortcomings may be overcome.

**5. Policies and protocols governing postgraduate study**

The research conducted by postgraduate research students within UNSW is covered by a number of policies and protocols which have been out into place to ensure the best possible outcomes. Some of these are:

*Code of Conduct for the Responsible Practice of Research:* This document is binding on all researchers (both staff and students) at UNSW. Adopted by the Academic Board in 1993, it sets out the obligations of researchers in both experimental and non-experimental disciplines, and covers such issues as ethics, publication and authorship, retention of data and conflicts of interest. An Ombudsman (Director, Office of Postgraduate Studies) is available to provide counsel to postgraduate research students relating to the Code of Conduct and postgraduate research students have the facility,

through the Grievance procedures to enter a formal complaint with respect to deviations from the Code.

*Policy on supervision of research degree candidates and example of good practice and guidelines for reviews:* Adopted by the University Council in 1989, these documents cover the duties of higher degree supervisors and Schools with respect to postgraduate research students. They are prescriptive on the protocols necessary during the candidature of a higher degree candidate. These include regular review (one after six months enrolment and others at twelve monthly intervals during the period of candidature), the appointment of a co-supervisor, and a cleat statement of the thesis topics within the first year of study. The Policy also draws attention to the need for supervisors of higher degree students to limit the number of these students to a manageable number, it is a necessary condition of a student's taking up candidate in a particular School that that School will provide the resources necessary to foster the research.

*Rights and responsibilities of postgraduate research students:* A Council approved document which outlines the broad rights and responsibilities of postgraduate research students.

Policy on intellectual property: The University's policy on intellectual property is contained in the 'Student Guide' with which all students are provided at enrolment. The current policy is for the University's commercial arm, Unisearch Limited, to handle the patenting and commercial exploitation of intellectual property, developed by a postgraduate research student. In its statements of policy, the University indicates that student inventors can expect to receive benefits from their inventions. The Vice-Chancellor has recently established an Intellectual Property Working Party to review current UNSW policy and it is intended that the Working Party will report back in mid-1996.

The Working Party is of the view that the present Policies and Protocols represent a workable set of requirements that have found favour with both academic staff and postgraduate research students. With the completion of the intellectual property review, what is in place should serve the University effectively for the next triennium.

## 6. Mechanisms for overseeing and ensuring compliance with policies and protocols

Broad responsibility for maintaining oversight and ensuring compliance with policies and protocols governing postgraduate research study rests with the Office of Postgraduate Studies, the Postgraduate Studies Committee of the Academic Board, the Registrar and Deputy Principal and Deputy Vice-Chancellor (Research and International).

Recommendation 7: That School compliance with the requirements of the Code of Good Practice for Research Supervision and Student Review be regularly reported to the Vice-Chancellor by the Office of Postgraduate Studies, with the intention being to ensure full compliance with policies and protocols by 1996.

## 7. Development of 'Contract' with postgraduate research students

The working party is of the view that postgraduate research students are an important group within the University and contribute substantially to its research output. Whilst the mode in which research is done varies between disciplines (for example, team research is common in the experimental disciplines, whilst individual research is the

norm in the humanities) the University does owe all its postgraduate research students an agreed measure of infrastructure support with which to undertake their research projects.

Recommendation 8: That, on acceptance into a higher degree by research and prior to enrolment, postgraduate research students should be told specifically by the School concerned what basic infrastructure they can expect, and that this statement should be refined after the completion of the six-month review to provide a more detailed statement of the facilities expected to be provided for the research in question.

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# Quality Management at Massey University

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ABSTRACT
The degree of Doctor of Philosophy (PhD) at Massey University is based upon production of a thesis reporting original, supervised research. Currently nearly 500 candidates are enrolled. A university-wide representative Committee (Doctoral Research Committee - DRC) manages the full- or part-time programme and monitors candidates' progress from registration to examination. DRC responsibilities include quality maintenance by ensuring highest academic standards, protection of the interests of candidates and supervisors, and resolution of problems. Registration is a two step process involving Provisional Registration and Full Registration with the focus of the former on actions to increase prospects for successful completion. Candidate support and development is an important aspect of the Provisional phase. Supervision involves a Chief Supervisor and at least one other Supervisor; all new supervisors must undertake a course on supervision and administration of the degree. An objective-oriented six-monthly report from candidates and supervisors is used to monitor progress and signal problems. A Faculty representative and one other Committee member analyse reports and advise the DRC on required actions. Thesis examination involves written reports from three Examiners, normally the Chief supervisor and two examiners external to the University, and an oral examination convened by a member of the DRC. The Convenor reports to the DRC which then recommends to the University Academic Board on the award of the degree. A database on the registration status of each candidate is maintained and monthly examination status reports are provided to DRC members.

## INTRODUCTION

The degree of Doctor of Philosophy (PhD) at Massey University is centred on the production of a thesis reporting original, supervised research and analysis at an advanced level in a nominated field of study. The thesis may consist of several studies or cases in which the relationship to one another must be demonstrated. Published and/or unpublished research by candidates, conducted during enrolment for the degree, may be used in the thesis. As well as making an original contribution to knowledge, candidates must demonstrate an understanding of the relationship of the thesis to the wider context of the discipline in which the research belongs.

The degree normally involves a maximum of four years full-time or six years part-time study.

Currently nearly 500 candidates are enrolled, with projects representing most disciplines taught in the University.

## ADMINISTRATION OF THE DEGREE

A University-wide representative Committee (Doctoral Research Committee - DRC) administers the PhD degree. An appointee from the Academic Board chairs the Committee which includes: the Vice-Chancellor (ex officio) and the Assistant Vice-Chancellor (Research); representatives from each Faculty; three representatives from the School of Graduate Studies; an elected representative from PhD students; two women elected by Academic Board (to improve the gender balance); a Secretary who is a member of the Academic Section of Registry.

The DRC meets monthly and is responsible for developing policy and managing the programme to ensure academic quality is maintained, the interests of candidates and supervisors are protected, and problems are resolved wherever possible by mediation. Biannual meetings are held with recently registered candidates to discuss objectives and management of the PhD programme. Faculty representatives also hold periodic meetings with candidates in their respective Faculties.

A quality PhD programme requires quality administration. This can only be achieved if there is a close working relationship between academics and support staff. At Massey University the latter are part of the academic section of the Registry and there is an excellent working relationship on the one hand between the DRC Secretariat, Supervisors and Candidates, and on the other between the Secretariat and DRC members.

There are a number of factors and stages in the PhD degree at Massey University where important management decisions are made which can affect degree quality. These include the following: Approval in Principle; Registration; Six-monthly reports; Supervision; Examination.

## APPROVAL IN PRINCIPLE

The Approval in Principle category was introduced to provide evidence for prospective candidates that they are academically acceptable for PhD study at Massey University. The provision has proved particularly useful for students seeking scholarships or grants, employment leave, and in the case of some international students, a visa for entry to New Zealand. The only information considered is the candidate's academic suitability (which should be represented by an Honours or Masters degree with First Class or Upper Second Class - II,i - or equivalent) and the ability of the Department to adequately supervise the proposed area of study. The option of Approval in Principle is initiated at Departmental level.

## REGISTRATION

Registration is a two step process for all candidates. Step one - Provisional Registration (PR) - is normally twelve months. Information required for PR involves details of academic record and any other relevant research experience. At least two supervisors, including a Chief who must be a Massey University staff member with appropriate

qualifications and experience, must be nominated. Additional supervisors from within or external to the University may also be appointed

For PR, the HOD of the sponsoring Department must confirm that adequate funding is available for both the research project and the personal support of the student, as well as attest that any necessary facilities and equipment will be provided. While course work is not a feature of the Massey University PhD degree it is not uncommon for students to take one or two papers. These may include a Research Methods & Communications paper to provide quality support for students in year one - in some Departments or Faculties this paper is compulsory.

Experimental, library or archival research may be conducted external to the University. In such cases, to maintain the quality required by the DRC, assurance must be given that satisfactory supervision will be provided.

Step two of the registration process involved confirmation of registration (Full Registration - FR). This is a critical check point in the PhD and requires supervisors to signify that the candidate has demonstrated a satisfactory level of ability in the following areas:

( knowledge of the literature of the field and an ability to write a literature review
( ability to design and interpret research tasks
( ability to interpret data and write-up
( other requirements relevant to the field of study
( satisfactory completion of required course work_

The Chief Supervisor or the DRC may defer FR for a further six months or, where appropriate, terminate registration.

SIX-MONTHLY REPORTS

To assist with quality management, supervisors and the candidate must provide the DRC with six-monthly reports.

The candidate is required to reproduce the objectives which were established for this period in the last six-monthly report and comment on: attainment and if not why; any other significant achievements. For candidates in their provisional registration period the "Academic Performance Standards" stated in the Provisional Registration Form are used rather than the last six months' objectives.

Supervisors are required to comment briefly on the candidate's progress relative to any objectives and state any obstacles to progress. If there have been significant delays in progress beyond the candidate's control, consideration should be given to whether a suspension or compensatory extension should be granted. Reports must be signed by the candidate and supervisors, and counter-signed by the HOD, all of whom retain copies.

The Faculty representative and one other member of the DRC consider the reports and advises the DRC in writing of any concerns or action required.

SUPERVISION

A feature of the PhD is that it is a supervised degree. The guidance and direction that a candidate receives during their study is an important aspect of the programme.

Candidate-supervisor relationships are complex and constantly changing. The strength of these relationships can have a major influence on the quality of the graduate. At Massey University increased emphasis is being placed upon supporting the candidate during PR, and on staff development. All parties are made aware that the relationship should be an evolving one for the candidate, from intellectual dependence to independence during both the research and writing phases. Quality PhD programmes should produce graduates who are capable of independent research and thought, and able to critically analyse the information they generate. They must also have the ability to communicate well to a variety of audiences. To achieve these objectives the responsibilities of both candidates and supervisors must be clearly understood and discharged in a professional manner.

EXAMINATION

For the PhD examination three examiners are involved - the Chief Supervisor, an external New Zealand examiner, and an examiner from overseas. On occasions where a suitable New Zealand Examiner is not available two from overseas are appointed. The Examination Committee has a Convenor who is a member of the DRC. The Convenor facilitates the examination process, seeks to achieve a consensus between examiners if necessary, and provides a brief, confidential report to the Committee on the Examination and any matters of note. The DRC also sees the three written reports.

External examiners are appointed by the DRC on the recommendation of the Chief Supervisor. The candidate has no part in this process and does not know the identity of the external examiners until near the time of the oral examination. Examiners must have experience and qualifications relevant to the thesis area and should be well respected in their field of expertise. Each examiner provides (without consultation with the other examiners) a written report on the thesis. Reports are circulated to the other examiners prior to the oral.

The PhD examination is similar to Registration in that it is a two step process involving first a written report on the thesis and then an oral examination or viva.
Several options are open to examiners for the thesis, ranging from a pass without emendation to fail. Intermediate options all fall in the category of continuing examination.

The requirement for external examination of both the thesis and the candidate is considered to be an important factor in quality management. On occasions there has been pressure to make the oral optional but this has repeatedly been rejected. Professor Amy Zeller_ states

in a recent article "that the interests of Central Queensland University, the supervisors and the students would be well served by instituting an oral defence as part of the process for research higher degrees at Masters and PhD levels." Massey University concurs with this view and has retained the traditional oral examination.

On occasions teleconference examinations have been conducted and found to be very satisfactory. It is likely that this technology, and even videoconferencing, will be increasingly used at Massey University as an aid to the examination process.

## QUALITY ENHANCEMENT

There is virtually always room for improvement in any endeavour. In 1994-95 a small Working Group of experienced PhD supervisors, who themselves had studied under different PhD systems, and a PhD student considered ways to enhance the quality of the PhD degree at Massey University. Students and staff were invited to make submissions to the Working Group. Consequently a number of areas were identified for improvement. For example, newly appointed staff without previous PhD supervisory experience are now required to attend a course, run over two half-days, on supervision and the administration/management of the degree. Staff who have been supervisors are also encouraged to participate in supervisory courses run by the Training & Development Unit. Six-monthly report requirements have been modified to achieve a more objective and outcome oriented result.

Currently consideration is being given to implementing regular student surveys to evaluate postgraduate activities and services. Closer monitoring of the thesis examination progress has been implemented, with monthly Examination Status Reports being provided to DRC members. These remind Convenors of the date the thesis was despatched for examination, and what reports have been received. After 6 - 8 weeks it is the Convenor's responsibility to contact examiners whose reports are outstanding and encourage an early return.

## QUALITY MEASURES

With the advent of academic audits of Universities in countries such as the UK, Australia and New Zealand, increasing attention is being given to the application of quality measures and performance indicators. For PhD degrees, employment (and subsequent satisfactory performance), or placement on postdoctoral fellowships have been common measures of quality. However, Academic Auditors appear to be requiring more with specific performance indicators. Some which could be considered for use include:

- percentage of examinations which do not require substantial thesis modifications
- number of graduate publications in various journal categories
- percentage of candidates who complete their PhD studies within the prescribed time.

In New Zealand the New Zealand Universities' Academic Audit Unit, established in 1994, reports to the New Zealand Vice-Chancellors' Committee. In the Audit Manual_, reference

is made to the need for procedures which help clarify the expectations and responsibilities of supervisors and postgraduates. It may be helpful to reflect on these when considering quality. The Audit Manual suggests that the following questions be asked:

( Is there an institutional/departmental policy/charter for research students and supervisors?
( Is there a handbook setting out the expectations and responsibilities of students, supervisors, departments and the institution?
( Are the procedures for supervision and monitoring of research students adequate?
( Are the procedures for admitting and advising students effective?
( Is appropriate training in research methods and written and oral presentation provided for research students?
( Is there appropriate training, development and monitoring of postgraduate supervisors?
( Are there limits on the ratio of students to supervisors?
( Are there appropriate arrangements for monitoring, reporting and reviewing research students' progress?

The institution which can answer yes to all these questions and whose PhD graduates are keenly sought after by employers because of their reputation for excellence may conclude that it really does have a quality programme.

Perhaps before any of us make that conclusion for our institution we should reflect on the Role of Graduate Education.

"It is the role of graduate education to explore and advance the limits of knowledge and to define the state of the art in every field.

Its purpose is to serve society's needs in specific technical and professional ways, but also to serve the need for intellectual expansion.

Graduate education is a major source of future intellectual leaders of society, and is thus an integral and necessary part of our educational system"._

It is our goal that we fulfill that role at Massey University.

EPILOGUE

A key principle in the management of the PhD degree at Massey University is the locating of responsibility and accountability for quality with Departments, and more particularly with supervisors. Quality cannot be imposed by management or decree. Rather, it must be achieved by those involved with, or close to, delivery. In the centralised PhD management and administration model used at Massey University there is still considerable flexibility which is so necessary for the multiplicity of disciplines in a University environment. Such flexibility, however, must be within defined parameters. A model which combines

flexibility with specified parameters may be appropriate for other postgraduate research programmes. This may be considered at Massey University in the near future.

8 March 1996
KSM/cfh

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# Meeting Faculty Needs Through a University-wide Initiative

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**Abstract:**
The University of New South Wales has allocated a substantial sum from its 1995 "Quality Money" to support efforts at Faculty level to improve postgraduate research supervision. The project establishes a comprehensive and coordinated program to address supervision of postgraduates throughout the University; however, this program recognises that different Faculties have different histories and hence, different needs when it comes to staff development activities to enhance research supervision.

The first step in this project was a 2-day Planning Conference in March at which representatives of most Schools worked with facilitators with expertise in postgraduate research issues to develop strategies to address needs in their own Faculties. These proposals are being refined in consultation within the Faculties and will be submitted to gain financial assistance to implement the plans from a special fund set up for this project.

Implementation of Faculty plans will take place during 1996. All activities will be evaluated, and dissemination of the results will take place at a University conference in 1997. There will also be a publication of results of this project, which describes the Faculty initiatives and the outcomes.

This paper describes the Planning Conference and its outcomes in detail and presents an evaluation of the conference.

## INTRODUCTION

Many variations on the theme of working to improve the supervision of postgraduate research students have been played in recent years in Australia. In May 1992 the Australian Research Council and the Australian Vice-Chancellors' Committee (AVCC) organised a conference on "Research Training and Supervision" for representatives of institutions within the then-new Unified National System .(Moses, 1992).. The conference allowed for the exchange of information on supervisory practices and discussion of research training strategies on a system-wide basis. In 1992 Ortrun Zuber-Skerritt convened a Residential Workshop Program on Research Supervision aimed at developing both the research skills and the supervision skills of participants. This program was targeted at women researchers and aimed to prepare them to organise similar activities for their colleagues at their own institutions .(Zuber-Skerritt, 1992).. Similar programs with varying target groups have been conducted by a number of institutions or groups; among these are the University of Technology Sydney, Griffith University, Southern Cross University, and no doubt many others. The list of staff development activities at most institutions each year will include sessions for supervisors of students. In 1994 the three South Australian universities sponsored a national conference, "Quality In Postgraduate Research - Making It Happen" which is now being followed up with "Is It Happening?"

We wish to add our account of an initiative at the University of New South Wales which builds on experiences in contributing to the programs mentioned above and our work as a director of staff development (Peggy Nightingale), a learning adviser (Margaret Merten), and a director of postgraduate studies (Tony Milne).

The University of New South Wales is justifiably proud of its record as a leading research institution and of the achievements of its postgraduate students. However, at the same time, it is also aware of times when things do not work perfectly for students and their supervisors. In preparing its second "quality portfolio," the University surveyed postgraduate students

and identified a number of sources of dissatisfaction and found that different Schools or Faculties appeared to have different problems. Actually the survey identified a great deal of satisfaction, too, but one always tends to focus on the negatives. As a Dean said to one of us recently, "We thought we were doing really well, and I think we are, but last year we had a couple of problems and decided we could still do better. That is why I'll be at your conference."

The conference he referred to is the first step in a major initiative planned for 1996 at UNSW and funded with a grant from "Quality Money." The project offers Schools or Faculties, or sub-sets or cooperatives, funding to support the improvement of research supervision at the 'local' level. The conference was convened to introduce some strategies for achieving such improvement and to give people a chance to start developing their plans for applying for grants.

**THE PROJECT - BRIEF OVERVIEW**

The project was proposed jointly by the Professional Development Centre and the Office of Postgraduate Studies, and it was endorsed by the Teaching and Learning Committee of the Academic Board. A University committee which reviewed applications for grants funded from the "Quality Money" received by UNSW in the second round of CQAHE reviews allocated $90,000 to the project, stipulating that at least $78,000 should be distributed to the participating Schools and Faculties.

**Summary of Proposal**

We proposed to establish a comprehensive and coordinated program to address supervision of higher degree students throughout the University, but one which recognises that different Faculties have different histories and hence, different needs when it comes to staff development activities to enhance supervision of postgraduates.

This program is comprised of:

1. A two-day planning conference of deans, heads of school, and/or postgraduate coordinators
   The outcome of this planning conference was draft Faculty plans for funded projects aimed at improving research supervision.
2. Implementation in each of the 13 Faculties of the plans drafted during the conference.
   Funds will be allocated to the Faculty only upon approval of a plan and budget.
3. Review of the efficacy of those plans and outcomes of initiatives.
4. Dissemination of identified good practice through a University symposium and publication.

**Objectives**

1. To improve the quality of postgraduate research study for students at UNSW.
2. To assist Faculties to develop coherent programs of support for both students and supervisors (experienced or inexperienced).
3. To increase the numbers of well-prepared research supervisors through
   a. staff development activities relating to supervision,
   b. enhancing the skills of research supervision for experienced supervisors, and
   c. enhancing staff research skills, particularly for junior staff members and those in disciplines without research traditions.
4. To identify and disseminate good practice in the area of fostering research by both staff and students.

**Outcomes**

1. A University-wide but context-related strategy for enhancing student and staff research.
2. Improved research and research supervision.
3. A publication for the benefit of both UNSW and other universities which seek to enhance student and staff research.

**THE CONFERENCE - PROGRAM**

A working party to plan the conference was convened; members of the working party contributed a wide variety of experience and perspectives, including that of a young staff member who had recently completed a PhD and initiated a quality management scheme in his school to improve research supervision, a head of school and a coordinator of postgraduate studies - both experienced supervisors, a Learning Centre adviser who conducts thesis-writing workshops, two staff developers who have researched postgraduate issues, and the University's Director of Postgraduate Studies.

The working party decided early on that the conference should focus on the student/ supervisor relationship. It felt that there had been sufficient attention to developing policy and specifying codes of practice and guidelines for Schools and Faculties in previous initiatives at UNSW.

The working party also emphasised in its planning that this would be a very interactive conference at which the participants would be clarifying issues and generating ideas themselves. On the other hand, it was important to make sure that they had a foundation on which to build. Consequently, a substantial folder of materials was compiled and delivered to participants prior to the conference; it included examples of good practice from within the university, typical workshop outlines from sources such as Moses (1992), and conference papers and articles collected by members of the working party, as well as program details and bidding guidelines for grants.

In addition, the conference program itself (see Fig. 1) included speakers who were asked to raise issues from different perspectives, speakers who were asked to describe different types of initiatives which have already been put in place, and condensed case studies and workshops to suggest different approaches to staff development or opening discussion in participants' schools. We also 'imported' a few people who have established themselves as leaders in the consideration of postgraduate issues and who are known to be skilled in facilitating discussion of those issues (see Fig. 1).

For the Faculty Group meetings, we identified, usually by seeking a nominee of the Dean, someone from within the group to facilitate the discussion. They were briefed on how to run the issues identification session using nominal group technique prior to the conference, and they reported on draft plans to the final plenary session.

**THE CONFERENCE - ISSUES IDENTIFIED**

At UNSW there are 12 entities treated as Faculties, which range in size from 1 School (Faculty of Law or the Australian Graduate School of Management) to 12 (the Schools at the University College, Australian Defence Forces Academy); some groupings of Schools into Faculties seem odd to outsiders and indeed, are historical relics (eg. Chemical Engineering is in the Faculty of Applied Science not the Faculty of Engineering). For the issues identification session, we combined some of the smaller groups when we could see obvious similarities between them. Some of these similarities were that the disciplines represented did not have long traditions of research and PhD enrolments, or that the majority of Schools prepared students to enter professions, or that there was an obvious similarity of discipline culture.

**Improving Postgraduate Research Supervision**
**UNSW Planning Conference**
**22 - 23 March 1996**

**PROGRAM**

**DAY ONE**

**9.00** **Plenary session**
**Different perspectives on postgraduate research study**
Chris Fell, Deputy Vice-Chancellor (Research), the University's view
Adrian Lee, Head, School of Microbiology and Immunology, the supervisor's view
John Brennan, Postgrad Research Officer, UNSW Student Guild, the student's view
Martin Cooper, Faculty Higher Degree Committee, the committee perspective

**11.00** **Coffee**

**11.15** **Faculty Group Meetings**
**Identification of major issues using nominal group technique**

**12.30** **Lunch**

**1.30** **Plenary session**
**Strategies for improving research supervision**
Margaret Kiley, University of Adelaide, an induction program
Ron Wakefield, Civil Engineering, a quality assurance program
Linda Conrad, Griffith University, evaluating supervision
Jim Tognolini, Educational Testing Centre, an instrument for evaluating supervision

**2.30** **Case Study sessions**
Case Study # 1: Differing priorities - school, supervisor and student (Linda Conrad, Griffith University)
Case Study # 2: Intellectual property issues (Tony Milne, UNSW)
Case Study # 3: International student (Martin Hayden, Southern Cross University)
Case Study # 4: Break-down in relations between supervisor and student (Margot Pearson, Australian National University)
Case Study # 5: Failure of review process (Peggy Nightingale, UNSW)

**3.30** **Case Study sessions** (repeated)

**4.30** **Plenary session**

**DAY TWO**

**9.00** **Workshop sessions**
Workshop #1: Supervising Research Students (for novice supervisors) (Margot Pearson, Australian National University)
Workshop #2: Defining Topics and Establishing Methodology (Tony Milne, UNSW)
Workshop #3: From Isolation to Community (Linda Conrad, Griffith University)
Workshop #4: Strategies for Organising Successful Supervision at Departmental Level (Martin Hayden, Southern Cross University)
Workshop #5: Supporting Thesis Writers (Peggy Nightingale and Sue Johnston, UNSW)

**10.00** **Workshop sessions** (repeated)

**11.00** **Coffee**

**11.15** **Faculty Group meetings**
Development of draft plans for local initiatives

**12.30** **Lunch**

**1.30** **Plenary session**
**Faculty (or other) Group presentation of draft plans**
**Discussion**
**Evaluation and close**

Figure 1: Conference program

Issues identification was done using nominal group technique: generate a list of issues without discussion, clarify them, and 'vote' by each participant assigning points to those s/he gives highest priority. This was an important exercise in the context of a conference where the outcome was to be draft plans to address problem areas. We wanted participants to get a lot of issues out in the open and then decide which were most important in their own settings. We had also provided results of a survey of students and of staff in the conference folder and hoped participants would compare their issues with those identified by students and other staff.

The longest list of issues contained 29 items; the shortest, 10. Figure 2 presents the top three issues from each group. This list was distributed to all participants on Day 2.

A few observations about the issues identified during this session:

- On long lists there were always several items relating to breakdowns, or at least misunderstandings, in the supervisory relationship but these matters made top three issues for only four groups (if one includes "supervisors not good motivators..." and "Dealing with problem students" as being about failing relationships)
- Workload and time pressures on supervisors got high ratings in five of the eight groups; the other three at least mentioned difficulties of this type on their long lists.
- Four groups rated the review process as a serious problem; the others all mentioned it.
- Funding problems were mentioned in one form or another by all groups, but only one rated funding in their top three.
- The lack of a research or graduate culture was rated highly as a problem by three groups, but for the others it was not listed at all.
- Training of supervisors rated highly on two lists; four did not mention it at all.
- Intellectual property and copyright matters were not shared issues across all groups.
- All identified difficulties with students who were ill-prepared but with differing degrees of priority.
- Only two groups did not mention international students as a cause of concern, but none rated language or cultural differences or recognition of degrees gained overseas as a top three problem.

**TOP THREE ISSUES - DAY 1**

**Professional Studies, and Law**
- Recognition of supervision in workload and reward
- Shifting culture of school to research vis a vis teaching and money-making
- Limited/ zero funding at supervisory level for support eg. fieldwork

**Arts & Social Sciences**
- Lack of graduate culture
- Review process cannot respond to poor performance
- Negotiating and enforcing the supervisor/ student contract

**Engineering, and Applied Science**
- Overall time pressures on staff
- Absence of training for supervisors
- Supervisors not good motivators, communicators, managers

**Medicine**
- Recognition of supervision in workload
- Student/ supervisor difficulties
- Intellectual property and copyright

**Built Environment, and College of Fine Arts**
- Lack of research culture
- Poorly prepared students
- Systematic co-supervision arrangements

**Commerce & Economics, and Australian Graduate School of Management**
- Recognition for postgraduate supervision
- Make review process more effective

| |
|---|
| Difficult to terminate students who are on staff |
| **University College, Australian Defence Forces Academy** |
| Supervisors' time |
| Review process ineffective |
| Poorly defined research program |
| **Biological & Behavioural Sciences, and Science** |
| Processes and structure, eg. early definition of goals, duration |
| Dealing with problem students |
| Training and monitoring of supervisors |

Figure 2: Top Three Issues by Faculty Group

**THE CONFERENCE - TENTATIVE PLANS**

On Day 2 Faculty groups reconvened to develop draft plans of action to improve research supervision over the rest of 1996 and to consider what funding support they would seek. At this time some of the groups broke into sub-sets. After lunch they reported to a final plenary session.

For the conference planners this was like going into a class with a lesson plan which would not work if the students had not done their homework! However, there were ten reports of planned action. Most groups had multi-faceted plans.

One group thought they might seek funding to develop complex 'agent' software to help supervisors administer research students, thus reducing the time spent on such chores as checking enrolments, last meetings and progress reports. Such a project was not really within the scope of the funding available from this grant, but it would fall within guidelines for University Development Grants, applications for which are due at about the same time.

Other groups saw the need for much better information for both students and supervisors, and the conference had allowed them to identify some Schools with good manuals which they could use as models. Some imagined traditional print materials; others pictured CD ROM versions or Web sites. Peggy Nightingale agreed to collect everything that she could lay her hands on and house it in the Reading Room of the Professional Development Centre and to make these materials available electronically as well.

Some groups intend to look into developing induction programs for students, and one mentioned the possibility of offering research methods courses at off-shore locations so students would arrive better prepared for PhD study. There was even talk of developing a thesis-writing workshop for delivery via WWW.

Some groups intend to address supervisor training with workshops or seminars or case study discussion groups.

Several identified a need for better information about various stages of the student's career from recruitment to examination, including rates of progress, the specific nature of problems in their own Schools, and so on.

As reports and discussion progressed, the conference as a whole decided to refer one issue to the Registrar and one to the Postgraduate Studies Committee of the Academic Board. The first, to the Registrar, was a request to establish a small review group to look at the central data-bases and access to information about postgraduates available to Schools. Participants were reporting problems but it was difficult during the conference to identify their exact nature and cause. Nevertheless, there was enough concern to suggest that a small-scale review might be useful. The other matter the conference believed needed some further thought was the University's requirements for annual reports on student progress. Responsibility for monitoring progress has been delegated to Faculty Higher Degree committees, and there is a degree of scepticism about the quality of advice those committees

receive. Especially there is concern about students whose progress is borderline and that they may be given 'satisfactory' reports each year without adequate follow-up.

We will not receive applications for funding before this paper is delivered, so this part of our story is incomplete. However, Peggy Nightingale reports a number of approaches from School representatives who were at the conference about further development of plans for local activities, so it would appear that there will be some continuing activity as originally hoped.

**THE CONFERENCE - EVALUATION**

The conference working party decided that "happy sheet" evaluation of this conference would be pointless and chose instead to commission a "participant/ observer/ evaluator" to report to them after the conference. A colleague from the Learning Centre, Margaret Merten, who had not been involved in planning the conference was invited to take this role. She was considered particularly suitable because she is herself a PhD student and her topic is the postgraduate experience. She was introduced at the first session of the conference as someone who would not be upset if participants wished to offer negative comments as she was a completely neutral person though interested in the work we were doing. She produced a comprehensive report which was offered to the next meeting of the Teaching and Learning Committee of the UNSW Academic Board which is sponsoring the project.

**Overall Impressions**

Overall, the conference seemed to achieve its aims - participants developed Faculty plans and strategies for bidding for the money and there seemed to be a high level of commitment amongst the participants in discussing the issues of improving postgraduate supervision practices at UNSW.

**Case Studies**

*(We wish to acknowledge the source of four of the five case studies we used. They were prepared for the Adelaide 1994 conference "Quality in Postgraduate Research: Making It Happen" and used with the generous permission of colleagues associated with that conference.)*

It appeared that the case-studies in the conference served very well to provide a 'neutral' space for participants to begin to discuss issues related to supervision without risking or disclosing too much initially about themselves and their personal experiences. As conversation developed around the issues in the case-studies, participants began to speak more openly about their own experiences and School procedures. The sharing of these ideas and experiences was a real strength of the conference because it gave participants the opportunity to hear about each other's experiences as supervisors/postgraduate co-ordinators/Heads of Schools. Some postgraduate coordinators seemed to know a lot more about procedures within their Schools and the university than others. The discussions generated from the case-studies left no doubt that there were common experiences and concerns regarding supervision practices.

One case study allowed a great deal of talk and explanation of different School's procedures raising issues such as joint ownership of PhD material. The issue of ethics was discussed as being central to this situation with one participant observing "issues of co-ownership (between supervisor and PhD student) seem central" and this statement was largely agreed with by all present. This case study also generated a lot of discussion on managing relationships with students and dealing with problem students. Valuable information and School strategies were shared and there was a very real attempt to come up with problem solving ideas in regard to managing relationships between supervisors and students.

A second case-study was less effective than the above. It was most useful in generating the opportunity for participants to share their experiences and how their Schools deal with international students. The discussion raised issues of the accountability of supervisors to their students and it was generally agreed that, in the case-study, the supervisor was responsible for the problem and should have discouraged the student much earlier. The

participants came up with the following conclusions: that a proper review process is extremely important and that there should be proper grievance procedures for students.

One of the people brought in by the conference organisers to lead various sessions confirmed that the case-studies she had facilitated on the first day had worked very well in stimulating discussion amongst participants.

On the other hand, case studies were not appreciated by all participants. In fact, the case-studies elicited a mixed response:

- Some participants found them: silly, irrelevant, childish, difficult, boring and not specific enough. However, they did agree that they generated discussion.
- Other participants found the case-studies very useful for raising issues and discussion and did not express any negative opinions of them at all.

One participant found the case-studies too long. Vignettes used in a workshop were mentioned by a number of people as being the right length and appropriate for discussion. Another participant would rather have spent all his time going to workshops than case-studies.

**Workshops**

One workshop attended by the evaluator generated a lot of ideas about what constitutes good supervision. Feedback included one academic saying that he had found it very useful because now he had something to take back to his School - some guidelines for good supervision practices. Another participant said that he had not really learnt anything new because he had been "doing this for years", he hoped that his Head of School, who was also at the Conference, would now listen to what he had to offer about supervision issues in his School. There was good participation in this workshop and most participants felt that they had gained some ideas about managing supervision. There was a strong sense, and the leader of the session confirmed this, that the academics did not want to go back and be staff developers, but that they wanted strategies and ideas for their own personal practices of supervision.

In a second workshop session the participants were very focussed and much discussion was generated from vignettes (which were very convincing and well thought out). Again, participants seemed very focussed on getting as much advice as possible about strategies and approaches to supervision. Participants were introduced to the idea of supervision panels and participants found this an interesting strategy. One participant felt that he would find a panel approach to supervision very intimidating. Possibly this would be so partly because it means that supervision is no longer such a private process and it would give more power to the student.

**General Comments From Participants**

One participant felt very strongly about equity issues and that women had been under-represented. She felt that there were too many male speakers. She felt that the Conference "reproduces the male dominated culture in my Faculty area" and was slightly bored and frustrated as she felt that her School is "already addressing a lot of these issues of managing supervision and developing student centred approaches," that for Heads of Schools, the conference was not really anything new - "we're already doing lots of this." She also expressed disappointment at how "archaic some of the other Schools approaches and practices are." She had, however, found it very useful to hear other Schools' and individuals' stories.

Another participant also said that the most useful aspect had been the opportunity to hear other peoples' stories and to share experiences.

One participant found the conference "very useful for raising awareness of supervision issues and procedures." She explained that she had never been briefed by her postgraduate coordinator in how to get postgraduate students or any of the regulations and procedures of

supervision. The conference had "given me a much clearer perspective on this". The evaluator asked, "Will you take this back to a staff meeting?" She replied, very emphatically, "No! I'm going straight to the Head of School about these issues." She added that the conference had given her "confidence, direction and a sense of how important these issues are."

Another participant had found the conference "very useful, not to take back to staff - because I've given up on them - but for myself." He explained that he will work with his students on the issues and strategies that he has gained from the conference. He also said his next step was "We bid for the money now."

**General Observations**
Some participants at lunch on the first day were rather cynical about the small sum of $6000 ($78,000 divided among 12 Faculties), "You can't do anything with $6000." In this conversation it was observed that some participants disagreed with this view and could see possibilities of what might be done with the money and others were very optimistic and had the expectation that interesting and innovative projects would come out of the conference.

The evaluator had a very strong sense that the conference participants all wanted practical advice/tips/suggestions/strategies for supervision practices and they really responded to this whenever it was available (both in case-studies and workshops). The participants that she spoke to about this all said that they had got a lot out of attending, in terms of ideas and advice about supervision. Most said that they found it really useful to hear about other Schools' and individuals' experiences. In contrast, one person commented after the conference that he felt the participants were too experienced to want this sort of activity. One participant rejected a couple of speakers who had offered what he found to be abstract or theoretical content rather than real practice.

Another participant said she resented "being here on Saturday"; another agreed, but was very pleased that the Conference really needed two days for a discussion of the issues. His experience was that usually "things take longer than they need to, but this really was a two-day conference." A post-conference comment differed, suggesting that a day and a half would have been sufficient.

The evaluator's observation of the final plenary session where each Faculty outlined its plan suggested that it was extremely successful. Most participants did not seem to mind being at a working conference, and some felt that it was good to have that focus in the conference. It was obvious to any observer that each Faculty group had taken the task seriously and some very good ideas and plans were suggested.

In general, the evaluator was left with a strong sense of the success of the conference. Nearly all participants she spoke to had positive comments to make about their experience of the conference. The case-studies achieved their aim of generating discussion, the workshops were very well received and participants found hearing Schools' and individuals' experiences very worthwhile.

In terms of generating higher levels of awareness about supervision and supervision practices, many participants' comments confirmed that they had picked up useful ideas and strategies either to take back to their School in a formal way, or for themselves and their colleagues in a more informal way. The latter seemed to be more prevalent.

**FINAL REFLECTIONS ON THE CONFERENCE**
The conference was intended to help people identify local issues and to introduce some strategies for addressing them. The purpose of including case studies and workshops (in quite condensed versions) was to give participants a taste of activities they might find useful in their own schools. The conference committee expected participants to be experienced supervisors, coordinators of postgraduate programs, heads of school, deans or their nominees - people who did not need "developing" themselves but who would be able to

consider the case studies and workshops and other presentations and decide which would "work" with their colleagues. The evaluator's report was a bit of a surprise in that so many spoke of learning things they themselves would use.

The final session was, as someone commented after the conference, a bit of a free-for-all, and again there was a surprise in that a number of people kept returning to administrative and structural matters rather than the supervisor/ student relationships we considered the core concern of the program. The referrals of those matters to appropriate people seemed the most effective way of acknowledging that they were important but not the primary concern of the "Quality" initiative.

**WHAT NEXT?**

We wait anxiously to receive bids for funding to support local initiatives. And then we will wait anxiously to hear about successes and disappointments (lots more of the former, we hope). We will try through various means to keep people who are working on local activities in touch with each other and we will sponsor one or two central activities during the year. Then it will be time for another conference, probably only one day, at which people will report on their local projects and subsequently, we hope there will be a published account of those projects.

**ACKNOWLEDGMENTS**

Members of the conference planning committee were: Associate Professor Heather Greenfield, Food Science and Technology; Ms Sue Johnson, Learning Centre; Professor Adrian Lee, Microbiology and Immunology; Mr Doug Magin, Professional Development Centre; Associate Professor Tony Milne, Office of Postgraduate Studies; Associate Professor Peggy Nightingale, Professional Development Centre; Dr Ron Wakefield, Civil Engineering.

Guests at the conference were Dr Linda Conrad, Griffith University; Professor Martin Hayden, Southern Cross University; Ms Margaret Kiley, University of Adelaide; and Ms Margot Pearson, Australian National University. Their contributions were invaluable and their participation contributed to a sense of occasion.

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# Improving Information Systems to Evaluate Performance in Research Training

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## Executive Synopsis

The University of Adelaide was awarded a National Priority (Reserve) Fund Grant in early 1994 to develop an information system to measure and monitor performance in research training. A project coordinator was appointed in October 1994 and the project was completed in October 1995. As well as developing an ongoing information system a major objective of the project was to provide timely information to the Quality Audit team in the 1995 Quality Round. The preliminary report of the Quality Audit comments favourably on the information received from the system and the speed with which questions could be responded to.

Through the involvement of the full range of users: postgraduate coordinators, supervisors, departmental staff, central administration, students and academic staff support the project enabled all the appropriate and relevant data to be identified, stored, shared and processed into useful information by developing a Lotus Notes Information System which can hold and distribute information on research training to users across the four campuses of the University. At the end of the project users are able to share information relating to the progression rates of research students at the University as well as basic student information, scholarships, the Structured Program for Ph.D. students, the Integrated Bridging Program and several other smaller databases relating to grants, industry contacts and coursework degrees.

The next version of Lotus Notes - Notes 4.0 - due out early in 1996 will have significant upgrades including the ability to use the World Wide Web to distribute information and this could have many uses in the University.

Further development of the Notes system depends on the implementation of CASMAC as, for example, some functions of the Research Branch such as collection of publications data could be carried out by the Notes system if the CASMAC research module does not contain a publications index.

## Introduction

The Graduate Studies and Scholarships Branch of the University of Adelaide was awarded a National Priority (Reserve) Fund Grant in 1994 to:

> "develop an integrated management information system, to monitor and evaluate performance in research training".

This report sets out the strategy which was followed in implementing this project, the process of implementation, the results of the project and recommendations for the future.

## Objective & Goals

The following objective and goals were agreed at the third meeting of the steering committee on the 28th November 1994.

### *The Project Objective*

**A user friendly, comprehensive Management Information System for the Board of Graduate Studies to monitor and evaluate performance in research training which is available to selected staff in the Departments and Faculties to use on-line.**

### *The Goals*

1. Agree on the Objective and the Goals for the project.
2. Select Software Platform
3. Implement the following Systems on the selected Software Platform
   - Link the new system to the Student Information System
   - Transfer Scholarship FileMaker Pro Database to new system
   - Transfer ACUE File Maker Pro database to new system
   - Input Exit Surveys which are currently paper based to new system
   - Link new system to Post Graduate Progression system in SIS
   - Link new system to Structured program completion data held in SIS
   - Commence evaluation of the Structured Program using the new system to analyse and store responses
   - Input annual review data into the new system
   - Input data to assess the Integrated Bridging Program to the new system
   - Implement the Research Grants Database on this System
   - Input data to the new system from the evaluation of supervision
4. Set up pilot group of users in the departments and faculties
5. Open up to University wide access
6. Arrange training for the users of the system
7. Document the new system for the users.
8. The time table is agreed to be :-
   - Agree software platform by end of November
   - Set up initial databases and pilot group by end January
   - Have the system available to all departments by 1st April
   - Accumulate several months experience in the use of the system before the Quality Audit which is expected in July/August(?).
9. Use the system to prepare information for the Quality Audit in 1995 and to respond to queries during the Quality Audit.

## Strategy

### *Overview*

The strategy to be employed in the project was defined by the project coordinator, the Dean of Graduate Studies and the Registrar of Graduate Studies before being placed before the project steering committee for comment and approval.

The databases required for the system were defined first and then the attributes required by the software platform. The next step was software selection followed by hardware. Installation then took place in reverse order, hardware, software and finally applications.

With the diversity of the applications and the other goals set for the project it was decided to use the Goal Attainment Scaling (GAS) system to monitor the progress of the project.

The project budget was monitored on a monthly basis to track expenditure. Results were reported to the Dean of Graduate Studies and to the Steering Committee meetings.

### *Steering Committee*

A steering committee was established at the start of the project to advise on the strategy and implementation of the strategy. The membership of the committee is shown in Appendix One.

The committee met seven times through the project on 25th October 1994, 8th November 1994, 28th November 1994, 17th January 1995, 6th April 1995, 17th August 1995 and 21st November 1994 providing valuable advice on the project from a variety of perspectives.

### *Goal Attainment Scaling*

The progress of the project was monitored using Goal Attainment Scaling (GAS), which is described thus :

> "GAS was developed in the United States of America to evaluate and compare the effectiveness of different treatment programs for mental health (Kiresnk 1968).

Basically it comprises of:

- Identifying a realistic set of goals or objectives to be achieved by the program: and
- Establishing a scale of a graded series of likely outcomes ranging from least to most favourable.

When setting up the scale at least two points on each scale should have sufficiently precise and objective descriptions to enable an unfamiliar observer to determine whether or not the outcome lies above or below that point. These points are assigned numerical values of:

| | |
|---|---|
| -2 | for the least favourable outcome, most unsatisfactory goal attainment |
| -1 | for the least expected level of success, unsatisfactory goal attainment |
| 0 | for the expected level of success, satisfactory goal attainment |
| +1 | for the more than expected level of success, modest goal attainment |
| +2 | for the most favourable outcome, highest level of goal attainment" |

Fifteen elements were identified for inclusion in the GAS system. They were assigned weights which reflect their importance to the project. At the end of the project they achieved the following scores:

| | Element | Weight | Score |
|---|---|---|---|
| 1. | Agree Goals for the Project | 5 | 0 |
| 2. | Connect to the Main Student Information System (SIS) | 5 | 0 |
| 3. | Download Structured Program data from the SIS | 1 | 0 |
| 4. | Implement Postgraduate Progression System | 1 | 0 |
| 5. | Implement Exit Survey Notes Application | 1 | -1 |
| 6. | Implement Structured Program Evaluation (ACUE) | 1 | -1 |
| 7. | Implement Annual Review of Ph.D. Students in Notes | 1 | -2 |
| 8. | Implement Evaluation of Supervision | 1 | -2 |
| 9. | Implement ACUE course and attendance databases in Notes | 1 | 0 |
| 10. | Implement Scholarships Database in Notes | 1 | 0 |
| 11. | Implement Integrated Bridging Program Database in Notes | 1 | 0 |
| 12. | Deliver Training to users of the new Notes system | 1 | +1 |
| 13. | Prepare documentation for all systems | 1 | -1 |
| 14. | Have system available for the Quality Audit in 1995 | 10 | 0 |

This gave a final assessment of the project as a weighted GAS score of -6 averaged to an overall achievement of -0.4 or below satisfactory goal achievement due to little overachievement of goals - especially the heavily weighted ones - and making no progress with the implementation of the Annual Review system and the Evaluation of Supervision.

On reflection it is reasonably certain that we were very ambitious in setting goals for the project and that this affected the final GAS score for the project. The lack of progress in the evaluation of supervision is certainly not confined to the University of Adelaide. It is, however, a subject which must be addressed in the near future. The implementation of the collection of the annual review electronically requires a very widespread acceptance of Notes in the university, with multiple Notes licences in Departments and this has not been achieved in this project although most Departments and Faculty offices have at least one Notes client licence.

The GAS system provided a simple system to track a complex project with many elements and to provide to the project steering committee a composite view of the progress of the project. The following scores were achieved on the dates indicated during the project. A score of 50% or GAS 0 indicates satisfactory achievement of the project goals.

| **Date** | **Score %** | **Score GAS** |
|---|---|---|
| End of December 1994 | 0% | -2 |
| End of January 1995 | 0% | -2 |
| End of February 1995 | 9% | -1.63 |
| End of March 1995 | 11% | -1.56 |
| End of July 1995 | 27% | -0.90 |
| End of Project | 45% | -0.04 |

I would recommend the use of GAS as a reporting and assessment tool for projects.

### *CASMAC*

During 1988, the United Kingdom Government initiated a national project aimed at assisting U.K. Universities to replace their existing administrative computer systems by systems which were jointly developed. This became known as the MAC (Management and Administrative Computing) initiative.

A group of Australian University administrators became aware of this project and this led to a similar initiative for Australian Universities. A Steering Committee was formed in 1989 to oversee and direct a national approach. The Steering Committee was successful in obtaining funds from DEET to undertake a feasibility study to determine the extent to which a similar initiative would be appropriate in Australia. As a result of the feasibility study, it was agreed to proceed with the preparation of the CASMAC (Core Australian Specification for Management and Administrative Computing). The first version of these specifications was released in November 1991 and a revised version (2.1) was distributed in October 1992. The CASMAC project is proceeding according to the plan shown

| | Analysis Starts | Initial Spec. Accepted | Detailed Design Accepted | Software Delivered | Software Accepted |
|---|---|---|---|---|---|
| STUDENTS | 4 Oct 93 | 21 Jan 94 | 19 Jan 96 (I) | 10 May 96 (I) | 20 Sep 96 (I) |
| FINANCE | 20 Sept 93 | 26 Nov 93 | 30 Jun 94 | 14 Jul 95 | 20 Oct 95 |
| PHYS RES | 27 Sept 93 | 31 Dec 93 | 15 Aug 94 | 14 Aug 95 | 15 Dec 95 |
| HUMAN RES | 10 Jan 94 | 24 April 94 | 24 Feb 95 | 29 Sep 95 | 16 Feb 96 |
| RES & CONS | 6 Apr 94 | 13 Jul 94 | 3 Feb 95 | 19 May 95 | 1 Sep 95 |

It was initially intended that the project be CASMAC compliant however it quickly became apparent that due to delays in the implementation of the CASMAC Student Module the preferable course of action would be to implement the new system independently of CASMAC and then to arrange to uplift any information into CASMAC as a one off transfer when the CASMAC Student Module is eventually brought on line. As far as possible systems have been developed with this eventual transfer in mind.

This approach was endorsed by the Steering Committee and University management.

### *Budget*

The final project budget was developed in late 1994 after the decision to use Lotus Notes was taken by the Steering Committee. A review of Lotus Notes is included below in the software section.

Throughout the project expenditure as shown on the University Financial system has been reconciled with orders and reported to the Dean of Graduate Studies and to the Steering Committee.

Expenditure has been monitored using a Notes database to allocate expenses to various allocations. The final breakdown of expenses is approximately one third salaries, one third hardware and one third Notes Licences and miscellaneous expenses. A more detailed breakdown is shown in Appendix Six

## Implementation

### *Overview*

The implementation of the strategy fell into several identifiable sections, Analysis, Software Selection, Hardware Selection and purchase, pilot group, application development, final installation and training.

In the analysis phase the requirements of the project were discussed and the data required was identified. The software selection phase identified the necessary attributes of the software and then moved on to identify software systems which had those attributes. After software selection the hardware required was identified, purchased and installed by the University Information Technology Division (ITD). Lotus Notes software was then installed on the server and for the pilot group of users

by Ferntree Computer Systems and ITD. Application development then commenced together with training for the pilot group. Finally the Lotus Notes system was offered to each department and Faculty office with a free one day training course comprising two sessions, “Introduction to Lotus Notes” and “Lotus Notes Database Development”.

At then end of the project 85 users were registered on the Notes System and the system was developing quickly with other uses being found by the users in sharing information, developing workflow applications where information is passed from one user to another in an organised fashion and using the system to replace manual computations. The security of the Notes environment was appreciated by many users who wished to hold confidential information on the system and open access to a small well defined group.

## *Analysis*

In this phase the data requirements of the project to develop an integrated management information system were identified. The majority of this work was undertaken by the Dean of Graduate Studies, the Director of the ACUE and the project coordinator. The final datasets required for the project were identified to be :-

1. Basic Postgraduate Student Information from the University UNIMIS system.
2. Exit Survey Data
3. Structured Program Completion
4. Structured Program Evaluation
5. Annual Review of Students
6. Evaluation of Supervision
7. Scholarships
8. Integrated Bridging Program
9. ACUE Course and Attendance Record.

The information required from the system was also identified as :

1. The ability to respond to ad hoc questions immediately.
2. Postgraduate progression data to be available as elapsed time of candidature and full time equivalent.

## *Software*

The software was required to have the following attributes :

1. The ability to hold the identified Datasets
2. The ability to process the raw student data to produce the Postgraduate Progression System
3. The ability to respond to ad hoc queries quickly and accurately.
4. The ability to integrate data from the datasets to provide new information such as combining the scholarships and student data to look at progression rates of scholarship holders.
5. The ability to distribute the Information to the Departments and Faculties
6. The ability to collect data from Departments and Faculties.
7. A good level of security as the system would contain confidential information.
8. Cross Platform Capability as the University has a mix of Macintosh and PC machines.
9. The ability to use University network as it existed.
10. The ability to provide useful information to the 1995 Quality Audit.
11. Available off the shelf as “shrink wrapped” software.
12. The availability of external assistance to develop applications.
13. The availability of external engineers to maintain the software system

The only software system which met all these requirements was Lotus Notes.

Approval from the University Information Technology Division (ITD) was sought to set up a Lotus Notes system on the university network. The proposed system comprised one Notes server together with Notes software and a pilot group of 12 to 15 users which would expand to about 80 users by the end of the project. The Notes distributor - Ferntree Computers - strongly suggested that the server be installed using OS-2 as the operating system as this was the most stable of the server platforms.

However to take advantage of ITD's expertise with Novel Netware it was finally agreed that the Notes system would be implemented on an NLM server.

## Lotus Notes

Lotus Notes is generally considered to be the leading software package in a class of software known as "Groupware". It is used extensively by large organisations to perform a wide variety of tasks such as holding information locally for Notes users to access; replicating large databases to geographically dispersed sites - even worldwide; moving forms around an organisation in an electronic mirror of paper based work practices and providing users with tools to interrogate databases to provide useful information in a timely fashion.

A Notes system comprises at least one Notes server and Notes clients which access that server. As the system expends the number of servers is increased to cope with the load and the Notes system is used to replicate databases between the servers so that all users effectively see the same data. The replication process is controlled by the Notes administrator.

In any Notes system a Notes administrator is appointed to manage the Notes system and to ensure it is working correctly and available for Notes users. Each Notes database or application requires a database manager who is responsible for the integrity of the database, updating the data and allowing access to the database.

Access to Notes system is controlled by the Notes administrator who registers users onto the Notes system. Access to individual databases is then in the hands of the various database managers who control the access control list for each database and can assign one of seven levels of access to a user from "No Access" to "Manager".

Data held in the Notes system is accessed by designing "views" of the database to display subsets of the fields and documents in the database. This "view" can then be exported to a spreadsheet and displayed graphically as is shown in appendix eight.

## *Hardware*

When the decision was taken to implement a Notes system two hardware issues became apparent :

1. The project would have to purchase a new server as it is strongly recommended that Notes runs on its own server.
2. There would have to be some upgrading of desktop computers as Notes being a "current generation" of software requires reasonably modern hardware to perform adequately. In fact most other office software has this requirement.

The Notes server was purchased through the ITD ACER dealership and installed by ITD in late January 1995. Ferntree Computer Systems installed the Notes server software soon after and were contracted to supply 60 hours of consulting time for server software maintenance and application development. ITD were contracted to provide maintenance support for the Notes server hardware at a cost of $4,000 per annum.

It proved impossible to integrate the tape backup system with the server supplied and ACER supplied a new Pentium server to replace the 486 unit in November 1995.

The upgrade of desktop systems continued for most of the project as the system expanded to users with older machines.

## *Application Development*

Application development commenced as soon as the server was installed and continued to the end of the project. Development was contracted first to Ferntree Computer Systems and then to Protech Australia when the analyst involved changed companies. Some systems were developed by the project coordinator.

## Notes Student Information System

The Notes Student Information System was one of the first systems developed as access to basic student information was considered crucial to the success of the project. Initial conceptual development was carried out by Ferntree with final development by the project coordinator. The system contains details of about 4,685 students who have been or are entered on the main student information system as enrolled in research degrees, Ph.D. or Masters.

The Notes Student Information System is recreated four times per week to ensure up-to-date information is available. The system copies data from the main student information system (SIS) via the Management Information System File Server as 22 text files to a PC in the Graduate Studies Branch. The text files are then converted to Notes databases using the Zmerge software package from Granite Software and the Notes Student Information System is then created from these databases. All 23 Notes databases are then copied to the Notes server. The process is started manually usually at about 17.00 and runs for approximately 3.5 hours.

To ensure easy recovery from a failure of the data download the old Notes Student Information System files are backed up on the Notes server for one day. Backups are also taken nightly using the tape backup system. The normal university backup system of running a14 day loop of backup tapes where backup tapes are reused after 14 days was modified for the Notes server to allow for disaster recovery up to 10 weeks by removing one tape from the backup loop each Friday and replacing it with the tape recorded 10 weeks ago.

The Notes Student Information System is text searchable, for example by name or student number, and can also be logically searched eg for students enrolled in a particular department with a particular supervisor. The main search power in Notes is the ability to design “views” of the database which can be saved as part of the database and are available permanently showing a subset of the documents in the database organised in a particular way. For example it is possible to set up a view showing only Ph.D. students who have completed their degrees organised by Faculty, Department and Supervisor. Designing new “Views” is a quick and easy way to respond to ad hoc queries.

## Postgraduate Progression System

The Postgraduate Progression System is used to develop progression data on all research students. The system creates a basic student database which includes personal and course details. The system then computes the total time spent by each student in all the possible attendance statuses, Full Time, Part Time etc. These times are then summed to give an Elapsed Time for the candidature from candidature date to completion date or withdrawal date. If the student is still enrolled the elapsed time is computed to the date of creation of the database. A Full Time Equivalent Time is also computed for the candidature from candidature date to submission date less any intermissions or suspensions and with Part/Half time periods being converted to a Full Time Equivalent Time by dividing by 2.

The main use of this system is to research the progression rates of cohorts of students eg by Faculty, Department, cohort year or Supervisor.

There are some limitations to this system. The main Student Information System history file for students enrolled prior to 1st January 1985 is incomplete and therefore no accurate times can be calculated for these students. These students are therefore excluded from most “Views” of the database.

As for the Notes Student Information System the Progression System can be used to show many “Views” of the database to respond to ad hoc questions and to research current issues such as the variation in Ph.D. enrolment in any faculty by gender over time and the variation in progression rates, withdrawal rates etc. An example of the output of such a query is shown in appendix eight.

## Exit Survey

The Exit Survey is a continuing survey of the completing/withdrawing Ph.D. students which is collected by the Graduate Studies Branch. The survey covers areas such as university facilities, supervision, selection of research topic, intellectual property, grievances, peer attitudes and equity issues. Prior to this project this data was held only on paper forms.

The exit survey was the first completed application in the Notes system and data has been added to the system since January 1995. There are currently 311 survey forms entered onto the database.

"Views" of the database can be developed to research areas of interest such as the effectiveness of grievance procedures, the rating of university facilities, supervision, intellectual property policy and the variation of these by gender, faculty, department, age etc.

## ACUE Databases

The Advisory Centre for University Education (ACUE) has had a major involvement in this project from the initial formulation of the grant application through membership of the steering committee, use of the system for ACUE applications and analysis of data from the Exit Survey and Structured Program.

The two major applications used by the ACUE are the Course database and the Student Attendance database. The Course database lists details of all the courses developed and presented by the ACUE. This database holds details of courses for 1994 and 1995. It is expected that the database will be extended to include courses for previous years as well as subsequent years.

The Participant database contains details of all the staff and students who have attended ACUE courses in 1994 and 1995. Student/staff interests are also now being recorded to enable production of mailing lists to notify interested students/staff of future courses.

## Scholarships

The scholarships application was the final major system to be developed in the project. The Scholarships branch has been using FileMaker Pro for the Macintosh to hold their databases and it was decided early in the project that data on scholarships was required to enable progression information to be developed for scholarship and non-scholarship holders and to progress the shift to one application for database management in Graduate Studies and Scholarships Branch.

The design of the application was contracted to Protech Australia using some of a fifty hour block of service time purchased in March 1995.

The final acceptance of the application took place in early November after much modification by the project coordinator at the request of the Scholarships Section. Data entry began immediately to meet the deadline for the scholarships meeting in early December.

## Structured Program

The Structured Program analysis formed a fundamental part of the project and the ACUE was contracted to develop a methodology to analyse the effect of the implementation of the structured program. The data collected during the analysis is held in Notes Databases and is available for analysis by both the Graduate Studies Branch and the ACUE.

A summary of the findings of the Structured Program evaluation is given in Appendix Seven.

The rationale behind the Structured Program can be seen on the World Wide Web at :

http://www-etu.itd.adelaide.edu.au/ACUE/SP/Sp_home.html

A copy of the Web Structured Program page is included as Appendix Eight

## Integrated Bridging Program for International Postgraduate Students

The Integrated Bridging Program (IBP) is designed to support acquisition and enhancement of the language-based academic skills required by students from language and cultural backgrounds beyond Australia to undertake postgraduate study at the University of Adelaide. It is provided by staff of the Language and Learning Service of the ACUE, in collaboration with supervisors of research students and coordinators of postgraduate courses. It is normally part of the first full semester after enrolment for international students; requests for variation to this arrangement can be directed to the IBP Co-ordinator. Where international students participate in a Structured Program as part of their postgraduate studies, the IBP forms part of its directed studies component.

For research students, the IBP curriculum centres on the production of a limited-scope research proposal and the presentation of a seminar to justify the proposal; supervisors are invited to provide feedback on technical aspects of the work at all stages. For coursework students the IBP concentrates

on the language and learning skills that will be called upon in the course, as identified through discussion with course coordinators and lecturers. For both types of group, teaching materials are produced through analysis of sample documents from the discipline, provided by the content specialists. Individual student consultations are also part of the program.

The Lotus Notes Information System holds information on Integrated Bridging Program courses, instructors and attendance at the courses.

## Industry Liaison Client Contact

The Office of Industry Liaison which is based at the Thebarton Campus of the University of Adelaide uses the Notes system to hold information on two aspects of their operations.

One application holds details of industry contacts made by the university and can be used to track communications with each industry contact. It is also available to Luminis Pty Ltd the University's venture development company.

The second application is a design copy of the first with a few modifications and records similar information on the Cooperative Education for Enterprise Development (CEED) contacts.

## International Student Application Tracking

This application was developed in the Graduate Studies Branch by Julie Meridew with some assistance from the project coordinator. It is good example of the simplicity of Notes application development as Julie created this application before she attended a formal training course on application development.

This system is also an example of a workflow application in that information is accessed by two geographically remote offices to forward information to each other.

The system contains details of international applications for candidature in Ph.D. degrees and Masters by research and allows tracking of the progress of applications from the Graduate Studies office to Faculty and Department offices and back.

It is hoped to expand this system to included Australian and New Zealand applications in the near future.

## Environmental Research Database

This database was developed by the Botany Department in 1995 and published in paper form by the University. The database was translated into Notes by the project coordinator and is available to all users of the Notes system.

Database managers of this system had not been appointed at *the completion of the project.*

## *Installation*

With the major applications developed, the installation process commenced in July with planning for two seminars to publicise the Notes system to be held on the North Terrace campus and the Waite campus. These seminars were held on the 14th and 18th August.

Applications from departments and faculty offices not involved in the pilot group were requested in July for access to the Notes system. Sixty five applications were received and by the end of the project 47 had been installed. At the end of the project three applicants in the faculty of engineering were waiting for compatibility issues to be resolved and 15 were unable to be installed due to inadequate hardware, lack of network connections and imminent changes to desktop machines.

At the end of the project 30 Notes licences and 51 Notes desktop licences were installed with 18 applications outstanding for the reasons stated.

Once installed there have been few problems with access to the Notes system from users on the North Terrace or remote campuses.

Major problems encountered with the roll out was the lack of MAC TCP on older machines and the non-standard set up of PC's. Usually PC's purchased via the ITD ACER dealership worked well.

### *Training*

Two series of training courses for Notes users were arranged at a cost of $9,408.

The pilot group attended two one day courses at Ferntree Computer Systems in February 1995. It was generally felt that the first course was very low level and the second was modified to give more in-depth information.

Due to the high cost of outside training and the perceived lack of relevance to the university systems it was decided to run the second series of courses in the university ITD training centre. This series of courses ran from early August to early October at the rate of one per week. The course consisted of a one day hands on use of Notes coupled with demonstrations of The Notes Student Information System and Postgraduate Progression System. The course was developed by the project coordinator together with the Protech Australia developer, Mike Fry.

A total of 69 staff booked for the one day course held on campus which together with the 12 who attended the courses at Ferntree gives a training rate of 96% of total users.

## Result

### *Users*

The Lotus Notes system at the University of Adelaide has 85 registered users who are using the system for a variety of applications. The system has enabled the easy exchange of information between the Graduate Studies office in central administration and the departments and faculties as well as enhancing the exchange of information within the Graduate Studies office itself. This exchange has been especially noteworthy between the Faculty of Agriculture and Natural Resource Science and Graduate Studies where the flow of applications for admission to higher degrees is now monitored by two Notes applications. The users have found the saving in time to be significant as information is accessed directly without the inconvenience of phone calls.

Within the Graduate Studies Office the new Notes Student Information System allows easy access to the majority of frequently used information and has been enhanced to allow computation of new candidature expiry dates as students modify their candidature. The Notes system has also been developed to hold file notes for particular students so that limited numbers of staff can access them and have access to up to date information even when the paper file is not in the Graduate Studies office. The enthusiasm which the officers in the Graduate Studies office have shown for Notes has been outstanding and it is expected that the system will develop over time to enable more “group work” by sharing information via Notes.

The Scholarships section is now using Notes exclusively for the 1996 scholarship round and anticipate moving the legacy databases to Notes in the near future. When this has been completed it will be possible to monitor the progression rates of scholarship holders in the Notes system.

### *System Overview*

The Notes information system at the University of Adelaide is based on one server, a Pentium 75, with two gigabytes of hard disk space.

Eighty four clients were registered on the system at the end of the project. Thirty of these had a full Notes licence and 54 a Notes Desktop licence. Notes Desktop allows use of all Notes facilities except the design facility and is a useful way to deploy Notes to users who only wish to access databases/applications.

System maintenance is available at three levels. ITD has been contracted to maintain the hardware and Netware of the server and maintains the University network as a matter of course. The maintenance of the Notes software will be contracted out to a commercial organisation and the maintenance of the Notes databases is in the hands of the individual database managers who can either maintain the databases within their section or contract out the maintenance.

The Notes Administrator position is based in Graduate Studies and Scholarships Branch.

## Comments

The Notes system has been operating at the University of Adelaide for nearly ten months now. Since start up the server has required a new hard disk and a new set of memory chips. It has also not been able to function correctly with the tape backup unit purchased specifically for it. To overcome some of these reliability problems ITD has recently installed a new server based on a Pentium 75 MHz processor to replace the original 486 66 MHz based unit at no cost to the University. Time will tell if the new system is more reliable than the old.

Graduate Studies and Scholarships Branch use Notes for communication to the Faculty offices, holding major databases and keeping file notes which are available to others in the office.

The Notes system is not yet fully utilised as 75% of the disk space on the server is free and the number of concurrent users is well below the maximum of 35 to 50.

Future expansion of the system depends on the implementation of CASMAC and the recognition of how Notes can assist the University in its day to day operations by enabling the easy flow of information between the different areas of the University.

## Acknowledgments

The project coordinator would like to thank the following people who assisted with the project

| | |
|---|---|
| Dr David Liljegren | Dean of Graduate Studies |
| Esther Tobin | Registrar of Graduate Studies |
| Dr Gerry Mullins | Acting Director, ACUE |
| Margaret Kiley | Lecturer, ACUE |
| | |
| Peter Nissen | Director ITD, University of Adelaide |
| Mike Byrne | Manager Microcomputer Section, ITD |
| Christian Legg | ITD |
| Lazlo Perger | ITD |
| Andy Cheel | ITD |
| | |
| Michael Fry | Protech Australia |
| Peter Cornish | Ferntree Computer Systems |

# Appendices

## *Appendix One : Steering Committee*

| Name | Position | Department |
|---|---|---|
| Dr David Liljegren | Dean | Graduate Studies and Scholarships Branch |
| Mrs Esther Tobin | Registrar | Graduate Studies and Scholarships Branch |
| Dr Gerry Mullins | Director | Advisory Centre for University Education |
| Mr Deepak Bista and Mr Scott Dullaway | President | Postgraduate Students Association |
| Mrs Robyn Raymond | Acting Registrar | Scholarships |
| Mrs Kerry Jaeger | Registrar | Scholarships |
| Mr Alan Wolf | Manager | Student Records |
| Dr Barry Dolman | Head | Information Systems Branch |
| Mr Jay Jayatilaka | Deputy Director | International Programs Branch |
| Mrs Heather Howard | Director | Quality Office |
| Ms Margaret Kiley | Lecturer | Advisory Centre for University Education |
| Professor Douglas McEachern | Professor | Politics |
| Mr Mike Byrne | Manager | Microcomputer Section |
| Mr Keith Potts | Project Coordinator | Graduate Studies and Scholarships Branch |

## *Appendix Two : Lotus Notes Student Information System*

The Lotus Notes Student Information System (LN SIS) contains information about Postgraduate Students undertaking Research Degrees at Masters or Ph.D. level.

**The information contained in this system is confidential and you are required to treat is as such.**

The LN SIS is created daily using data derived from the main Student Information System, downloaded via the MIS File Server to a PC located in Graduate Studies, processed into a Lotus Notes Database format using ZMerge and then uploaded to the Notes Server.

The database is Full Text Indexed so that text searches can be made using Student Number, name etc. More specific searches can also be undertaken - for example it is possible to search for currently enrolled students, by supervisor name and enrolment year.

The Notes system uses fields, forms, documents and views to contain the data in a database. A field such as "stud_num" contains the student number whilst another field contains Candidature Date "stud_hdr_cand_date". These fields are placed on form(s) which in the case of the LN SIS is called "All Fields" as it contains all the fields in the database and is therefore the only form in the database. When the form is "composed" in Notes terminology so that one or more fields contain data it becomes a document which can be displayed in a view. Views are developed to provide a subset of the information in the LN SIS or to sort the full database into categories. Developing new views is one of the main uses of the system as it can quickly respond to questions such as "How many Ph.D. students enrolled in Crop Protection in 1993 and how many have withdrawn or completed?"

About 90 fields are included in the Notes Student Information System.

## *Appendix Three : Lotus Notes Postgraduate Progression System*

### Synopsis

The postgraduate progression system takes data from the student information system files downloaded via the MIS file server, combining the attendance history data with the current status file and other data from the demographic information file and University information to form the Post Graduate Student Progression System.

The system includes information for all postgraduate students who are listed in the SIS. However due to data deficiencies in the history file for candidates with candidature dates prior to 1st Jan 1985 the views of the data have been developed only for students with candidature dates after 1st Jan 1985. The system focuses on views of the data in aggregate rather than on individual progression.

### Data

The data in the SIS includes all students with current enrolments at 1st January 1985. The history file of attendance status commences on the 1st January 1985 therefore the attendance history for students enrolled before the 1st Jan 1985 is not recorded and any attempt to use this data will result in significant errors.

For students with candidature dates post 1st January 1985 there are some anomalies which result from the student enrolling in the same course twice. As the history file does not carry the candidature date there is no way of easily separating the two candidatures.

The data in this system is not volatile the system will be updated manually by the database manager when required.

### Form

The default form which appears when an individual document is opened is arranged in four areas

| | |
|---|---|
| The basic data | - appears first as a table and includes data from the history file.<br>- this area also holds the computed history as time periods |
| The Attendance data | - This area holds the total time spent on each attendance status. |
| The Check | - This area computes the checks - if the first two fields are not equal the data is suspect.<br>- This area also holds the full time equivalent computed field computed by multiplying<br>the full time and split program full time periods by 1<br>the Half, Part, External and split program part time periods by 0.5<br>and adding them together |
| Demographic Data | - This area holds the demographic data to enable the database to be sorted in different ways. |

### Views

The views have been developed taking into account the data anomalies discussed above. The default view is the "All Original Fields" view which includes all the students in the database and only the fields pulled in from the basic student data file. Views have been developed for Ph.D. students by cohort year, Faculty, Department and Gender.

### Access

The database manager for this system is The Registrar of Graduate Studies who can give access at higher levels than the default which is currently set at "No Access"

## *Appendix Four : Expenditure by Allocation*

| # | Account | Expense |
|---|---|---|
| 1 | Accommodation | $254.80 |
| 2 | ACUE Consulting | $18,465.00 |
| 3 | Advertising | $969.00 |
| 4 | Consultant | $14,880.00 |
| 5 | Contingency | $772.44 |
| 6 | Hardware | $51,681.00 |
| 7 | ITD | $6,200.00 |
| 8 | Office | $417.00 |
| 9 | Petty Cash | $52.20 |
| 10 | Photocopying | $30.00 |
| 11 | Salaries | $51,378.29 |
| 12 | Software | $11,917.27 |
| 13 | Training | $9,408.00 |
| 14 | Travel | $575.00 |
| 15 | Total | $167,000.00 |

## *Appendix Five : Structured Program Evaluation*

Evaluation of the Structured Program for PhD Students

In 1993 the University of Adelaide determined that all students enrolling in a PhD from 1994 would undertake a Structured Program of activities which would provide them with the skills and knowledge necessary to efficiently and effectively undertake PhD research. Based on the further development of existing programs within departments and faculties the aim of the Program was to induct students into research and into their discipline in a structured manner.

At the request of the Dean of Graduate Studies, an evaluation of the implementation of the *Structured Program of Activities for PhD Students* was conducted in Semester 1, 1995. This was done in the knowledge that not all Departments had fully instituted the Program during 1994 and that some development remained to be done. The survey was seen as a benchmark against which to evaluate the success of a two year development program, funded from Quality Audit sources, during 1995/6. Questionnaires were sent in May 1995 to all PhD students who commenced their candidature in 1994 and to one supervisor per student. There was no attempt to match the students and supervisors. The survey forms included a Likert-style rating of 1-5 as well as space to comment. Approximately 50% of respondents commented on one or more questions. The supervisor questionnaire addressed some questions to those supervisors who were also Postgraduate Coordinators (20 of those who responded). All responses were entered into a Lotus Notes data base. The data were analysed using Lotus Notes and, following export, were analysed using Statistics Program for the Social Sciences (SPSS). Response rates for the return of useable survey forms were 55.5% for the student questionnaire and 42% for staff.

Of the 120 students who responded, 87.5% reported that they had taken part in a Structured Program. Students were asked to rate their level of preparation to undertake research at the time of the questionnaire. On a scale of 5 = Excellent, 3 = Adequate and 1 = Very Poor, ratings broken down by Faculties ranged from 3.4 to 4.2 for students who had taken part in a Structured Program. For the faculties of ANRS, Engineering, Mathematics and Computing Science and Science, students who had taken part in a Structured Program rated their preparation for research higher than those who had not taken part. Students in Medicine who had taken part in a Program rated themselves the same as those who had not taken part. In most cases supervisors rated their students' level of preparation slightly higher than did the students themselves.

Students and supervisors rated meetings with supervisors very highly in terms of helpfulness with 65.8% within the 'very helpful' range whereas meetings with Postgraduate Coordinators were only rated between 3.0 and 4.0 with a mean of 3.1. The formal presentation of the research proposal was rated highly for helpfulness (3.5 - 5.0) with a mean of 4.0 but attendance at Departmental seminars ranged between 3.0 - 3.4 (other than in "Other Faculties") with a mean of 3.2.

For students participating in the Directed Studies component of the Program the ratings were generally high, 4.5 - 5.0, (other than for Science) with an overall mean of 4.2.

The ratings given for the overall usefulness of the Structured Program reported by students had a mean of 3.2 and ratings by supervisors ranged from 3.0 - 4.0 (other than for Medicine) with an overall mean of 3.5.

Although there were some negative comments received about the Program, on the whole they were considerably outweighed by more positive comments. However, when asked what additional topics might be included in the Program the majority of the responses suggested that there was no need for additional topics, but rather a better presentation and/or organisation of existing topics.

The evaluation will be replicated in 1996 when it is anticipated that the Structured Program will be more established within Departments and Faculties.

## *Appendix Six : Structured Program*

Background Information

In 1993 the Board of Graduate Studies of the University of Adelaide developed a policy whereby each PhD student is required to undertake a Structured Program of activities to assist with their research.

The Board provided a general set of Guidelines to departments and faculties. Departments were encouraged to develop Programs which best suited their situation and the needs of their PhD students.

The Program requires departments to ensure that all PhD students have the necessary knowledge and skills to adequately complete their research program within a reasonable time. Various issues which can be considered when developing a Structured Program are listed in the document Structured Program Considerations.

While many students will already have much of the knowledge and skills from their Honours or other postgraduate study, some students require more formal assistance.

The Structured Program culminates with each student presenting a seminar to the department which outlines the proposed research. Then following comment from members of the department, the Outline of Proposed Research is completed and submitted to the department, and the Graduate Studies Office.

Different departments are evolving different models for their Programs. The examples are provided as a means of sharing and seeking comment to enable continual improvement.

The main models to date are:

- a series of regular seminars on defined topics
- enrolment in existing research methodology and technical courses
- individualised Programs for each student
- faculty-wide guidelines or Programs
- a combination of components

## *Appendix Seven : Exit Survey Analysis*

Analysis of Postgraduate Exit Survey 1993-94

(Draft Summary)

by Eugene Hejka
Advisory Centre for University Education

The survey was administered in hard copy to all students completing, or withdrawing from, postgraduate study (i.e. PhD, or Masters by dissertation or coursework) in 1993 and 1994. The responses were entered into a Lotus Notes data base, and the data was then exported into a text file and analysed using SPSSX.

The survey was completed by 247 students. In terms of the student profile, the majority of respondents were male, full-time, local students, with a median age of 30 years, studying for their PhD, and with English as their first language. The mean candidature duration for PhD students was four years and five months, while for Masters students it was three years and four months.

A considerable proportion of students required an extension to their candidature. The four main reasons for the extension were: to complete the write-up; to complete the research; because of employment commitments; because of delays in fieldwork and experiments.

Only 13% of the respondents had withdrawn from their course of study. The four main reasons for doing so were: a change of department or university or address; family or personal reasons; employment commitments; change in career direction.

The students were asked to rate departmental/University facilities on a 5-point scale, with 1 being "very poor" and 5 being "very good". Each of the five listed facilities, relating to study environment, administration, equipment, funding and library, had mean ratings between 3 and 4 (i.e. between "satisfactory" and "good").

Students were asked to indicate the source of any information, and the adequacy of the information, that they had received concerning a number of administrative issues relating to the course, their supervisor and funding. Generally, all of the nine issues listed were rated as being higher than "satisfactory", but less than "good".

Effectiveness of supervision had an overall mean rating just short of being "good". There were no statistical differences between ratings broken down by type of course (PhD vs. Masters), type of candidature (full time vs. part-time) and nationality (domestic vs. international). Only a small proportion of students reported that they ever felt embarrassed, intimidated, threatened or hostile in meetings with their supervisor (where these feelings could be directly related to the students' sex, race, sexuality and/or disability). The types of problems reported related to the supervisor's personality, willingness to help, sexism or racism.

Just under one-fifth of all students indicated that their studies had been affected by financial concerns. This proportion was slightly higher for females, for those students in the older (i.e. "31 and over") age category, for those students studying in a full-time/part-time combination, and for those withdrawing from their course of study.

When asked if they felt the need for a more structured level of information about how to conduct research, about half of all respondents indicated that this should be provided. When broken down by nationality, it was evident that a greater proportion of international students felt the need for more structured information compared to domestic students.

In terms of roles in selection of research topic, a smaller proportion of females, compared to males, selected their topic in close consultation with their supervisors, while a greater proportion of females had their topic chosen by their supervisor alone. Older students were more likely to choose the topic themselves rather than having is chosen by their supervisor. While younger students were more likely to have their topics chosen by their supervisors. Regardless of method of choice, the majority of students rated their choice of topic as being "good" or "very good", with older students rating their

topics higher than younger students. In terms of inter-faculty comparisons, students from the faculties of Arts and Science rated their choice of topics higher than the Faculty of Agricultural & Natural Resource Sciences.

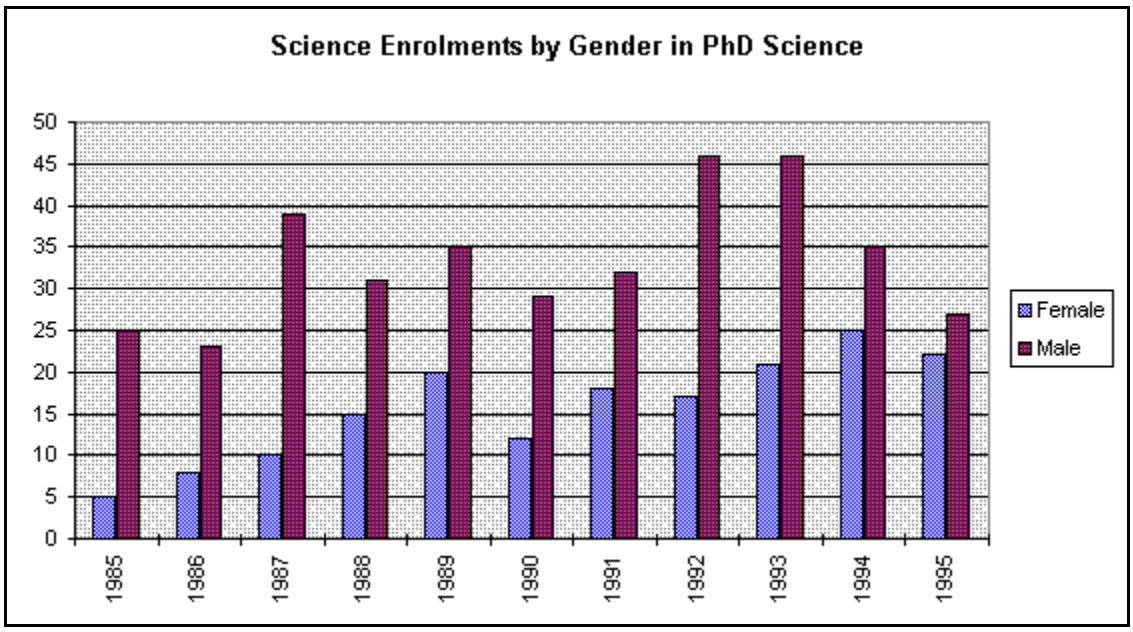
As many as two-fifths of respondents reported limitations in carrying out their research, with a significantly greater proportion of females doing so than males. The five main limitations were: equipment & technical problems; lack of information & resources; insufficient funding; insufficient time; limited facilities.

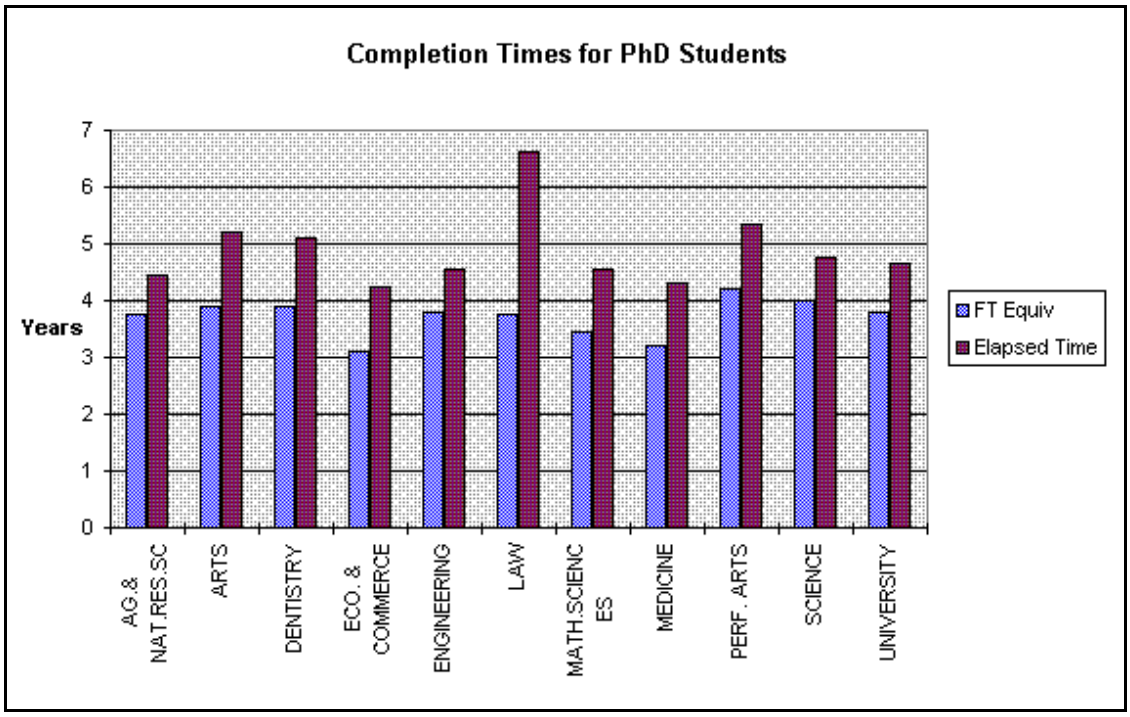
More than half of the students published papers during their candidature. As could be expected, a significantly greater proportion of PhD students did so than Masters students. In terms of sex, a higher proportion of males published compared to females. Interestingly, these differences were reflected in the amount of encouragement to publish given by their supervisors.

Only 14% of students indicated that they had experienced grounds for grievance in relation to their study. However, less than one-third of these initiated grievance proceedings. Factors which prevented students from undertaking grievance proceedings included: concerns about recrimination by the supervisor; lack of knowledge of grievance procedures; lack of confidence in the grievance procedures; concerns of interference with studies.

Further development of the Exit Survey is planned. This will involve a revision of the structure of the questions being asked, and in the types of responses required from the students. The latter changes will result in a simpler coding procedure in Lotus Notes, thereby requiring less effort on the part of the survey administrators in analysing the results. Lotus Notes will still be used for progressive rudimentary analyses of frequencies and cross-tabulations, with a more detailed statistical analysis carried out annually using SPSSX.

## *Appendix Eight : Graphical Output from Notes*



# POSTGRADUATE RESEARCH: STUDENT AND SUPERVISOR VIEWS

Alan Russell

The Flinders University of South Australia

***Please note that the graphics have been edited out of this paper in order to fit it onto the Proceedings Disk. A full copy of the paper is available from the Author.***

The project reported here was supported by a Quality Funds grant from The Flinders University of South Australia. Petra Lietz, Peter Ninnes, Rosaline Okosun, and Sarah Hopkins assisted with the development of the instruments used, and collected the data. Coding, data analysis, and preparation of results, were undertaken by Petra Lietz and Sarah Hopkins. The substantial time and energy of the students and supervisors who participated in the research is gratefully acknowledged. A full copy of the project report is available from Alan Russell, School of Education, Flinders University, GPO Box 2100 Adelaide, 5001.

Australian universities have shown an increasing concern with the nature and quality of the programs that they offer to postgraduate research students. This has been driven partly by problems with retention and completion rates (Barrett & Magin, 1983; Department of Employment, Education and Training, 1988; Whittle, 1991, 1993). However, it has also been associated with wider issues, such as a questioning of the goals or purposes of these programs, and an interest in the administrative structures and cultures that most appropriately provide an environment for the undertaking of a research degree (Cullen, Pearson, Saha, & Spear, 1994; Whittle, 1992, 1993; 1994 b).

By far the most attention has been directed to questions about supervision, for example the quality of supervision, differences in supervisory practices, according to the Faculty or type of research, and the nature of the student-supervisor relationship (Cullen et al., 1994; Moses, 1984; Parry & Hayden, 1994; Potts, 1994; Powles, 1988a,b; van der Heide, 1994). These investigations usually have been aimed at improving the quality of supervision, and therefore, retention and completion rates and the quality of the research undertaken.

The examination of supervision has the potential to make an important contribution to the quality of postgraduate research. Nevertheless, supervision is only one of the factors that contribute to quality in postgraduate research. As a consequence, attention in the present project was directed to a wider range of research students' experience than just supervision. In this way, an effort was made to assess a variety of factors contributing to quality in postgraduate research. A second feature of the project was that it assessed both student and supervisor views on aspects of postgraduate research and supervision. It was assumed that

quality in postgraduate research is enhanced when there is a reasonable match between students and supervisors about matters such as supervision, the work students should be undertaking, and the characteristics of the thesis that the student should be aiming to produce. On the other hand, if there is a mismatch between the views of students and supervisors, this has implications for the improvement of quality.

**Student and supervisor views were examined on the following:**

- **… the tasks involved in a higher degree by research,**
- **… the strategies used in undertaking the tasks,**
- **… the qualities of a good thesis,**
- **… examiner's criteria for assessing research theses,**
- **… the constraints encountered by students, and**
- **… the contribution of the supervisor.**

**Method**

The study was undertaken in the Faculty of Education, Humanities, Law and Theology at The Flinders University of South Australia during the second semester of 1994 and first semester of 1995. A sample of students enrolled in a higher degree by research, as well as staff members responsible for supervising research degree students were involved in the study. Students were asked to keep a detailed diary of their research related activity, and both staff and students participated in an in-depth interview. Separate interview schedules, were developed to guide student and supervisor interviews. These were designed to be both comprehensive and in-depth in relation to the work of research students. All interviews were conducted under conditions of complete anonymity

The student diary was designed to obtain information on the tasks on which students were currently working, the strategies, skills, and knowledge that were relevant to the tasks, how students had acquired the necessary skills, and the constraints which they encountered. Full-time students kept the diary over one week and part-time students over two weeks. Students' diary notes were then, depending on their usefulness and clarity, discussed further during the interviews or used as responses to specific questions in the interview schedule. The details of what students were asked to do in completing the diary are given in Appendix C.

At the end of 1994, the faculty of The Flinders University of South Australia in which the investigation was undertaken comprised four Schools, namely, Education, Humanities, Law, and Theology. Furthermore, Education and Humanities were subdivided into several disciplines. Education consisted of three disciplines, Professional and Educational Studies, Special Education, and Liberal and General Studies. Eight disciplines formed the School of Humanities namely Drama, English, Greek, Italian, Legal Studies, Philosophy, Spanish and Visual Arts and Archaeology.

**Table 1** *Student sample - Designed and achieved*

| School of | Designed sample | | | chieved sample | | |
|---|---|---|---|---|---|---|
| | N of student enrolled in higher degree by research | N of students in designed sample | % of enrolled student in sample | N of student in achieved sample | % of designed sample | % of student enrolled in higher degree by research |
| Education | 40 | 16 | 40 | 14 | 88 | 35 |
| Humanities | 69 | 23 | 33 | 18 | 78 | 26 |
| Law | 3 | 3 | 100 | 3 | 100 | 100 |
| Theology | 14 | 7 | 50 | 4 | 57 | 29 |
| Total | 126 | 49 | 39 | 39 | 80 | 31 |

***Students***

The study employed a disproportionate stratified sample design to allow meaningful comparisons between the four Schools within the Faculty, namely Education, Humanities, Law, and Theology. As a consequence, relatively large proportions of students from Schools with small numbers of research students were included in the sample (Rosier & Ross, 1992, 78).

Columns one to three in Table 1 provide information on the designed sample for the study in terms of the number of students enrolled in a higher degree by research, the number of students in the designed sample, and the percentage that this number represents of the total number of students enrolled. Information on the number of students who actually participated in the study is given in columns four to six.

The sample was drawn from a complete list of those 126 students who were enrolled in a higher degree by research in the Faculty at the time of the study. The list was subdivided by School and within each School, students' names were recorded in alphabetical order. Students were then allocated numbers between one and the maximum number of students within each School. Finally, students were selected by picking a number randomly.

While the majority of students were willing to cooperate in the study, some students decided that their involvement in the investigation would require too much time, considering their other commitments. In a few instances, a student denied cooperation for fear of possible criticism resulting in detrimental consequences for their candidature, despite assurances of confidentiality. These students were replaced by the next person on the list who had the same characteristics in terms of gender, degree, status, and residential status. Where no person could be found who had the same four characteristics, the next person on the list with three characteristics in common was chosen and so forth.

**Table 2** *Characteristics of students - Target population and achieved sample*

| | Gender | | Degree | | Status | | Residency | |
|---|---|---|---|---|---|---|---|---|
| **% of** | female | male | PhD | masters | full-time | part time | Aust | Oversea |
| target population | 43 | 57 | 56 | 44 | 51 | 49 | 94 | 6 |
| achieved sample | 44 | 56 | 59 | 41 | 49 | 51 | 87 | 13 |

**Table 3** *Supervisor sample - Designed and achieved*

| | Designed sample | | | Achieved sample | | |
|---|---|---|---|---|---|---|
| School of | N of supervisors | N of supervisors in designed sample | % of supervisors | N of supervisors | % of designed sample | % of supervisors |
| Education | 18 | 8 | 44 | 8 | 100 | 44 |
| Humanities | 33 | 14 | 42 | 13 | 87 | 39 |
| Law | 1 | 1 | 100 | 1 | 100 | 100 |
| Theology | 20 | 8 | 40 | 7 | 88 | 35 |
| Total | 72 | 31 | 43 | 29 | 94 | 40 |

In some instances, students agreed to participate but did not appear at the arranged time for the interview. In other cases, information was available on the interviews but the diary was not completed. While all efforts were made to obtain as much and as complete information as possible, not all the desired data could be collected from all selected students. However, as the last row in Table 1 shows, the achieved sample of students represented 80 per cent of the originally designed sample. This, in turn, corresponded to one third (31%) of all students enrolled in a higher degree by research in the Faculty of Education, Humanities, Theology and Law. While the number of students in the achieved sample was close to number in the designed sample, the number of students who had to be replaced, or with incomplete data, was considerable enough to conclude that while an effort was made to draw a random sample, the achieved sample was biased in favour of students willing to participate and with the time to do so.

Figure 1 presents the characteristics of the achieved sample in terms of gender, degree, status, stage, and residency. Thus, the total sample of 39 students consisted of 17 female students and 22 male students. While 41 per cent of students were enrolled in a Masters degree, 59 per cent were working towards a PhD. The sample involved nearly the same number of full-time (19) and part-time (20) students. The majority of the students in the sample considered themselves to be in the middle of their candidature (54%) while approximately one third (38%) said that they were at the beginning of their research work and only eight per cent reported that they were close to the submission of their thesis. The sample was dominated by students who were Australian residents (87%) and comprised only a small number of international students (6).

Table 2 shows the close match between the student characteristics of the target population and the achieved sample in terms of the proportions of each gender, degree, status and residency. Only the proportion of international students deviated between the target population and the achieved sample in that international students were slightly over represented in the study.

***Supervisors***

A stratified simple random sample was used to select staff from within the Schools which were used as strata. No attempt was made to link students and supervisors in the study since the aim of the investigation was not to evaluate any particular practices of supervision but rather to identify the tasks and strategies which students and supervisors considered to be an integral part of a higher degree by research.

A list of all staff members who, at the time of the study, were involved in the supervision of at least one higher degree research student was collated and the names arranged in alphabetical order within Schools. The number of supervisors in the designed sample per School was determined by using similar proportions to those used in the student sample. This resulted in the selection of eight supervisors in Education, 14 in Humanities, one in Law, and eight in Theology. Most supervisors in the sample cooperated willingly with the project.

Table 3 shows that information was obtained from 29 supervisors, which represented 94 per cent of the designed sample. It should be noted that eight supervisors where female (28%) while 21 were male (72%). Thus, the ratio of male to female supervisors in the achieved sample was roughly three quarters to one quarter.

***Instruments and procedures***

An in-depth and semi-qualitative approach was taken to the investigation. The student diary was selected as a means of gaining specific information concerning tasks and strategies involved in a higher degree by research. The interviews with staff and students were only partly structured in order to enable the probing of respondents about tasks and strategies, and other views.

***Coding***

A preliminary set of codes was developed on the basis of the transcripts from the first six student and six supervisor interviews that were available. These transcripts were examined for the main themes that were present, and in relation to the issues that were the focus of the project. Some selection occurred, as the financial and time constraints precluded the examination of all aspects of the data. The preliminary codes developed in this way were then applied to a seventh student interview transcript and further refined. An eighth student

transcript was coded by members of the team separately. Comparisons of the codes assigned independently resulted in a high level of agreement between the coders.

### *Analysis*

Questions were combined for analysis according to the major issues of the investigation. Frequency counts were undertaken of responses and selected for analysis if they were mentioned by at least 20 per cent of either the student or the supervisor sample, except when the tasks involved in a higher degree by research were examined. In the latter case, figures for all categories are reported, regardless of the percentage of responses. For the remainder of the data, while attention mainly focused on the most frequent responses from students and supervisors, there were many less frequent, or idiosyncratic, responses that were not presented in the body of the report.

In presenting the results, the main focus was on possible differences in responses between supervisors and students. No statistical tests were conducted in the examination of differences in responses between groups of students, or between supervisors and students, mainly because of the relatively small number of respondents, and the potentially selective nature of the students who participated in the study. The latter arose because some of the students who had been randomly selected were unable or unwilling to participate in the project. Differences between groups of respondents should be viewed as general indications only and assessed with caution. Nevertheless, some of these differences appeared worthy of interpretation.

Results of the analysis are illustrated by bar graphs of frequencies with the x-axis indicating the percentage of respondents referring to a particular issue, which is given along the y-axis. It should be noted that the coding system allowed for some general responses to be recorded which were then subdivided into a number of specific responses. For example, for the question on the tasks undertaken by research students, those responses coded as indicating 'data collection' included every response describing this general task as well those respondents who included a description of a related sub-task, such as 'locating primary source material' or 'conducting interviews'. Thus, in Section 3.1, which presents information on the tasks that students and supervisors considered to constitute a higher degree by research, the general tasks are reported first and are followed by a presentation of related sub-tasks.

## Results

The results are presented in the form of bar graphs, based on percentages as indicated along the x-axis. The corresponding raw frequencies are recorded in brackets at the end of each bar.

### Tasks involved in a higher degree by research

Not surprisingly, the greatest number of respondents, both supervisors and students, mentioned writing since, at the end of the candidature, the result of the research has to manifest itself in the form of a thesis. The second most frequent response regarded reading, which both supervisors and students considered an inherent task of a higher degree by research. These were followed by the tasks of data collection, structuring (planning, organising), analysis, topic selection, library search, and the development of a method of inquiry. The tasks of administration and professional development were mentioned least often by respondents.

The results suggest a reasonable agreement between students and supervisors about the main tasks involved in undertaking a research degree. The view of a research degree contained in these results is relatively traditional and largely limits the tasks of a research degree to those related to the conduct of research and the completion of a thesis. A broader view (Phillips & Pugh, 1987) is that a research degree should include academic training in the Discipline/s in which the student is undertaking the research. An important component of this broader view involves responses that were coded here as professional development. Professional development included attending conferences, writing papers for publication, attending seminars and workshops, making presentations, networking with other researchers, working as a research assistant, and teaching.

Few supervisors and students mentioned professional development as one of the tasks of research degree students.

A noticeable difference emerged between the number of supervisors and students who mentioned topic selection as a task of a research degree. While 66 per cent of supervisors mentioned topic selection, only 39 per cent of students did so. It is not suggested that supervisors and students who failed to mention topic selection necessarily believed it was not a part of undertaking a research degree. Rather, it is likely to be an indication of the salience of topic selection in the mind of the respondent. The results suggest that more supervisors than students perceived topic selection as an important or central task in undertaking a research degree.

The pattern of responses relating to sub-tasks involved in reading are illustrating. The results show that respondents distinguished between preliminary and principal reading. In this context, preliminary reading refers to the reading undertaken during the initial phase of a candidature, when students sought to identify a topic which was worth investigating and the best way to go about investigating the research issues. Principal reading focuses specifically on the research questions and allows students to become "experts" in their specific field of study. Here, students follow certain authors who have contributed in a particular field, locate very specific material from various sources and become familiar with different lines of thinking and the current discussion in the area. While supervisors as well as students mentioned preliminary reading relatively often, a higher percentage of supervisors was coded

for this category. This seemed consistent with the supervisors' apparently greater attention to topic selection, which has already been noted.

Since the presentation of a proposal is part of the requirements of a higher degree by research, proposal writing was considered a separate task, by both supervisors and students. A large proportion of respondents saw the writing of sections of a thesis as an inherent task, while the writing of papers was mentioned less frequently. Editing, the task of reworking sections in order to clarify, illustrate or condense information, was also classified as a writing task. There was some suggestion that supervisors, probably being more experienced writers, were a little more likely than students to mention editing as an important task in writing.

Examination, as the processing and analysis of data, and interpretation, as the task of understanding results, emerged as components of analysis. However, the low numbers indicate that the steps involved in analysing data were not specified in great detail by either students or supervisors. Therefore, while about half the respondents mentioned analysis as a task, there was little differentiation in terms of sub-tasks.

In contrast, data collection was broken down into a number of sub-tasks, namely field work, conducting interviews, locating primary source material, preparation, and obtaining of permission to undertake data collection. However, field work was the only sub-task that was mentioned by more than half the students and supervisors.

Finally, the planning of a study and thesis outline were considered to be part of the structuring of the two- to three-year enterprise which a higher degree by research represents. Again, it was of interest that only a moderate proportion of supervisors and students considered these tasks as sufficiently important to be mentioned.

**Strategies to manage tasks**

Students and supervisors were asked to give the strategies that they thought useful for each research task. In total, 120 different strategies were coded for both groups and 19 strategies were selected for analysis (the ones mentioned by at least 20% of respondents). Those not presented here were also important, but were likely to be relevant to either a small number of students or used at only some stages of the degree.

Students had a more detailed or articulated view than supervisors of the specific strategies involved in the work of a research student. This might be expected to some extent, because it was the students who were actually doing the work. A reasonable number of supervisors referred to the strategies of using electronic bibliography facilities, undertaking analytical reading (focusing on the argument, debate, assumptions, and issues in the reading) and time management. The latter included students working towards plans and deadlines. The remaining strategies tended to be mentioned by smaller numbers of supervisors. None mentioned interviews in relation to data collection, or noting by hand as a strategy in reading.

Students frequently mentioned a number of strategies covering the tasks that had been identified. The tasks where students seemed to present a more articulated view of the work of research students than supervisors included writing, managing materials, obtaining materials, and identifying appropriate literature. Prominent among the writing strategies for students were word processing on computers, rewriting and shaping drafts, writing in sections or chapters, and obtaining feedback from the supervisor on the writing. With respect to writing, many comments were made by students and supervisors that referred to the importance of getting something, "anything", down on paper. The temptations and pitfalls of trying to read everything before starting to write were also commonly raised.

In relation to identifying appropriate literature, students, like supervisors, mentioned the use of electronic bibliographies. In addition, they often mentioned finding references from already held articles and books. Supervisors seemed more likely than students to favour the strategies of asking the library staff for assistance and using the index collection in the library. These results therefore suggest that supervisors and students differed somewhat in their views about how to access information related to students' work.

Probably the greatest difference between students and supervisors occurred for strategies associated with managing materials. Here students gave prominence to matters relating to the organisation and filing of references, photocopied articles, and notes. Some specific strategies were described such as filing articles by author, the section of the thesis to which it related, or by date. Some students used filing cabinets for photocopied articles while one student preferred to use piles laid out on the lounge room floor. Computer files were described as a useful way of managing references as were writing references on cards and developing a card index system. One student especially noted the usefulness of a bibliographic software package for recording references and notes. Although different specific strategies were preferred amongst the student population interviewed, having an effective management strategy was a frequent student response. It is clear, therefore, that from the students' perspective, the way in which materials are managed appears to be a significant part of their work.

**Qualities of a good thesis**

Each student and supervisor was asked to describe what he/she thought the qualities of a good thesis were. Four general factors and ten more specific factors were mentioned by more than 20 per cent of respondents as important contributors to the overall quality of a thesis. The four general factors were: presentation, line and presentation of argument, thoroughness, and importance. All four general aspects were mentioned frequently by both supervisors and students, but the most prominent tended to be the quality of argument and the importance of the work. Within these four general factors more specific factors were

sometimes mentioned. With respect to importance, the specific factors were; applicability, the contribution to the field of research, and originality. Thoroughness of the thesis included matters such as care with punctuation, and the accuracy of the reporting of the work. A specific factor associated with thoroughness was the content of the thesis, relating to the thoroughness with which the content was covered, including a relevant and well-documented bibliography.

In the case of argumentation, there were specific factors of coherence, interest level, and contextualization (the argument's theoretical framework and how it is embedded in the literature). Specific factors regarding the presentation of a thesis that were considered important included clarity, structure, and readability of the presented work.

The results for student and supervisor responses are displayed in Figure 9. Here there seemed to be reasonable agreement between staff and students concerning the four general factors of importance, thoroughness, argument, and presentation. The major differences between student and supervisor responses seemed to be at the level of the more specific qualities. The originality of the work and its contribution to the literature appeared to be aspects that supervisors emphasised to a greater extent than students in relation to the importance of the work. In addition, more supervisors than students mentioned coherence and contextualization of the argument. On the other hand, students were more inclined to emphasise readability.

The results relating to the qualities of a good thesis provide more information regarding the work of research students than the results for tasks and strategies reported in the previous section. In broad terms, the evidence about the qualities of a good thesis show that the work of research students relate strongly to techniques in the presentation of written work, and to techniques of argumentation, with particular emphasis on being able to develop a coherent argument and being able to develop arguments in the context of the existing literature. Furthermore, the results show that the work of these students was dominated by the need to initiate and present a product that in general terms is "important". Finally, the results suggest that supervisors and students differed somewhat in the aspects of the work that they emphasised. For example, supervisors desired the work to (a) be original, (b) be placed in the context of the existing literature, and (c) make a contribution to existing knowledge. Students, on the other hand, emphasised to a greater extent the readability of the product.

**Examiners' criteria for assessing higher degree theses**

Students and supervisors were asked what they thought examiners looked for when assessing a thesis. Using the same selection criteria as previously outlined, the factors described for examiners' expected criteria were similar to those factors described as being the qualities of a good thesis. The four main criteria of importance, thoroughness, argumentation, and presentation again emerged. In addition, the quality of the research design was a criterion.

There were some additional factors that arose at the level of specific criteria. For example, examiners were expected to look at the quality of the argument according to how logically it was presented and how well the argument had been justified. Examiners were also expected to base their assessment, in addition to the content, on the level of understanding demonstrated by the researcher in his or her particular field.

Supervisors more than students seemed to think that the importance of the thesis, especially the substantive contribution of the work to the field, was a criterion in examination. Supervisors also seemed more likely to emphasise the thoroughness of the thesis, including both the thoroughness of the content and the level of the student's overall understanding.

Both students and supervisors thought the quality of the line of argument was an important examiners' criterion, but when this was investigated more specifically, it seemed that students more than supervisors believed that the rationality of the argument was critical, while for supervisors more than students it was qualities such as justification of the argument, the way that the argument was embedded in the context of other literature, and how interesting the argument was.

**Students and supervisors were also asked how they obtained information about what examiners might look for. The most popular response for supervisors was from experience (72%), followed by, reading written material (35%),** and using common sense (28%). It should be noted that more than one response could have been given. The most popular response for students was reading written material (41%), followed by feedback from the supervisor (28%), experience (23%) and guess work (18%).

The results for perceived examiners' criteria supplement those in relation to the qualities of a good thesis, showing the same kind of factors as important components of the work of research students, with similar types of apparent differences between students and supervisors about the qualities that the students' work should display.

**Constraints**

Students were asked if they had encountered any constraints whilst carrying out their research tasks, and if so, to describe them. This part of the results concern the factors that might act as impediments to the work of research students. In total, 17 codes were developed to represent the majority of constraints described.

Many students responded with anger or deep concern about some of the constraints they raised. In these cases, the constraints were serious impediments to the student's work, posing major difficulties or significant frustration.

The most commonly described constraint was a lack of support. 49 percent of students mentioned this as a factor. This included a lack of support from the Discipline, School and/or supervisor, as well as reported feelings of low self esteem and loneliness. A lack of encouragement, pastoral care, and reassurance from the supervisor as well as a lack of formal

and informal arrangements for students to support each other were also elements of lack of support. The important aspect of this result is that in some way, nearly half the students who participated in this study felt that they were not receiving appropriate support for their research.

A lack of available material, including literature and computers (these were also coded separately) as well as primary sources, was commonly described as being a constraint for students. Time and time management were also frequently mentioned. This constraint is likely to be linked to the problem of work commitments that many students mentioned. Unavailable literature and personal problems also rated highly as common constraints. Funding (or lack of it) was raised by 21 per cent of the students interviewed, making it the seventh most commonly described constraint. For some students, the lack of funding had seriously affected their research, or required them to partly self-fund their research, and this had resulted in serious concern and deep frustration.

Other constraints that were indicated included: difficulty assessing the relevance of written material at the time that it was read, difficulty implementing the research method such as recruiting a sample, having no clear guidelines of what was expected of a research student, and difficulty adjusting to the type of study, which is largely unstructured and independent in nature.

**The contribution of the supervisor**

Supervisors were asked to describe what they thought the role of a supervisor was in relation to assisting students to develop strategies and acquire the knowledge and skills to undertake the tasks involved in being a research student. Supervisors were also interviewed in detail about up to two students whom they were currently supervising. Here, they indicated the tasks that the student had undertaken during the year (the interviews were towards the end of the year) and the kinds of assistance that they had provided for the student. This information was coded for the contribution of the supervisor.

Students were interviewed generally about the tasks and strategies involved in a research degree and subsequently were asked about the assistance that they had received from their supervisor in relation to the tasks and strategies. In keeping their diary, students were asked to identify specifically the tasks on which they were working, and then to comment on how they had learned to perform the task or acquire the knowledge, strategies, and skills to do the task.

It can be seen that the material being examined here was not based on general questions about "the role of the supervisor", but rather questions that specifically discussed the tasks and strategies that make up the work of a research student and in turn about the contribution of supervisors to these tasks and strategies. Altogether, thirty-three different ways the supervisor might contribute were coded and fifteen were selected for analysis

because more than 20 per cent of respondents mentioned them. By far the largest response category related broadly to advice or feedback. It included a number of subcategories, including feedback on progress, direction, completeness, clarity, style, methodology, and topic selection.

The percentage of students reporting that they received assistance from their supervisors was lower than the percentage of supervisors who reported that they assisted their students. Since somewhat different questions and procedures were employed to obtain information on this issue from supervisors and students, this evidence should be viewed with caution. However, this result is interesting and would appear to warrant further examination of the possibility of such a discrepancy.

An exception to the apparent discrepancy between the perceptions of supervisors and students was that both said that an important general way supervisors contributed was by giving students feedback on written material. In relation to another form of feedback, supervisors often claimed that their role was to meet regularly with the student and give feedback through discussion. However, students did not often identify this as a way in which they had received help from their supervisor. Many supervisors referred to their role in this situation as being 'a sounding board for ideas', but it seems that students might be less inclined to see such meetings in this way. Only 13 per cent of the student population interviewed indicated that they were assisted by supervisors through feedback in discussions.

When the content or type of feedback was considered more specifically, it can be seen that supervisors believed that they were assisting students to a greater extent than students indicated. For each of the subcategories of giving feedback in relation to topic selection, methods of inquiry, writing style and layout, clarity of the student's work and ideas, completeness of the work, the direction of the work, and the student's general progress, supervisors indicated giving more assistance than students mentioned having received.

Both supervisors and students said that one role of the supervisor was to assist students in general, e.g., by organising help with skills, for instance, by organising help to develop English, writing and library skills, by collecting relevant literature, and through networking (putting students in contact with others working in the area). When the particular kinds of assistance were examined, it emerged that supervisors believed that they were contributing by organising help with skills, and with literature collection somewhat more than students said they received. It can also be seen that with respect to providing encouragement and support, again supervisors mentioned this contribution more frequently than students.

**Hindsights**

Students were asked to indicate if they would do anything differently given the opportunity to start again, or, if they now realised a better way of performing some tasks or their research in general. The responses were many and varied. For this reason, these responses were summarised in the following list of alternative strategies. Apart from the top four strategies which are presented in order of the popularity of response, the rest of the list is not in order. The list is presented in point form to give an idea of some of the reflections made by research students.

Four most popular hindsights of research students:

* Enrol in a specialised course beforehand (e.g., computer course or relevant WEA course)
* Manage time more effectively
* Attend introductory library sessions (some sessions should be devoted to specialised areas)
* Attend more workshops (eg. PGSA workshops), and more workshops need to be organised

Further hindsights of research students in alphabetical order:

* Apply for money from the university
* Ask supervisor to monitor progress more closely
* Ask the library staff for assistance
* Be more selective when reading
* Concentrate on writing only
* Develop a better way to manage material from the start
* Gain more research experience before commencing a PhD
* Give questionnaires to obtain data
* Give structured interviews
* Have the university appoint another supervisor
* Make better use of the electronic bibliographies
* Obtain more feedback from the supervisor
* Perform a pilot study
* Present more seminars
* Pursue personal contact with fellow students (need more opportunities for socialising)
* Read books and manuals on how to conduct research
* Receive help to refine topic selection from the beginning
* Set clear goals and work towards them
* Start from the most recent literature

* Take more notes
* Use a data base for references
* Use the reference lists in books (thus save a lot of time)

**Summary and conclusions**

This was an intensive study of a relatively small number of staff and students in the Faculty of Education, Humanities, Theology and Law. The intensive approach of the project was necessary because of the comparative newness of many of the topics that were investigated. Consequently, the results obtained provide a basis for the development of more structured instruments that could be used with a much larger sample. In view of the limited size of the sample, the results presented here should be considered with some caution. They are indicative of potential trends and differences among the students and supervisors in the Faculty. On the other hand, support for the results arises from the fact that they are often consistent with findings from other Australian studies.

A factor that also adds validity to the findings, especially those that relate to students, is that the procedures used were conducive to students presenting their feelings and beliefs. There are two factors that were important in this way. The first was the use of anonymous responses in the investigation. The second was that the interviews were conducted by other research students, who are more likely to provide an environment that enables students to express their views than if the interviews had been conducted by a member of staff. An area where this procedure was particularly likely to enhance the students' views relates to comments about the constraints on students' work.

A provocative aspect of the findings concerns potential differences between supervisors and students about some of the central or important aspects of the work of research students. On the one hand, the data suggest that some supervisors may not have an articulated view of the work of research students that matches students' actual tasks and strategies. This suggests that supervisors, to some degree, may be somewhat unaware of the work of research students, at least in terms of elements that appear prominent for students.

On the other hand, there appeared to be potentially significant aspects of the nature of a research degree that were more a part of the views of supervisors than of research students. This suggests that there are aspects of the nature of a research degree and the kind of work that is involved in undertaking such a degree that are part of the understanding of supervisors, but which are possibly not being adequately communicated to students.

The findings present a picture of what supervisors and students believe are the main elements of the work of a research degree student. Overall they provide a good outline of the main components of the work of research students, in terms of both tasks and strategies, as well as in terms of the qualities of the work produced by students. In this sense, the findings could form a foundation for the development of structured programs to assist students obtain

the knowledge and skills necessary to undertake a research degree. The views that students expressed concerning constraints on their work also provide a basis for developing programs that could assist research students undertake their work more successfully.

When students and supervisors were asked to identify the main tasks involved in a research degree, those that they identified, with reasonable agreement, might be said to have been expected, in the sense that tasks such as selecting a topic, reading, data collection, data analysis, and writing were identified. Supervisors, however, seemed more likely to emphasise topic selection and preliminary reading. This could be linked with other parts of the results suggesting that supervisors appeared to place more emphasis than students on the contribution of the research to the development of the relevant body of knowledge, placing the research in the context of the literature, and on originality. This also seems consistent with the suggestion in the results dealing with criteria for the examination of the thesis, where students more than supervisors tended to focus on technical aspects such as presentation, the organisation of the thesis, and the logical qualities of the writing, rather than on the contribution of the thesis to knowledge in the field as well as its implications for policy and practice.

While supervisors and students displayed considerable agreement on strategies, in some ways students tended, more than supervisors, to emphasise day-by-day aspects of their work, rather than the broader context within which the work is placed, which seemed more salient for supervisors. For students, therefore, some of the principal features of their work involve tasks and strategies such as taking notes, obtaining interlibrary loans, filing references and notes, word processing on the computer, and rewriting aspects of their work. It would seem reasonable to assume that students are more aware than supervisors of the specific practical activities involved in the work of a research student.

An important aspect of the findings concerns the impediments to or constraints on their work perceived by students. In any attempts to provide environments and conditions to assist research students in their work, these constraints would need to be taken into account. Prominent among the general categories of constraints identified by the students was "lack of support", a general problem relating to a lack of perceived assistance in a variety of ways, from the school or discipline, and from the supervisor, and in more personal ways that arise from the relative isolation and individual nature of the work life of many research students.

It is apparent that other major constraints for many of these students related to difficulties with time and time management, and outside work commitments. Personal problems were also a significant constraint for many, as were aspects such as the unavailability of materials or literature that the student needed. For some students, loan restrictions on literature being used, funding limitations, and the absence of clear guidelines in relation to their work as a research student were serious impediments. Conflict with his/her supervisor was identified by about one student in eight.

When taken overall, the findings provide information about the kinds of skills and knowledge that could be the basis of structured learning or support activities for research students, whether at the discipline, faculty, or university level. Among the potential topics or areas that emerge from the results of this study are several that could be used in such a program:

- the nature of a MA or PhD research topic, especially in terms of qualities such as originality (of ideas or methods of inquiry) and contribution to the development of knowledge;
- strategies in topic selection;
- requirements/expectations at each stage of the degree;
- reading analytically (e.g. isolating the argument and assumptions);
- developing a conceptual framework;
- placing research in the context of the extant literature [included here are aspects that concern how research topics obtain their meaning and significance in relation to the literature, and how to place findings in the context of the literature];
- how to develop a coherent argument that is clear and well structured, both as part of a research program and in the writing of a thesis;
- ways to plan a research program and a thesis;
- data collection (e.g. interviewing techniques), data analysis and interpretation strategies;
- time management strategies;
- aspects of computer use as an aid to the work of a research student;
- strategies for organising and managing materials such as notes, photocopies, and references;
- writing papers for publication;
- preparing and giving conference and seminar presentations;
- making effective use of library resources;
- making most effective use of a supervisor;
- strategies to function effectively as a research student; and
- information on how a thesis is examined, and the criteria that are used in the examination of a thesis.

The fact that so many students gave "lack of support" as a constraint on their work shows a need for an improvement in the support that is provided to students. The isolation and individual nature of much of the work of research students appeared to be a factor contributing to the support problem. However, many of the concerns, knowledge, and skills that are involved in the work of research students are common to most students, especially students within the same school or discipline. This suggests that some of the support to students could be through the conduct of common structured activities covering many of the above areas.

Some of the results suggest a need for a further clarification of the role of supervisors and of the student-supervisor relationship. This conclusion is drawn from the apparent differences between supervisors and students in beliefs about the contribution of supervisors. Supervisors appeared to believe that they are providing more assistance to students than students acknowledged. One possibility is that students are not using supervisors appropriately as resources. Another is that supervisors are relatively ineffective in presenting their views to students. For example, supervisors believed that they made important contributions to student progress, the direction of students' work, and the completeness, clarity, and style of students' writing. However, students did not appear to believe that such help was received to the same degree. It may be that often when supervisors provide suggestions or guidance that they believe is critical to the student's work, the suggestions and advice are treated with less significance by students. An alternative is that the suggestions and advice are somewhat taken for granted and hence not accorded particular significance. Either way, there could be value in supervisors analysing the nature and effectiveness of their contributions to the work of their research students.

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# ACHIEVING QUALITY IN POSTGRADUATE RESEARCH: LESSONS FROM THE QUALITY REVIEW

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Postgraduate education is the key to strengthening academic and professional expertise in Australia. Through research education and training, advanced and updated professional education, and in-depth specialisation within particular fields, tertiary institutions are better equipped to provide high quality research for the general advancement of knowledge, to develop closer international and professional links, and to provide teaching staff to cope with the growth in all areas of higher of higher education, including higher education itself.

In addressing the matter of training I choose to adopt the Economic and Social Research Council's (ESRC) criteria for the recognition of Research Training Provision. In my judgement, research training should be structured and have as its main purpose the production of a trained researcher. The relevant criteria are set out in Table 1.

**Table 1: Criteria for the Recognition of Research Training**

- the adequacy of formal training in research methods and related issues;
- The adequacy of the arrangements for proper supervision;
- The presence of a good research environment so that the student is conducting research in an environment of other scholars and postgraduates actually researching in related areas;
- an adequate throughput of students so that the postgraduate student is unlikely to become isolated from his or her peers; and
- a satisfactory thesis submission rate for students which demonstrate that the majority complete their research within the expected time.

Adopted from ESRC (1991)

Growth in graduate education is now occurring, and statistics point to considerable expansion in the provision of postgraduate education during the next triennium, and beyond.

From 1989 to 1994 (Marginson, 1995) the total number of students enrolled in higher education rose by 33%, but for higher degree students that figure rose by 122%. The changes accompanying this growth are not just quantitative, but qualitative and according to Marginson (1995) postgraduate education in this country is being fundamentally transformed.

It should be noted that the higher education sector in Australia is a remarkably diverse sector in which management, processes and procedures differ from one institution to another across the entire sector. The Quality Committee has documented this fact. Most of the issues I will target are what I regard as systemic to the sector as a whole and represent postgraduate issues in general. I believe they need to be addressed before we can realise any potential for reframing policy affecting postgraduate training in the future.

In the system as a whole, as Millicent Poole (1995) notes, there has been an enormous pressure to expand postgraduate research enrolments to satisfy the demand for academic staffing and the needs of our economy generally. Specific challenges have forced conventional intellectual cultures to adapt to the requirements of commercialisation and research concentration and selectivity. Both research and postgraduate training are part and parcel of a new thrust toward economic competitiveness. The context in which postgraduate training is now embedded is both a national and international one, where there are insufficient resources to distribute, and there is strong bureaucratic pressure on accountability for what training can effectively achieve. The structures put in

place to manage postgraduate training are not stable. For example, some universities embrace the graduate school concept and there seems to be a national push (not yet endorsed generally) toward more professional doctorate programs in which the role of coursework (as opposed to a research-only project) is still decidedly blurry.

My essential task today is to examine quality issues in postgraduate training at the institutional and systemic levels particularly in relation to issues highlighted in the 1995 Quality Review. I will broadly examine the Quality Review Program first and then issues related to it: strategic management of postgraduate research, resource allocation, information technology and industry links. To this list of three, I will add the challenge of multidisciplinary growth, with a relevant aside comment on the path to student employment.

This address does not aim to present a conceptual analysis of the role of postgraduate students. It does not try to defend, for instance, the notion of a postgraduate as a self-organising learner (Cullen, Pearson, Saha & Spear, 1994). Rather, it focuses on the systemic factors that affect the process of postgraduate training and will ultimately determine its outcome.

## Quality Review

The concept of quality within a University defies definition (Karmel, 1994). The concept has never been defined and probably cannot be. As Karmel notes, many factors interact in giving meaning to the notion: staff and their competencies, students and their background, the structure and ethos of institutional settings, social expectations, and designed courseworks.

### History

The first meeting of the Committee for Quality Assurance in Higher Education was convened in June, 1993 and reported to the system for its activities in 1993, 1994 and 1995. In the first year of the program, the Committee studied all three areas of University activity: research, teaching and learning and community service. Emphasis was placed on teaching and learning in 1994, and on research and community activity in 1995. The reviews were not designed to comprehensively study all relevant aspects of institutional operations and performance. Rather, they aimed to provide a broad picture of institutional quality assurance processes and outcomes.

The two most relevant years to this audience are 1994 (Teaching and Learning) and 1995 (Research and Community Service) with postgraduate education falling between rather than within the single emphases of both years. In 1994, the Committee highlighted problems of national consistency and comparability in postgraduate progression and completion data. At that time, it considered that no single model existed in the system for measuring outcomes and the link to quality was assumed rather than examined. Overall, there was a broad level of interpretation of data relevant to quality and performance. While there emerged an increasingly useful source of national data on graduate destinations and student satisfaction, the Committee was worried by the variations observed in national terms. Common concerns expressed at that time related to : poor feedback to students of data that were collected, limited access to services such as information technology services, and poor recognition of the involvement of students on key decision-making committees (especially related to resource allocation, and practical difficulties in the implementation of grievance procedures).

Some concerns expressed in 1993 continued into 1994. Issues that worried the Committee in 1993, for example, related to quality of research postgraduate supervision and supervisory load, the growth in postgraduate numbers related to the number of staff qualified to train, and the provision of adequate infrastructure support for postgraduate students.

By 1995, the Committee had evidence that university-wide standards for postgraduate training were being developed and supervisory load was being controlled. Space requirements and infrastructure support elements were under consideration and many universities had placed formal requirements on heads of departments to confirm their availability, and procedures for good practice in supervision were well under way in many institutions. By 1995, most institutions had targeted increased numbers of research postgraduate students in their profiles which provided considerable pressure to revise postgraduate policies and to better codify supervisory practice. Benchmarking in postgraduate practices was under way but not yet developed by most institutions.

### Commentary

The 3-year quality assurance process has undoubtedly facilitated system-wide development of better policies for postgraduate training within the Australian higher education sector. The problems highlighted in the process of evaluation are not as transparent as they should be and the Committee drew back in the final run from attempting any fine-grain efforts to discriminate among Universities in the quality of the training they offer. Supervisory

load, for example, is not something assessable in strict numerical terms. For instance, postgraduate research students can be facilitated in their training through in-depth training contact with postdoctoral fellows as members of research teams; and infrastructure support has to be evaluated in terms other than the promissory notes of relevant heads of departments, themselves anxious to attract more students to gain access to increased allocation of performance-related resources. Lastly, it was never quite clear in the Quality Assurance process whether postgraduate training was part and parcel of teaching and learning in Year 2, or integrated as a component of research in Year 3. It's entirely possible that some of the inherent difficulties and problems have, as it were, slipped between the cracks of the individual focii of two successive years.

Most of the focii of the 1993 Review are reflected in the considered achievements of the 1995 Review. Table 2 presents a snapshop comparison of the 1993 and 1995 rounds. In summary, the development of a research culture for most institutions was regarded as well established in the third round; centres were established, though ways of managing them were not certain; provision of infrastructure was not well established in 1993, but was put in place or was being considered in 1995; finally, the fit of research management plans with the strategic planning process was a tension in 1993, but was realized in 1995. Overall, there were many tensions evident in 1993 that were regarded by the committee as achievements in 1995. Surprisingly few tensions were evident in the Committee's 1995 analysis. With the Committee's analyses behind us, there is something of what I would call a "commencement-conclusion" effect: There were lots of tensions but few achievements in 1993, and many achievements but few tensions in 1995.

**Table 2: Comparison of Reviews of Research, 1993/1995**

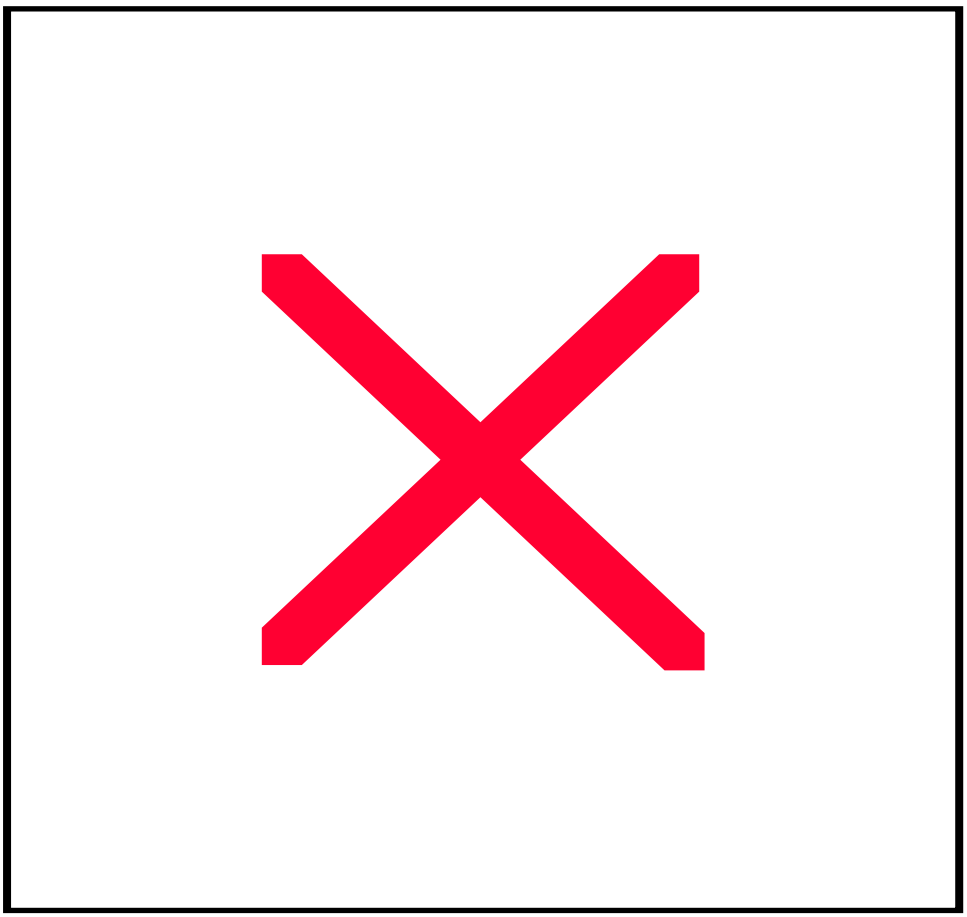
| | **Focus** | **Tensions** | **Achievements** |
|---|---|---|---|
| **1993** | • Development of a research culture<br>• Provision of infrastructure<br>• Establishment of research centres and their review<br>• Quality of postgraduate supervision and supervisory load | • Concentration of research activities<br>• Fit of RMP with strategic planning<br>• Research linkages and industry collaboration<br>• Paucity of performance data collected<br>• Benchmarking<br>• Development of resource allocation mechanisms | • Development of a first generation Research Management Plan (RMP) |
| **1995** | •Outcome analysis<br>• Initiatives for stimulating research activity<br>• Linkages and industry collaboration<br>• Management issues of centers and their review<br>• Benchmarking | • Benchmarking | • Levels of research concentration<br>• Alignment of RMP with strategic planning<br>• Development of specific indicators to track performance<br>• Development of resource allocation mechanisms<br>• Establishment of a research culture<br>• Development of research management initiatives<br>• Extension of infrastructure to newer institutions and consideration of it for others<br>• Control of supervisory load |

The strategic planning exercise - in which the Committee functions have been embedded - has certainly formulated clearer and more assessable objectives for postgraduate research activity, made postgraduate research efforts an integral component of the overall Missions of universities, and has introduced Quality Assurance in a way that the process is more systematically informed by appropriate data such as enrolment figures, higher degree success, completion times and graduate outcomes. Yet, despite these advantages, the system as a whole

is being over-managed and I think postgraduate opinions are not a very visible or audible part of that management process.

Take the process planning as an example. Strategic planning is necessary and as it should be, is embedded firmly in the sector. Now, it has an independent force of its own. Yet, postgraduate students are not really part of the resource allocation process that supposedly flows from strategic planning. They can be said to be relatively disenfranchised by the bureaucracy of the system, raising the question of whether special structures are needed to cope. Their voice on campus is not commensurate with their importance. Table 3 summarises the issue generally. Strategic planning often occurs divorced from infrastructure or resources to realize the objectives of the planning process and researchers at the interface see the results as worthy statements that primarily satisfy just the process. Too often neither emergent priorities or the ways to implement them are able to break into the planning pathway.

**Table 3: Conventional Strategic Planning**



Adapted from Mintzberg (1994)

Langley (1986) looked carefully at the roles of planning in three organisations (see also, Mintzberg, 1994). It served three purposes. The first was public relations. The second was self-knowledge and input for strategic visions. The third was group therapy - consensus building, communication, and legitimations of strategic vision.

In the words of Apter (1994), which relate to the role of planning, education at every level has become sufficiently bureaucratized so that it now resists change. Faculties defend the organisation of their life around traditional disciplinary boundaries. The responsibilities of holding on to conventional knowledge often restricts rather than expands the possibilities for growth.

Practically everyone (including government) agrees that each university should determine an approach to strategic planning that best suits its needs - but training needs are caught up in government supplying the system with mechanisms to handle strategic management improvement. Further, the system is not uniformly marshalling necessary resources towards the achievement of its planning. In response to perceived inconsistencies in its review of Higher Education Management, the Hoare Committee suggests that we should

have a review of strategic plans, based on an honest appraisal of successes and failures and on an evaluation of institutional strengths against alternatives in operating environments. Postgraduate students are an important part of that operating environment.

**Resource Allocation**

As implicated in the Quality Reports, a major issue in relation to resource allocation is that of infrastructure funding.

It is a major problem for this country that there is not enough resources going into the fabric of research in universities and it is a continuing problem for the system. An initially sceptical body, The Boston Consultancy Group, collected comprehensive data from universities and concluded with the recommendation that what was needed was an injection of approximately $120m into the sector. That has not been supplied, and the system is still hurting.

Science and technology and their future in the United Kingdom, however, lend a sobering lesson to such programs. The United Kingdom is now firmly in the grip of considering its science as expressing an intimate connection between free trade, the application of science to tradeable products, and national prosperity. This, in turn, is assumed to lead to improved services and quality of life, with important consequences for the wealth-creating capacity of the nation. The generation of national prosperity is put above other objectives which define the research, scholarship and learning within a university.

There has been some increase in funding for infrastructure in the system. In the 1995-1996 Budget, there was an extra $109 million over three years for research infrastructure, but this falls far short of what was recommended previously. And the Government still talks about fiscal responsibility in the way it distributes and uses its resources. Like so many times before, review mechanisms seemingly translate Government's own accountability in this matter, such as the recent controversial and wide ranging review of university management, were issues of excellence are viewed again in terms of accountability to the resources that are used - when those resources are simply and plainly not enough.

Infrastructure funding now not only inadequately supports the research which is conducted within the sector, but limits severely investing in important initiatives for the future, like alternative structures that encourage genuine cross-disciplinary work for both staff and postgraduate students.

It is noticeable feature of the general infrastructure available to postgraduate students that facilities for students differ markedly across the sector. As Poole (1995) notes, making pertinent international comparisons, postgraduate students in team-oriented disciplines, typically enjoy access to laboratory space shared with academics, whereas in non-team (or single research) disciplines students get access to space left over after the needs of academic researchers have been met. Quality facilities are not guaranteed or readily available for postgraduate training across different disciplines.

Further, I agree with Marginson (1995) when he asserts that the development of postgraduate education is being distorted by its funding arrangements. Too few scholarships for quality trainees are being offered, and the period of tenure is too inflexible, resulting in a lessening of the gap between what Marginson calls high-quality and low-quality outcomes in the direction of the latter.

In terms of the definition of adequate facilities, I would adopt international standards commensurate with maintaining the quality of research. These include provision of a proper place to work, access to e-mail, fax and telephone facilities; relevant photocopying, computing and wordprocessing facilities; technical and laboratory support, where relevant, opportunities to meet visiting scholars and other students, and a strong awareness of potential support that lies elsewhere in the department or the institution. As part of this provision, any institution involved in quality training should allow students to participate in relevant research seminars, workshops, national and international meetings and should encourage them to share in a network of interested people who will read and comment on their work.

**Information Technology**

The third major systemic issue implicated by the Quality reports for me is the challenge associated with the growth in information technology.

There are many themes one can take up in addressing the consequences of growth in information technology. As far as postgraduate students are concerned, one is the library: it is a major infrastructure facility impinging on research. As recognised by the Hoare Committee our whole working, teaching and learning environment is

being radically and rapidly altered by the combined impacts of information technology and communication. There are several research-related issues. One is the problem of maintaining quality control for students in the introduction of new technologies as they affect publications. Another is the issue of linking resources to a vision of the library of the future. A third is the matter of achieving change. The fourth is what I and others call "information explosion," and is an issue that seriously affects postgraduate students.

**Information Explosion**

There is now a limited capacity to cope with information explosion in nearly all disciplines. Most disciplines are faced with too much information and troubled by the task of finding a sense of meaning in the explosion that is resulting. I predict that most will face the acute challenge of what the information technologists call "data glut". In trying to find that meaning, it may not be simply a technical problem that is at issue. The task could well need a new knowledge framework what will require access to the conceptual framework of other disciplines. We will quite likely have to revisit the old perspective that things which give credibility to disciplines always reside in defining a specific pocket of expertise. That traditional conceptualisation may not be now sufficient to help us cope with the future (see Sheehan, 1995 for further discussion). Allied professionals will share the same domain and we will have to find ways of interacting about the issues. And in the predictable context of "information explosion" students will have to come to grips with multiple professions trying to talk efficiently about similar domains.

As Poole (1995) notes, the physical infrastructure for information technology is not generally available to postgraduate students on a continuing, permanent basis. "Yet there is already in place an unstoppable set of postgraduate work-practices, which challenge the traditional ways of working in universities. The new technologies have transformed modes of communication via e-mail; access to global communication via Netscape and the World Wide Web; and unprecedented opportunities for off-campus supervision, via e-mail and video-conferencing." (pp. 14-15). In my opinion, the decided advantages of information technology and the communication explosion are being hindered to a large extent by attitudes of Australian academics to postgraduate students and their assumed expertise. Attitudes are prevalent at the moment which serve to restrict postgraduate students' participation with multiple researchers and hence limit their expertise. A brief survey of the national and international vitaes of postgraduate students for initial academic positions highlights some relevant observations: relative to Australian students, those applying from overseas seem to have greater experience with different research teams, have a wider exposure to multidisciplinary research activity, and have often supervised Honours students while they are doing their own (graduate) degree. In Australia, the focus is too simply placed on the issue of doing more coursework. A greater breadth of expertise, and content diversity can be sensibly achieved by an academic shift in supervision and management attitudes.

The fourth issue is that of University -Industry Linkages.

**University-Industry Linkages**

The increased interaction between industry and universities has added to diversity in the system as a whole, and the field of postgraduate education has been the target of some of that diversity. Some of the major initiatives introduced have been through the ARC, the CRC Program, the APA (Industry) Scheme, the Collaborative Grants Program, the Senior Research Fellowships (Industry) Program, and the 150% tax concession for R & D. Generally, the literature on postgraduate experience in relation to the university-industry interface is scant, but there are definite advantages and disadvantages of the link that is operating (Powles, 1994). Benefits of the arrangement are that graduate students become familiar with work in industry, employment possibilities are increased, funding resources grow, and there is increased access to facilities for their research. But there are concerns as well.

Industry can impose time constraints which may also control the direction of the research and confidentiality restrictions in commercial research can impose restrictions on release of material which can affect students' careers. In fact, I find it paradoxical in an era in which training and research are bound together in policy terms, that intellectual property is tied conceptually by Government to the commercial context when student training in that context is beset with so many unresolved problems and difficulties. Not the least of the problems which exist is inadequate acknowledgment by industry of the norms and nature of academic work.

As Powles (1994) goes on to note, there has been no research looking at the wider issues of graduate education in the context of industry partnerships. The system's acute concern for efficiency, effectiveness and quality have had some spin-off on examining factors which enhance higher degree research and the outcomes that flow from it. Concern with intellectual property remains an issue for students, as it does for the sector as a whole. Intellectual property restrictions are seen to inhibit the acknowledgment that students should receive and they are

naturally more concerned than staff about industry's commercial-in-confidence requirements (Powles, 1994). Further, in the industry context the rights of postgraduate students are not yet well understood.

Table 4 drawn from the 1995 Evaluation of CRCs cloaks a number of these difficulties. Even allowing for time as an artefact, there are fewer PhD opportunities in the CRC Program than one might have expected. The status of the CRC in attributing intellectual property rights to students is not clear. And the impact of CRC involvement on the careers of the students has not been studied.

The last issue is that of multidisciplinary effort. It is addressed implicitly by the Quality Review.

**Table 4: Scale of CRC Education Activity: Postgraduates studying in and graduating from CRCs (1993-1994)**

| **Round** | **PhDs** | | **Other Postgraduate Degrees** | |
|---|---|---|---|---|
| | **Studying** | **Awarded** | **Studying** | **Awarded** |
| 1 | 565 | 26 | 107 | 69 |
| 2 | 214 | 10 | 84 | 18 |
| 3 | 123 | 17 | 38 | 0 |
| **Total 1993-1994** | **902** | **53** | **229** | **87** |

Extracted from CRC Program Evaluation (1995)

## Growth in Multidisciplinary Research

One of the biggest challenges is that the growth in new structures outside traditional departments will inevitably foster the emergence of multidisciplinary fields by shifting the focus from traditional discipline-bound areas to multidisciplinary research areas. I believe this will be a future feature of maturing research environments in Australia and such change will undoubtedly have important policy implications for postgraduate research training in higher educational institutions within Australia. In many ways, interactions with industry will propel this shift and, significantly, the new structures will be part of the development of an appreciable change in research culture that will bring the postgraduate education system in this country to a new level of research sophistication.

To attempt to predict how traditional features of postgraduate education will shift under new and changing structures is difficult. Existing structures have grown out of an entirely conventional university system. But changing structure is now reinforced by the links with industry and the commercial sector. As Poole (1995) notes, "The traditions of academia are by nature conservative. Yet major transformations have occurred..... some painfully slowly, others as short sharp shocks. The challenges to postgraduate teaching and learning traditions resulting from technology are (especially) strong" (p.18). Poole goes on to predict as the needs of government, industry and the professions increasingly interact and network with each other, new structural possibilities will result, and in this context " the role, shape and purpose of postgraduate training will be configured and contested - and re-framed." (p.18). The beauracratization of the system that has occurred is bound to be modified in part at least by the interests of students. This will help guarantee in Apter's terms the result that major universities will not only pass on or communicate knowledge which is inherited, but create new knowledge as a central activity in more innovative ways.

## The Path to Employment

A study completed in 1991 by DEET (Australia's workforce in the Year 2001) indicated that demand for graduates was predicted to remain high for the next decade. Essentially, the study showed that the impact of economic development and technological change is likely to increase the aggregate level of skill required for the workplace which should result in enhanced growth in demand for graduates (which is also regarded as an international phenomenon). Trends in postgraduate employment, however, are not monitored fully, and there is cause for considerable insecurity about future work employment. The problem also appears to be gender-related.

A 1994 survey conducted by Janine Collins revealed a surprising increase in contract-based employment since 1980 with the percentage of postgraduates in such employment rising from 28% in 1980-1984 to 62% in 1991-1993. The extent to which the postgraduate workforce has been casualised was more than expected with

differing consequences for male and female postgraduates. Research postgraduate degrees have much more positive influence on men's career advancement than women's, with men more likely than women ending up in tenured employment.

Data also indicate that female respondents are more likely to be caught in a cycle of unrewarding contract positions which inhibit the capacity to develop the kind of profile in research that is necessary for tenurable employment (Collins, 1994). There is need for us to be concerned (see Collins, 1994), however, about the social implications of the trend occurring towards casualisation, the stress associated with work insecurity, ability to plan for the future, and the ability to provide financial (and emotional) support for dependents. The strains for postgraduates are themselves related to similar strains for academic staff researchers: workloads are increasing, support to conduct research is limited, and there is a general misunderstanding of the needs of staff who wish to foster community and other relational commitments. For all that the statistics tell us, the system is paying far too little attention to enhancing the employment prospects of postgraduate students who themselves hold the potential for Australia's future workforce skills.

## Conclusion

One of the compelling messages of the analysis of the factors affecting quality of postgraduate training in Australia is that much more guidance on training should be given to postgraduate students. That guidance should not just address the common features across disciplines but pay much more detailed attention to the different approaches of separate disciplines. There is heterogeneity and diversity in the system and that diversity has specific implications for different disciplines. Training must respect the integrity of the cultures and conventions of different content areas (ESRC, 1991) and bureaucracy introduced to manage training must recognise this fact.

There are major systemic factors that demand to be addressed and I have outlined them. One also cannot conclude on a topic such as this without saying something about gender related factors that affect postgraduate training, especially in relation to eventual employment.

As Poole (1995) notes, Australia will have to work hard to put in place the developments that are necessary in re-framing postgraduate education policy and practice. Both the needs of students and the system have to be addressed and attitudes toward education should change in this country to optimize practice. New possibilities are forming and new structures will move into place to take advantage of them, and one of the greatest challenges is how best postgraduate education can benefit from the massive changes in information technology that are now occurring. Only with substantial reform, a real awareness of postgraduate students' needs and expectations, can the future of research training in this country be ensured.

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# Judgement calls: staff development for research degree supervisors

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## Abstract

This paper reports on the processes and outcomes of a Cathie funded project on developing research degree supervision capability conducted at the University of South Australia. The project involved both staff and students in large scale activities and a set of small scale action research projects. Activities included workshops, input from external experts, and experienced supervisors, and structured group discussions. A video tape titled *Perspectives on research supervision: the post graduate experience* and a series of information pamphlets for supervisors were produced.

One of the principal findings of the project was that, despite the availability of excellent research supervision material on institutional processes and practices there was little concrete advice available to supervisors on questions of judgement concerning such issues as supervisor expertise, questions of culture and diversity, judging student progress and feedback on draft work. With increasing workloads and demands on supervisors there were also few opportunities to discuss these issues with other more experienced colleagues. The video tape and pamphlets, described in this paper, have been developed to provide a discussion focus for both staff and students on issues of this kind.

## A Modern Fable

> *An owl, hovering in the forest, spotted in a small clearing a rabbit, wearing gold rimmed glasses, seated at a computer typing away earnestly. Bemused, the owl perched in a tree and watched.*
>
> *A huge black bear lurched into the clearing and roared: "I am going to eat you for lunch". "No, no," said the rabbit, "I'm writing my thesis on the topic that bears don't eat rabbits - rabbits devour bears." The bear guffawed, whereupon the rabbit said: "Come into this cave and I'll show you."*
>
> *Into the cave they went. The owl heard screams and thuds. After a few minutes, the rabbit emerged, brushing a few specks of black fur from his pelt, sat down and resumed his typing.*
>
> *A large grey wolf appeared. "I'm going to eat you for dinner." "No, no," said the rabbit, "I'm writing my thesis on the topic that wolves don't eat rabbits - rabbits consume wolves." The wolf sneered, whereupon the rabbit said: "Come into this cave and I'll show you."*
>
> *Into the cave they went. The owl heard screams and thuds. After five minutes the rabbit emerged, brushing grey hair from his pelt, sat down and resumed his typing. The owl was puzzled. "May I go into the cave you entered?" he asked. "By all means," answered the rabbit.*
>
> *In the depths of the cave it was very dark, and even the owl had to wait a few moments before he could make out the scene inside. Then he saw an enormous lion, sitting on its haunches, surrounded by cleanly-picked bones and a few patches of black and grey fur. Thoughtfully he flew out.*
>
> *"What I have witnessed must have a moral," he told the rabbit. "Yes," the rabbit said, "and here it is. It doesn't matter what the topic of your thesis is - as long as you've got a strong supervisor."*

(Author unknown, 1996, 7).

## Background

The University of South Australia was established in 1991 through the amalgamation of the former South Australian Institute of Technology and part of the South Australian College of Advanced Education. It is made up of nine faculties spread over six campuses in metropolitan Adelaide and one at Whyalla. A significant proportion of its students are taught through distance education.

During the past five years the University has developed a set of generic policies and planning processes which have carried it through three 'Quality Reviews' undertaken by the Federal Government's Committee for Quality Assurance in Higher Education (CQAHE) with what can only be described as conspicuous success. The University is positioning itself as an example of what can be achieved when strong equity principles are linked to a raft of policies, guidelines and structures aimed at shifting the culture of antecedent institutions towards a stronger research focus and establishing a more coherent and consistent culture of research excellence across the new institution. Five key principles underpin the University's particular approach to redesigning research management:

- *in a period of severe resource constraint, the substantial support required for significant research development can only come from a fundamental reshaping of the University's programs, staff profile and finances*
- *significant research achievements are most likely to be the product of established and well resourced teams*
- *given the University's mission, which emphasises the application of knowledge, the focus must be on producing benefits for the end-users of research*
- *considerations of equity, as well as the need to lift the overall research effort, require that a broadly based University research culture be developed*
- *as the University matures, responsibility for key aspects of research management will be devolved to the faculties.* (University of South Australia, 1995a, 2)

Furthermore in terms of research training the University has implemented a series of visible structures and processes to ensure quality control of research supervision for participating students. These include the following:

- *all faculties produce Faculty Research Degree Management Plans*
- *all principal supervisors are members of the Register of Research Degree Supervisors*
- *all supervisors implement the University's Code of Good Practice: Research Degree Supervision*
- *all new research students have access to a University-wide induction program*
- *all faculty Research Degree Coordinators have established structured programs to induct new research students*
- *research students will be surveyed every two years to monitor their satisfaction with the quality of their program*
- *exiting students will be surveyed to monitor their satisfaction with all aspects of their candidature* (University of South Australia 1995a, 6)

The University of South Australia, like many of the 'new' Australian universities, faces a number of challenges regarding research supervision and staff development. It comprises faculties with varying expertise, experience and opportunities for research supervision. As one member of senior management commented in the initial stages of this project:

> *some faculties do a lot of supervision but don't convey very well what it is that they do while other faculties are able to describe quite complex patterns of support and supervision but have had very little experience in implementing these ideas.*

There are pockets of postgraduate activity where staff have limited supervisory experience and a significant commitment to undergraduate teaching. Other staff may be completing their own postgraduate research commitments - the Quality Audit (University of South Australia, 1995a, 7) notes that of staff involved in research training opportunities provided by the University during the 1993-94 period, 51 per cent had enrolled in higher degree studies. The small numbers of staff engaged in supervision in some areas means those in emerging research cultures may work in isolation with few opportunities to discuss supervision strategies with more experienced academics. At the same time demand for supervision and the number of

supervisors is rapidly increasing (an increase of 52 per cent during the period 1992 - 1995) along with the numbers of research students.

The policies and processes described above have set the parameters for future research management within the University and are supported by faculty-based committees and university-wide staff development and training programs which offer academics opportunities to enhance their individual skills and knowledge. Institutional literature supports this framework and includes among other things a *Code of Good Practice: Research Degree Supervision* (University of South Australia, 1993), a set of performance indicators for monitoring the quality of research training (See Appendix 1) and a Quality Assurance Cycle (See Appendix 2) and corresponding protocols and Annual Review forms to guide student progress.

This paper describes a University of South Australia project funded as part of the Higher Education National Staff Development Fund 1995 Projects (commonly called Cathie projects). The project aimed to enhance staff skills in, and knowledge about, research degree supervision by drawing together staff from various disciplines and providing financial and administrative support to enable them to participate in a range of workshops, a public forum, monthly meetings and small scale action research projects to investigate issues related to research supervision. The project began in 1994 when the head of the then staff development unit, the Centre for University Teaching and Learning, proposed that two Cathie funded projects be included in a university-wide strategy for staff development in evaluating teaching and research degree supervision. This paper is concerned with the latter project. Both proposals were somewhat innovative in that they adopted a model of action research and aimed to develop a core of staff expertise available for ongoing work within the faculties, as well as yielding products about research supervision.

The project was managed by an academic staff developer and included a project team of an academic seconded from the Faculty of Education and a staff member from the Equal Opportunities Unit. Overall accountability was established through a project management group, chaired for the most part by the chair of the University Research Degrees Committee, and with representation by senior management, faculties, academic union, postgraduate student and Research Office interests. From its inception the project attempted to ensure that a range of views and opinions would inform how staff would participate in the project and what learning opportunities would be available to them. The project was also obliged to meet certain criteria. First, the proposal supported the use of action research methods as a means of enabling staff to investigate issues of concern to them. Second, senior management directed the team to work across faculties and to resist the tendency to compartmentalise supervision according to discipline specific strategies. Third we were to work with both novice and experienced supervisors whose initial participation in the project resulted from self-selection and/or a process of appointment from faculty deans. Commitment from both groups varied depending on other teaching, research and administrative demands. Finally the project team were required to produce a video which would be used in future staff training sessions.

Many of the guidelines, policies and protocols mentioned at the beginning of this paper were in place at the beginning of this project, however they went only so far in establishing the range of responses to supervisory settings. Furthermore because policies were new and not fully integrated into daily practice, and staff changes were common at the postgraduate level, many staff were unaware of the detail of the policies and the subsequent impact they would have on supervisory practices. This was particularly apparent with respect to annual reviews and responsibilities of reporting to faculty committees.

At the time training for research supervision consisted of a one day workshop which outlined University policies and gave participants an opportunity to explore their understandings of the roles of and relationships between students and supervisors. During this project it became apparent that staff wanted not more, but <u>different kinds</u> of opportunities to explore processes of supervision. Experienced academics who were steeped in the traditions of supervision at another university, but were relatively unfamiliar with the guidelines of this 'new' university, were interested in discussing what they already did and whether in fact there was any need for them to change their current practice. Novice supervisors were interested in how to practically implement a set of guidelines in each supervisory setting which was invariably described as unique.

From a very early stage in the project participating staff asked questions of interpretation of the guidelines and policies and the project team had to deal with the dilemma of providing information for which there were no hard and fast answers. The project team began to think about these as 'questions of judgement'.

> **Helen Connole**: *As a supervisor of my first Ph.D. students I had questions which, quite literally at times, kept me awake at night. Questions like how I find out, in the absence of traditional indicators such as performance at Honours level, whether students have the capacity to undertake work at this level, how I develop and convey a sense of the appropriate depth in theoretical work, and how I get my own judgements checked on this point, how to assist students to get the most from their data. I was reading the literature on research supervision, I had been to a major conference on the topic, I had talked to some colleagues, who were reassuring. Why didn't I feel any better?*

As the Project Manager, Sue Shore, brought to the project a slightly different orientation and interest.

> **Sue Shore:** *My expertise was in staff development and adult education and training. I was not an experienced supervisor, in fact I did not supervise research students at all. I believed the credibility of the project rested with the degree to which we could attract speakers who were seen to have expertise and something to offer, and my ability to negotiate activities which would enable the participants to really think about supervision and challenge their preconceptions about what was going on.*
>
> *I was also interested in the pedagogy of supervision and the tendency for what I call the politics of teaching to be rendered invisible in much of the literature on supervision. It seemed that issues of culture, language, gender, authority and power were often framed in terms of deficits which resulted in NESB people 'having writing difficulties', women having 'conflicting domestic and professional responsibilities', overseas students 'not having the skills to develop thesis genres' and so on. I kept returning to these issues throughout the project raising them when I thought we were in danger of letting them slip from the agenda. I was particularly interested in hearing from supervisors who had explicitly taken account of such issues and what their practice looked like.*

This combination of factors: an emerging research supervision culture; a focus on questions of judgement and an interest in the politics of research supervision shaped the resultant processes and products in ways which will become apparent as we describe how the project unfolded. It also determined the way we both reflected on the project outcomes. The net result was a way of thinking about issues of language, power, authority and gender which resisted presenting non-Anglo and women staff and students as having deficits. As we shall describe it was not always possible to achieve these ideals.

## Process

The initial parameters for the project were set by the grant application and by direction from the project management group. These were further modified as the project progressed in response to the process of staff recruitment and early feedback.

The project was conceptualised in four stages:

- Stage 1: recruitment of staff and sharing/reviewing existing policies and literature
- Stage 2: meetings of campus groups to share supervision practices
- Stage 3: dissemination of knowledge and induction strategies
- Stage 4: development of a training video.

### *Stage 1*

As noted above, recruitment of staff involved a mixture of nomination at faculty level and self-selection. It became clear almost immediately that many of the staff nominated as experienced supervisors were already heavily committed and the time they could offer the project would be very limited. Some were unable to participate despite interest. In contrast, there were a larger than anticipated group of inexperienced supervisors and staff not yet supervising who wanted to participate.

The process of review of existing policies and literature was initiated by providing all staff involved with a copy of a recent national report on research supervision (Parry and Hayden, 1994) and all University documentation on research supervision. An important element was the employment of an experienced research officer who selected excerpts from the relevant literature, developed summaries of major issues and provided participants with individual copies of these as collated reading, together with ongoing summaries of discussions and drafts of documents as they were developed. This assistance was critical in keeping staff involved in the project. It enabled staff who were unable to attend discussions to continue reading and commenting through fax and email.

### *Stages 2 to 4*

Two introductory workshops on different campuses were held early in the year to begin the interactive phases of the project. They were videotaped for staff unable to attend. These introductory sessions included speakers with experience in research degree supervision from the faculties of Education, Nursing, Aboriginal and Islander Studies and Engineering. The workshops also identified issues of concern to participants and these formed the beginnings of a framework for understanding the kinds of questions which staff actually wanted to address rather than those identified at first by the project team.

Some of the issues raised by supervisors included the following:

- their own expertise in methods of data collection and analysis
- maintaining student progress and quality, especially judgements of 'quality' by new supervisors with only their own thesis as a guide
- supporting student writing
- communication requirements for 'different' students
- maintaining quality in selection processes.

In many instances the conversations and requests for help were influenced by the fact that as a Cathie initiative the project had attracted a number of people who were novice supervisors or had an interest in becoming a supervisor.

It was also clear from early discussions that there was a need to identify issues which were not within the scope of the project and 'quarantine' these. Difficulties created by high workloads and questions about the formal processes within and among university committees administering the research process were two common examples.

Following the initial workshops a further round of consultations and planning meetings resulted in three related lines of activity. In the first of these a set of small scale investigations were developed by small self-selected groups of staff. The topics which finally emerged were:

- Best practice in research supervision
- Structured induction programs for research students
- Cross cultural supervision
- Supervision of overseas/international students
- Cross faculty/ cross institutional supervision

Each was to run as an action research project with outcomes including some form of staff development materials.

Getting these projects identified and running required the project team and staff involved to work through a series of issues and difficulties. At first it had been hoped by the project team that a more substantial series of fairly independent action research projects could be planned and run. Staff however were extremely cautious about what they might be 'signing up' for and what it might mean in time commitments. They pointed out that it was not realistic to expect the research teams to engage in extensive consultation or data-gathering, nor to meet too often across campuses and faculties. Staff teams also identified that they did not have the collective expertise to provide 'answers' or advice for others.

The small project groups developed several possible solutions to these difficulties. It was decided to keep both the scope and the outcomes of projects manageable. Discussion papers to University committees about

issues and possible solutions, workshops for specific groups of staff and short pamphlets for supervisors on strategies for good practice were among the outcomes identified as feasible.

The projects also involved ongoing renegotiation of focus and content. Topics and content areas strongly flagged by the project team, especially around issues of difference and how 'different' students were constructed as issues or problems, were not always seen as relevant and were taken up to different degrees within the projects. The small project teams themselves had difficulty in getting interest in their questions, for example, on cross-faculty/cross-institutional supervision, from the wider University community. In general sophisticated comment or a discursive literature on the questions which project teams were raising, such as the nature of structured programs or the issues of cross-cultural supervision, did not seem to exist in the Australian university community.

The project on best practice solved the problem of its own lack of perceived expertise by generating a set of questions which worry inexperienced supervisors and using them as a basis for structured group discussions at two campuses. There were chaired by staff with expertise in group facilitation to ensure maximum participation by group members. It proved possible to involve experienced supervisors in these two-hour discussions even when time commitments had precluded them from participation in other aspects of the project. The video development team also attended to identify issues for inclusion and to 'talent-scout' for possible interviewees.

A second group of activities involved information dissemination and information-sharing for the whole group of staff involved in the project. Monthly meetings were held, rotating around campuses, in which small groups reported activity and progress and received feedback from each other, and further input and resources on relevant topics were provided by the project team. These meetings were unexpectedly well attended, despite the challenges of finding obscure locations on unfamiliar campuses, and received very positive feedback from staff. A one-day forum with an international presenter, Dr Estelle Phillips, was also organised, and was opened to all supervisors and research students, attracting a large group of participants.

Both the small groups and the regular meetings were supported by the research officer, who acted as a liaison point, summarised and disseminated information, provide some research assistance and fed back information from staff unable to attend meetings. Her role was quite critical in supporting cohesion and a sense of forward momentum. Project funding also permitted some limited time release for staff involved in the small projects, and some were able to take this up.

The third line of activity involved development of the videotape. Staff involved in the project spoke extensively with academic staff and students, both within and outside the project group, to obtain their views on supervision and to make a preliminary assessment of people and places to be included in the video. As a result of these interviews it was apparent that issues such as 'nailing down the topic, supervisor responsibilities to students' writing and 'cultural issues' were going to be part of the range of topics to be discussed. Not surprisingly these topics also occur in most of the literature discussing research supervision (Phillips and Pugh, 1994; Parry and Hayden, 1994; Cullen, Pearson, Saha and Spear; 1994).

As a result of this exploratory phase the project management group made a series of decisions which would influence the tone, style, content and purposes of the video.

First a video was seen as useful because although there was a growing body of literature on the subject many academic staff, for reasons of time, access or interest did not read it. Second the body of literature in policy, guidelines and rules was also growing, however staff expressed an interest in what we came to call 'questions of judgement', those issues and responses supervisors make which are dependent on the interlocking mix of the topic, the supervisor's and student's relative experience, how far they are into the process and the setting in which the supervision is taking place. Therefore the video took on a style and tone which was about the range of ways in which supervisors work with their students to complete what is often a long, complex and fairly isolated process.

The video format presented another set of parameters which influenced what was included, how and for whom. Videos do not replace a teaching activity - they need to be built into other activities. In this instance the video was aimed at the 'home alone' user who might want to review their own thinking about

supervision. However the video was also to be used in supervision training workshops - a fairly common aspect of university practice since the beginnings of the Quality audits. Furthermore the presenter was positioned as a background link to the issues and practices highlighted by the supervisors and students themselves. This was not to be a video where one expert recast the experiences of staff and students.

From the outset the project group realised we could not cover all of the issues which had been raised. It was important to ensure a balanced coverage of the whole period of candidature, especially as a large proportion of the project team was relatively inexperienced and had less knowledge of issues which might arise in the later stages of a thesis. The issue was made more difficult by the interlocking approach we wanted to take to issues of language, authority, gender and culture. Advice from the video director and producer encouraged a 'show not teach' approach. In his words "You have to assume that the person watching this is a fairly well educated person - exposed to years of video and other forms of media teaching. They don't want someone standing there telling them what to do".

We took the approach that staff would talk of their own experiences and dilemmas - the things that had bothered them through particular supervision experiences and what they might do differently now. This proved an interesting exercise. In the early drafts of the script, drawn from interview data, it became clear that male supervisors tended to position themselves as knowers, talking about how they had solved problems and giving advice. The only examples of uncertainty, ambivalence or admission of error came from women. This was not quite the message we had intended. We take up this issue as part of our reflections on the project in the final section of the paper.

## Outcomes

Outcomes for this project can be described at a number of levels. Individual staff learnt much about research supervision as well as developments in the state of research management within the University at the time. The University received feedback from participating staff on key issues they believed needed to be addressed through the newly developed structures of university-wide and faculty-based committees. In addition materials, specifically a video and information pamphlets, were developed and are currently under review for distribution to staff to further promote the work of the project and prompt discussion about research degree supervision.

## *What did staff learn?*

Through using action research participants were able to be fully involved in a focused project which gave them the opportunity to gather and review information on research supervision and decide on appropriate outcomes for dissemination of findings. Participants were given access to the knowledge and expertise of experienced research supervisors, and readings of current literature and library searches on specific topics related to supervision.

Evaluation strategies included end of workshop response sheets to determine needs met and needs still to be met and brief personal responses at the end of the project. The following data highlight the gains staff made with respect to specific knowledge and skills during the project:

- Comprehensive ideas for negotiating the student/supervisor relationship and tackling the issues of balancing dependence/independence of students and enhancing communication.
- Increased ability to identify student outcomes at various stages in the process and to develop indicators which determine whether these outcomes have been achieved.
- Increased knowledge about the strategies available to deal with issues such as poor writing and examples of constructive feedback.
- An appreciation of university research infrastructure and policies, the range of post graduate offerings within the university and of how the University's new staff development unit, established within the Flexible Learning Centre in 1995, supports research development for individuals.
- Better understanding of the ethical issues associated with postgraduate research and the range of strategies and University procedures at hand to address these during the process.
- Networking and exposure to other people who have a similar interest in supervision and have more experience of the varying stages of development of the student/ supervisor relationship. This enabled an appreciation of the varying styles and strategies available at different stages in the process.

Within the context of the developing research climate in parts of the University, the group identified the following critical issues regarding research supervision and suggested these issues be forwarded to senior decision makers involved in university-wide and faculty-based committees.

- Many staff were interested in working collaboratively across research centres to develop cross-disciplinary supervision teams to enhance their own work and the work of postgraduate students. They believed the climate of competition between schools, funded research centres and faculties did not always promote this collaboration and they felt the quality of research could suffer as a result.
- Where staff worked with a number of students they acknowledged that this was helpful in developing their supervisory skills. The exact size of a critical mass may differ across disciplines but participating staff believed that as numbers grew there would be more opportunities to consolidate their supervision strategies and develop opportunities for group work which may improve the quality of the experience for both students and supervisors.
- Staff noted that in areas of the University where research was in its infancy some factors may work to contribute to supervision difficulties: a concurrent heavy undergraduate workload, relatively inexperienced research supervisors and supervising in areas at the edge of expertise were all situations which were likely to provoke anxiety for both supervisors and students.

## *How will this knowledge and expertise be disseminated?*

Like most higher education research the outcomes of this project are being disseminated through conference and journal publications including this publication and two other papers at this conference, those by Jennifer McKay and Carol Gibson and by Margie Sharpe. Two other avenues are available to staff. First individual academics identified way in which they would take their learning from this project into their schools and research centres. Second the video and information pamphlets provide a baseline for discussion in future staff development activities.

Individual participants identified a wide variety of plans to put their learning into practice in 1996. Some planned to be more involved in school/faculty based initiatives and in faculty and university-wide research administration now that they understood how 'the system' operated. Other plans were of a more individual nature involving the use of the 'Best Practice' pamphlet to manage students who staff were currently supervising and the use of discussion notes, readings and other resources gleaned from the project to act as prompts to discuss their supervisory relationship with current students.

In terms of the overall implementation of research supervision training, staff made the following comments:

- the use of structured discussions as a method to facilitate dialogue and development of strategies related to particular issues, proved very successful. This involved cross-disciplinary links between experienced and new supervisors and therefore exposed novices to the voice of the experienced, as well as prompting experienced researchers to reflect on their own practice.
- the process of getting together with colleagues across faculties to discuss issues related to research supervision has been extremely useful for participants, and cannot be fully expressed in written outcomes. This point is of significance with regard to university-wide induction of new supervisors.

## *End products of the project*

**Video - Enhancing Research Supervision: the Postgraduate Experience**

In the original submission the University identified as a project outcome the need for a training video to explore issues related to research degree supervision. A number of videos existed already and the team faced the challenge of developing a video which did not unduly repeat existing material. An important consideration was that any video would be incorporated into future University initiatives to develop packages for staff training in supervision. The packages would support face to face staff development but would also be used where for lack of time, or availability staff were unable to attend university-wide training sessions. The final video, *Perspectives on research supervision: the postgraduate experience,* is 53 minutes long and designed to address the various stages of the period of a candidate's progress. These 'stages' or issues were labelled as follows:

- qualities a supervisor looks for in a student at the beginning of the process.

- supervisory settings (for example face-to-face or off-campus modes)
- early stages of contact and development
- the relationship
- issues of power and authority
- writing
- the role of challenge and criticism
- the final stages as examination approaches
- a summary of perceived qualities of a good supervisor

In the end the video draws on the wisdom of experience gained by supervisors and students as they move through the postgraduate process. This wisdom of experience has been balanced against a series of issues identified by members of the project team related to culture, language, power and authority in the pedagogy of research supervision.

The video does not purport to present one way of supervising students. In fact contradictory views are presented by a number of supervisors to show how they resolve their own 'questions of judgement' according to the mix of the particular student, the discipline, the topic, mode and their own beliefs as a supervisor. Supervisors and postgraduate students offer practical strategies as outlined below.

**What do supervisors look for in students who are about to begin the Ph D process?**

Under this heading many supervisors included comments about students being 'keen' having a 'passion' or 'burning desire' as a key element of their approach to postgraduate study and related this to the amount of time they would have to live with the project until completion.

> *I'm looking for a burning desire in them that that they want the answer to the question , that they have a passion for it because they're going to have to live with it for 3 - 6 years depending on whether they're full or part time. I'm looking for in depth knowledge in the area that they're going to investigate. I look for research capability. I look for stamina and resourcefulness. And I look for honesty.*

**How do supervisors deal with different supervisory settings?**

Like many universities the University of South Australia has commitments to on-campus and off-campus students undertaking part or full time postgraduate study. This raises questions about when, where and how often supervisors and students meet.

> *Stephanie's an external student and she comes to Adelaide on a regular basis and I go to see her in the hotel she stays in. ... What we're doing is having a fairly extended discussion and that will often be prefaced by an exchange of email or she will send me a document to read ... usually we know beforehand what it is we're going to have that discussion about. I see myself as a kind of clarifying mirror. A focus where students can explain to me what they think they're doing and I try to both reflect that and clarify it at the same time and I may also be suggesting resources around how to go about this work and sometimes content resources as well.*
>
> *(Students in this Institute) are not working as individuals they're usually working in teams and they're working in teams with other research staff and so when a new student comes and joins us and has decided what he or she is going to do normally they become part of a team very quickly. They're located in an area with the other team members and they start joining planning meetings and find out what other students are doing. ... it's a supportive environment in many ways but it's also a challenging one because there are deadlines that they have to meet in order to conform with the needs of the team and the industry partners.*

**Early stages**

In the early stages of the process staff develop supervisory strategies which depend on the type of undergraduate and previous research background of the student. Key issues in this period seem to include locating a topic and narrowing down a field of research.

> *A student who's done a 3 year undergraduate and an Honours course, at that stage of their educational life, they're not normally in a position to have a proper focus of what might be done for a Ph D, what constitutes a Ph D.*

On the other hand one supervisors was not bothered by the start up knowledge students had.

> *It doesn't alarm me if people don't know immediately what they want to do. I'd rather they took a little bit of time to consider than made certain decisions already about a general field of study. There are some practical considerations. If there's a scholarship on offer, to work in a particular field, that might be the thing that swings the balance, fair enough. But there are other people perhaps, you know I think it's useful for them to take a little time to go and talk to people who they may not have had experience with, who work in that field and that's particularly true of undergraduates.*

Another issue which arises in this period is that of determining the relationship between a Ph D thesis and a report associated with a work related problem. This is often a significant shaping force in circumstances where the postgraduate students are mature aged and engaged in professional life as part of their employment. One student was well aware of the demands of Ph D study especially as she held down a fairly demanding job at the same time. She realised that this might affect choice of topic in the early stages.

> *Realistically working full time with a fairly demanding job and trying to do demanding study as well is probably very silly and yet the best way of doing that I think is to combine the two. It creates some confusions at times I think in trying to separate out what might be research and what might be work. And findings that come from the research won't necessarily be used in the workplace.*

**The relationship**

Most participants in the video commented on the relationship which develops between a supervisor and student, commenting that each had expectations of each other. Many supervisors advocated a process which helped to make these expectations more explicit - that is not assuming that there were common expectations - however many supervisors recognised that some expectations may not be able to be met. Another feature of the comments about the relationship pointed to its changing nature and the importance of reviewing that relationship as time passed. Interestingly one supervisor stressed the content of the thesis as his overarching concern. In his words:

> *I don't think about whether I have to be nice to this person, whether I've got to humour them, whether they're strong on this or weak on this. Obviously I do it but a reasonable bit of it is intuitive. What I think about is (the issue) - is this a good idea?*

On the other hand some supervisors saw the relationship as central and related very much to the prior educational and cultural backgrounds represented in the student population.

> *The other characteristic I think the students were looking to supervisors is that (they are) understanding caring and supportive and that is very important especially for students who come from non- I mean the Asian tradition. These kind of characters in the supervisor is very very important. The student must trust, must understand, and must know the supervisor really cares.*

> *It's also probably true that within 6 - 9 months the student starts to know as much about the particular project as his (sic) supervisor does. The supervisor will know more about the total scene in which the project is set and perhaps has a lot more background in terms of what the mathematical tools are and so forth.*

**Power**

In dealing with questions about the relationship many supervisors talked about issues of power. During our discussions we raised issues about power related to one's ability to use language, the knowledge supervisors have about how the institution works and their position of authority in the institution. Supervisors also noted other aspects of their power and how it impacts on the process.

> *When you consider that we are in perhaps if I can say the more powerful position then it's very incumbent upon us to make the relationship work.*
>
> *Sometimes when I'm in the middle of what - worrying about what I'm coding as an intellectual problem I need to suddenly step back and say 'Hang on. How's the student feeling about it?'*

Furthermore, not all students are able to achieve the same results in one day as a result of different demands made on them by virtue of the fact that they live adult lives.

> *I think supervisors may actually have an expectation of students as this big generic group, that they will have, you know, an expectation that they will work a certain number of hours a day, which is a pity because I think there needs to be acknowledgment of difference and acknowledgment of the fact that while I don't wish to essentialise women, the fact is women generally do not have as much time to spend on a piece of research, whether it be part time or full time, as men do.*

Power in the relationship was framed in other ways too. An overseas Ph D student studying in Australia explained it this way

> *... here I can call Mike, I just call him Mike but in (my country) I can't call my professor by his first name. I have to qualify him with stature or something like that. So something like that, getting to know the person's culture and the student also getting to know the way people, the culture here is very important.*

A lecturer in language and cross-cultural issues who is also a Ph D student notes that language patterns influence the way in which students set up their written work within the proposal and the thesis.

> *In the English language we're very directive. We're very directive about how we seek help from our supervisor. We're very directive about saying 'This is what I want to do , what do you think?' And, you know, 'Would you have this back by such and such a day.' Whereas you find for example the Asian language groups are much more circular in approaching and requesting help. They're much more circular in actually presenting a written proposal, in writing about what research they're wanting to do. They're much more circular in their conversation about 'This is the problem I have and I think this is the solution to it.' They'll talk about it in a very different style from say the English language groups.*

**Writing**

When it came to writing up results most supervisors recognised that developing early writing habits was essential, however editing students' work was problematic. One supervisor went so far as to say it was

> *counterproductive ... it gets to the point where the supervisor is likely to be commenting on their own work before very long.*

Some supervisors give out articles they have written as examples of how to develop written arguments while others encourage students to share their work.

As one supervisor put it

> *You are not writing a 'who dunnit' where the - you know, you hide the thing until the end. You do the opposite. You say this thesis is about ... .*

**Challenge and criticism**

Challenge and criticism were seen as central parts of the process from beginning to end.

> *At the beginning it's very important that the supervisor challenges. It's almost as if the supervisor becomes hypothetically the examiner.*

One of the students involved in the project was very clear about the role supervisors played in challenging student ideas.

> *That's what they're there for to say 'Well perhaps this isn't quite right or have you thought about this way to go?' I would worry about supervision, any sort of supervisor, that agreed with everything I said.*

However supervisors believed that this criticism also needed to be balanced.

> *What concerns me sometimes is that sometimes supervisors, some supervisors, can be very parochial, can be biased and try to espouse his or her idea or view, be it political, be it cultural or value issues.*

**The final stages**

In the final stages working towards examination it became apparent that supervisors varied in how they attached themselves to the final product. While some said it was the student's work and they felt limited responsibility for the final piece of work, others found it more difficult to detach themselves.

> *Well coming towards the end is, I can assure you, a very very anxiety ridden time for a supervisor. Particularly when you have lived with a thesis for years. It becomes yours by proxy. This is something which I began with a student and perhaps I had great input in the early stages but now it's grown and it's sort of bigger than me and it really is owned by the student but to a great extent I sort of feel responsible for it. That, if the student gets a rewrite, heaven forbid if the student gets failed then I deeply deeply feel it.*

> *I do feel that there is a final joint responsibility and from my own experience of examining Ph Ds and Masters quite often I sort of felt like saying well it's not as good as it ought to be but I do think that the supervisor might have been amiss in his or her role. ... It is still a student's work but one cannot sort of say 'Well I'm just a helpful kind of a person but I can't accept responsibility.' I do think there is always some responsibility.*

**Qualities of a good supervisor**

Finally supervisors and students commented on the qualities they believed characterised good supervisors.

> *The supervisor is actually interested in research supervision so that they'll actually have a commitment to the student and to the process. They need to be a person that has good interpersonal skills, that they can actually go more than halfway to meet their students needs and thirdly that they have knowledge in the particular area so that they can really give constructive and useful criticism.*

> *I think the supervisor also needs to be in touch with groups internationally that are also working in the same area. And that may be just being aware of the literature but it probably means that the supervisor has to be going to conferences and meeting with people in other parts of the world.*

*A supervisor needs to be a good communicator. It's essential that in both the written and oral communication forms the messages are very clear and the supervisor needs to have , I think, a reasonable expectation of students.*

*... accessibility I think. ... I almost think they need to have like a good trainer or a good therapist, they may be having their own agendas and difficulties and problems but at the moment they're in contact with you they're really facilitating a process.*

*A good supervisor is someone that is also turned on by the research that the student is doing. That is very involved, that meets their responsibilities in terms of you know, when work is given, there's feedback.*

*...all the way along you are thinking how is the student going, and if they're not going so well should I be doing something different, should I be spending more time with them or perhaps less time with them or steering them in a different direction.*

*I don't agonise over the process that much and that follows from my basic belief that we shouldn't try to describe it as being so different from respectful constructive interaction between colleagues.*

*I reflect a lot on comments I've made or carefully think through comments I need to make for students at different stages.*

*I found it very useful for example to be asked to go and tell other new supervisors what are some of the things that I've learnt and in the process of thinking about that I've had to read some of the literature that's now written about good practice and supervision. And I think we all need to read that every now and again because to some extent it always brings me up with a bit of a jolt. Because there are usually things in there I look at and I say 'Boy! I haven't been measuring up in respect of this or that.'*

Each section of the video expands on the supervisor's ideas offered here developing insights into the thinking behind the strategies they offer. Clearly many supervisors and students have high expectations of what can be achieved during their time together. We return to this issue in the final section of this paper.

**Information pamphlets**

Two additional end products were produced from the small scale investigations undertaken by staff. A folded A3 information pamphlet summarised the key issues emerging from the structured discussions held to explore 'Best practice' in research supervision. This pamphlet addressed six key areas as follows:

- Negotiation of the student's purpose and needs
- Student/supervisor relationship
- Designing a framework
- Gathering and interpreting data
- Writing
- Submission and examination

In addition a set of issues was added to include the findings of a small scale investigation on supervising students from overseas. A second pamphlet was developed in conjunction with Study Advisers, academic staff employed to provide support for student learning. The pamphlet provides guidance for staff and students on developing the literature review component of theses where applicable.

Two small scale reports on issues related to the development of structured programs for beginning students and cross-faculty supervision issues were forwarded to relevant University committees however these reports were not developed for public discussion as were the information pamphlets.

## Reflections

From the outset we realised that it would be difficult to reflect the full complexity of issues via the media of video and short easy to read information pamphlets. We had to arrive at a storyline and set of issues which met a number of criteria. We had to cover the full period of research supervision and we wanted to raise issues about language, authority, gender and power without presenting these issues as discrete components of the process resulting in an impression that the information could be added together in a formulaic way - 'add women', add culture'- while leaving 'mainstream' academic practice untouched.

In reviewing drafts of a potential script and analysing the first sets of interviews we discovered that there was a tendency to slip into discourses which presented NESB and overseas students as having deficits and to portray male academics as 'knowers' and female academics as uncertain and more likely to admit to errors in their practice.

Without tightly scripting the video it became apparent that issues raised in preliminary drafts would not always reappear in the final interviews as we imagined them. The problem of slippage was inherent in many of the issues we wanted to raise across the project. Thus content and framing became central concerns as the final phases of video development approached.

An important issue for supervisors, and one which illustrated some of the issues of slippage with particular clarity, was that of 'academic writing'. The difficulties of using academic genres, particularly at the postgraduate level, intersected with the demands of discipline specific investigations to create barriers and stumbling blocks in becoming adept at this form of reporting. We wanted to convey to supervisors that academic genres are complex and not transparent to students, and that difficulties with them are not confined to students marked as 'different'. The ability to write in English is perhaps best viewed as a separate issue again. At the same time we recognised that academics cannot be expected to become 'expert' in issues of genre.

We decided, at a later stage in the project, to ask staff members who were engaged in cross-cultural research and language development to comment on language development and the different approaches adopted to develop thesis writing skills. In addition we returned to academics and asked them to provide insights about how they reflected on the content and processes of their work as supervisors and to talk about the strategies they used to address discussions with students which they deemed less than successful.

Many of the issues we wanted to foreground in this video have been addressed as part of the literature in adult education and teaching and learning in higher education. In adult education Mechthild Hart (1992) draws on feminist theorising and the sexual division of labor to explore the implications for 'skills training' and knowledge production in adult classrooms. Sherene Razack (1993) explores the problematic aspects of story telling as a form of pedagogy for social change. Within the academy edited collections such as Luke and Gore (1992) and Bannerji et al (1991) play out the tensions, contradictions and creativity involved in teaching and learning within universities. Magda Lewis (1993) offers a powerful account of silence in women's learning in academic and other settings and Gallop's (1995) edited collection of papers expands the boundaries of pedagogy in the academy through theory and practice deeply rooted in theorising about the body and pedagogy as performance. In Australia, Candy, Crebert and O'Leary are less explicit about the politics of teaching however they offer a number of strategies and course outlines which promote lifelong learning although these address only undergraduate education.

These and related works form a small part of the body of work on 'difference' and pedagogy in higher education and yet there seems to be little dialogue across the literatures in adult education, teaching and learning in higher education and postgraduate pedagogy. Much of what has been written emerges from the disciplines of sociology and education and not unnaturally this material takes as its base the issues and concerns of academic practice in those contexts. Furthermore the attention paid to issues of pedagogy has varied between disciplines. Where discussions about pedagogy exist these are not always easily transferable across disciplinary contexts. Moreover it can be difficult for interested academics to find out where the pedagogical debates are happening in their disciplines.

Because postgraduate supervision is viewed as such an individual pedagogical practice, both in terms of its one-to-one nature and the uniqueness of each supervisory situation, it is even more difficult to engage with the questions raised above. Thus the difficulties of constructive dialogue are magnified. For us the

challenge was to find common ground between staff with discipline specific expertise and staff developers working to implement policies and practices which are inclusive.

**Sue Shore:** *As a staff developer I approached the project with a view to encouraging supervisors to explore strategies and develop a framework for reflecting on current practice. The pedagogical principles informing that practice were often drawn from personal experience, often of one Ph D process, their own. I realised that supervision was a very individual process and therefore any advice was always balanced by the comment that you have to take each student as an individual. What I was left with was a concern that there are common reasons why some students from particular social groups are either limited in their Ph D opportunities or alternatively when they do participate they have similar problematic experiences because of stereotypical expectations which they or their supervisors have of their educational performance.*

**Helen Connole:** *As a novice supervisor my main hope from the project was that it would offer some guidance about how to convey the tacit knowledge of how to supervise - the questions I had which didn't seem to be answered in any of the literature- from experienced to inexperienced supervisors. Watching the final video what struck me was the students' identification of the need for 'guidance' and their longing for the perfect supervisor - all-knowing, all-protecting, exciting and accessible. I realised that my desire for a guide, mentor and friend was as strong and as unrealistic as theirs. What can we expect? Perhaps what we get from this video - a rich inconsistent multi-voiced sampler of reflections and ideas which can provide some guidance, not in what to do but in the dilemmas, possibilities and loneliness of doing and supervising research.*

*When I measure my own experience against the information available from the project, I have a better idea of what I'm doing well with my students and the areas in which I am less strong. I have a better idea of what might constitute good practice in each aspect of supervision. I think I've accepted that it is unlikely that I (or anyone) will necessarily be brilliant in everything, and this enables me to look more carefully at co-supervisors and other staff to make up any deficiencies. And I do have a better sense of the expertise that may be available to me among my colleagues.*

*Finally, I've also become aware that there's a whole other story, signalled in the opening fable, that could be told here, of how students and supervisors construct each other as objects of fantasy, of desire, of the perfect relationship. But that will have to wait for another time.*

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# E-QUALITY IN PROFESSIONAL DOCTORATES AND POSTGRADUATE STUDIES: MAKING AN EdD HAPPEN

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## Abstract

This paper describes Deakin University's Education Faculty's experiences in developing a 'virtual campus' for postgraduate students. The quality of resource access and communication that this provides both on and off campus students and the issues it raises for staff and students will be discussed.

## The 'Virtual Campus' at Deakin University

> "Interchange provides that sense of contact and "belonging" which, at times, is the only thing keeping this part-time and distance post-grad student going."

Comments such as these from one of our Education Doctorate students evaluating the first year spent using our new system of electronic access, Deakin Interchange, positively support the purpose and philosophy behind our efforts to establish a "virtual graduate school". Because the Deakin Education Doctorate course is offered exclusively in distance education mode, ensuring quality access to resources and people has been attempted through providing students with electronic access to the campus.

As the electronically accessible course outline describes (http://nihal02.cdc.deakin.edu.au/educat/default.htm), the Education Doctorate assumes that students will study part-time and will research from their workplace (which in fact reflects the reality of much postgraduate study). Therefore Deakin Interchange attempts to provide students with the required access to the course team and to supervisors for discussion of the content of their study, to bibliographic databases and library catalogues for "virtual" library access, and to a "virtual" public campus structure for interaction with other students, academic staff and administration, all without students physically leaving their workplaces or to remote locations. Consequently our student cohorts are comprised of participants from every state in Australia and increasingly from overseas, yet these students potentially share the same quality of academic interaction and resource access.

The EdD is designed to encourage students to share a common discussion about their research and reading which overcomes the isolation of doctoral research and actively engages students in reflecting on the whole filed of research and associated issues. The electronic medium makes this possible wherever students are located as well as making accessible a world of experts through Internet group or individual discussions.

More importantly perhaps is "the sense of contact and "belonging" quoted earlier. Many graduate students, whether study on or off campus, are beset by physical and time constraints of the workplace and family commitments which preclude much interaction with staff or other students. Many give up their studies too easily when they feel that they are not meeting required standards or can't understand aspects of their study. Electronic communication enables them to share that sense of being part of a larger

group battling the same problems and asking the same questions, and this often provides enough motivation to complete tasks and courses from which they might otherwise withdraw.

In providing this access however, there are issues of technological and pedagogical e-quality that have to be addressed. Issues such as the hardware and software difficulties that computer mediated communication can raise, pedagogical issues of how best as issues of staff use and involvement within an increasing "invisible" workload of electronic communication.

**Deakin Interchange**

Deakin Interchange is a suite of software which provides access to a variety of networked services at Deakin. Students and staff to connect to Deakin either by direct network connection on campus or through AARNet or Internet connection or via modem from off campus locations and effectively share the same easy to sue graphical user interface. Its main components are:

- Electronic mail, with simple file transfer (through the software Eudora). This means mail can be sent from one person to another (to a supervisor or another student) or one person to many (to the whole EdD team or all of a cohort of students) or many-to-many as in academic listserves or newsgroups. This can provide the communication access postgraduate students need to contact supervisors and other staff to discuss work and clarify requirements as well as contact fellow students for support from the isolation of distance study. It provides an easy of transfer of files of written work as work requires feedback comments or is submitted for assessment.
- Resource access: this is through a number of network tools enabling telnet, gopher, ftp and World Wide Web tools for accessing the Internet (and the resources of the world's educational institutions which are increasingly being made attainable online), and to many library catalogues as well as Deakin library's online CD ROM collection of bibliographic databases.
- Computer conferencing – again with an ease of file transfer – through software, FirstClass. This is the "public" forum for the electronic community of staff and students to communicate to one another and it emulates a physical campus with spaces for discussions for each of the coursework units of the first two years of the EdD and for each component of course interaction. A "lobby" for introductory comments and signposts to other conferences, a "corridor" for social interaction for the whole community (where some of the best quality far-ranging conversations are often found, as in real campus corridors), and administrative areas for providing information and discussion spaces for staff and students about course and electronic access issues.

This last public access area has been provided to answer a need the EdD team saw as an integral part of the professional doctorate – to facilitate student to student communication and share the combined wisdom of a student body who represent research into a range of workplaces, literature and professional practices. Previous sharing of their ideas and writing had been attempted through mailing of print contributions from each student to others within course units and attempts at discussion of these contributions through other methods from print to audiotape to teleconferencing. Electronic conferencing was seen as a means of expediting this sharing and interaction and its best use has been considered and debated by the course team and students (Reid et al, 1995).

## Becoming Virtual

The provision of electronic access to the Education Doctorate was initially part of the piloting of Deakin University's new electronic system. The story that has unfolded has been also one of a group of students who mainly used computers for word processing alone, trailing a new technologically sophisticated system of computer communication with our technical staff of developers and support people. Installing new software, establishing remote access and fixing "bugs" in a developmental software required a level of computer equipment, understanding and usage that many of the EdD students and staff had not reached and required more support from technical staff than they had anticipated as well as taking longer to achieve than was predicted and planned for by academic staff.

The technology equality issues which emerged may represent similar groupings of postgraduate mature age students with a range of ages from 35 to 55 and as wide a range of computer experience and confidence (see Appendix for further description of demographic factors).

- **Achieving technical equality**

Graduate students in education or training situations do not always have personal access to the level of computer equipment and the modem required to participate in an online program. In establishing this group of users, 19 out of 26 students needed to organise new hardware to successfully run Interchange. All dial-in students needed to purchase or arrange access to modems while 15 students needed upgrades of existing equipment or new equipment. Because all EdD supervisory staff are included in the conferences and the use of Interchange, 18 staff members were included in the piloting of the new system and 6 of these also needed new computers – a problem of equipment upgrading that many institutions face.

- **Inequality of experience**

Students often had a limited amount of computer experience and required time to seek assistance loading software and learning to communicate electronically (see Appendix). Some staff, too, had a similar range of computer inexperience though all were competent at word processing and as electronic mail users. Helping remote students come online was a more difficult experience for technical staff than anticipated. The two groups often had difficulty in sharing the same language and computer understandings, attempting to communicate and problem solve together. The evaluation of the pilot program during 1995 (Goodwin, 1995) (Goodwin et al) highlighted some of these problems and provided data that suggested that users would become more comfortable and confident as their experience increased and once successfully using Interchange were enthusiastic about is potential to their study. However some students who had used computers only minimally before, were left "feeling inadequate, incompetent and lacking in confidence because they could not understand explanations which were given by support staff." (p 35).

## The Virtual EdD

Of the 25 students enrolled in the EdD who were potentially involved in the project, 17 students were online by the end of 1995, with eight students still to gain access. Of those online, seven are from country Victoria, three are in Melbourne, two in Darwin, two in Hobart, one each in Perth and Brisbane and one is in Canada. Those with direct network access through an institution had more successful access than those coming in via Austpac, the packet switching communication link provided for cheaper remote

access. Of the eight remaining students who were not electronically linked to Deakin, five have computer or modem upgrades to organise, three in the Northern Territory and one in Queensland have access problems which have to be solved and one in Japan has made some progress with establishing a networked access point or finding an Internet provided. Internet access provision is a complex and changing field that institutions have to constantly address at a policy level. The variability of telecommunications quality at the student's end of the connection can often add to the frustration and workload of providing remote access.

The interactive space for communication via the FirstClass conference was seen as a public area for student discussion as well as for discussion of tasks to be incorporated into the coursework units. We found when a course required students to interact they did, and many were constant readers of the conferences, but only a few conversed on the conferences continuously and provided the dialogue for the whole group which we had foreseen would involve larger numbers.

**Semester One Unit Conferences**

Because of technical problems and student equipment needs, access to Deakin Interchange had only been achieved for a small group of participants by the end of Semester one. The conferences which were based around units of the EdD coursework therefore had a small membership of students and a lifespan that lasted only the semester that students were working on that unit. In the final weeks of first semester we established conferences for **Research Tasks A** and **Research Tasks B** and these were active from the end of May until the beginning of July with 22 messages and 27 messages respectively.

Both conferences reflected a mixture of course content related interactions, primarily about the tasks that had been set for assessment in that unit. They were also often about process within the course as well as about the use of the software as we all learned to use the different capabilities of FirstClass. Membership of these early conferences were limited to the early starters – on Research Tasks A the three students (out of a potential nine) were two females and one male who interacted with two staff members and on Research Tasks B three male students interacted with four staff members.

**Semester Two Conferences**

By Semester two more students were gaining access and coming online though many took months to achieve this. The **Research Writing** and **Literature Review** Units were combined into one conference for semester 2 but this cohort had the lowest number of students accessing Interchange for a variety of reasons mainly due to problems of equipment and remote access, so this conference had a small number of participants – one female and two male students and two staff members. There were 43 interactions – 18 by students and 25 by staff. The interactions were very content focused as assessment tasks required electronic posting where possible and students successfully transferred files and discussed content. The staff member responsible for the course, had a busy workload responding to the students and facilitating discussion.

The cohort in the **Colloquium Preparation** phase of the EdD had a conference established to reflect this. This had a high interaction (106 messages). Again 53 of these messages were from students, three males and one female, 53 from four staff. This conference was in great part a discussion between one staff member and a student preparing his colloquium with support form his supervisor, with other students and EdD team members contributing to the discussion. It served as a useful focus for students of both cohorts coming up to the colloquium process (and for new supervisory staff).

**Pedagogical Issues**

- **Quality time**

Our expectation of students wanting to initiate communication with one another in a public forum was not fully realised mainly as out group of students led busy professional lives where time for study was at a premium and any words written electronically had to "count" in their coursework assessment. As one EdD student reflected in a way that was typical of many:

> "I have done absolutely nothing for six weeks; I had the School magazine and I finish my 150 reports today (I think). I'll start on Deakin work this week. I'm not in too bad a position but school has been a tad busy for the last few weeks."

- **Required Participation**

This raises the issue of required conference contributions – making electronic discussion a required part of the curriculum. Other studies recommend this approach as with another graduate course using Bulletin Board technology which advised "Having an ongoing series of assignments tied to the subject matter is critical." (p 136 (Heller, 1995)). This encourages student discussion with a quality of thoughtful interaction and is an issue which must be considered.

Staff participation

Anticipation of a discussion which involved supervisory staff was not realised either for a range of possibilities includ9ng the time pressures of large student to staff ratios. An audit of the FirstClass User database showed that of the 19 staff given access and initial training on software use, eleven have logged in, mainly as readers of the conference, with three active course tam members involved in discussions. Eight supervisory staff have not logged into the conference at all after their initial introduction to it which may reflect their use of electronic mail as a preferred communication for supervision. Further involvement of these staff members in conference discussion would probably need more structured requests and requirements as many are unused to a type of supervising which involves more than a one to one process between student and supervisor.

Conference Moderation

The "critical mass" needed for active discussion between students is an issue that needs to be considered. The conferences that were established to reflect the interactive elements of the course will only ever have a student membership potential of around ten or less. This can general a good discussion if it is related to the assessment tasks – several of our students only communicate on the conference if it is course related, although they regularly read the conferences. There seems to be an expectation by students that staff facilitate these conferences and there is little interaction on unit conferences if this does not occur. This is supported in other studies which are much more actively managerial than ours and Paulsen ((Paulsen, 1995)) states "Despite the shared responsibility of all conference members to participate, it is the moderator who makes the difference between a successful conference and an unsuccessful one. That individual nurtures the conference to accomplish objectives and create a productive experience for all participants". The active communicators among the students readily use the other areas of the "virtual campus" to communicate but the course related conferences seem to require the "teacher's" presence and direction.

If the workload this represents is too great for staff, strategies for handling the facilitator role to students within the structure of the tasks could be developed. Our students are educators themselves and often take the lead in discussion informally so such a process could be incorporated well. Private group conferences could also be established for small groups of students who could then report to a more public forum after their own more intimate discussion. This strategy works well in other postgraduate courses and may encourage more participation from our "lurkers".

Many students in the post colloquium phase of the EdD course have access to Interchange but there has been no specific discussion area established for them on the conference thus making them appear more "invisible" than other participants. Their participation and discussion of their experiences in some of the unit conferences could be invited as unless this is done they can be unsure of which "room" to enter and keep very much to their defined spaces.

Conclusion

Providing a high quality of academic support and provision of resources to postgraduate students who are often studying within the time constraints of busy working lives and family commitments is a difficult process for institutions even when students are within an accessible geographic distance from the campus. Deakin's provision of electronic access through Deakin Interchange helps answer this problem while opening up access to students in other states and countries.

Such a system opens up new pedagogical possibilities of an interactive "virtual" campus which suit the educational philosophy on which the Education Doctorate Course is premised. It also raise problems and issues of equality when attempting to bring all students online. However in evaluating this provision students were positive in their reception of all of the facilities Interchange offered. Though as they learned to use the electronic environment most said they didn't email other students often and were sometimes "invisible" on the conferences, being readers not writers, it provided them with the support and information they needed to reduce their isolation and make them feel part of an extended "virtual" campus.

## Appendix

## DEMOGRAPHIC FACTORS

### Demographics of student participants

All EdD student participants were studying part-time in off campus mode and working full-time.

| | Gender | | Average Age | Connection Method | | | Did not connect | |
|---|---|---|---|---|---|---|---|---|
| | Female | Male | | Direct dial | Austpac | Network | Female | Male |
| EdD | 13 | 13 | 47 | 1 | 7 | 8 | 7 | 3 |

Of the EdD students who did not connect, 2 were overseas, 5 had not upgraded their equipment to the required level by the time of the pilot, and 3 had unsolved installation and access problems. Three who did not upgrade had arranged other email access already, one with access problems connected through TEAS and Pinemail, and one overseas student used a fax modem for immediate communication.

### Location of student participants

| | Melbourne | Geelong | Country Vic | Interstate | Overseas |
|---|---|---|---|---|---|
| EdD | 3 | 1 | 5 | 14 | 3 |

### Computer equipment used by staff and students

Students and staff were asked to provide details of the type of computer they were using and the amount of RAM installed.

In the EdD group, 19 students had to organise new hardware (all direct dialling students

Had to purchase or arrange access to modems, 15 students needed upgrades of existing equipment or new equipment). Of the 19 staff members 13 were adequately equipped before the project began (though some with 4mb RAM and 40 MB hard disk space had some difficulty running all of the program). Many of this latter (4/40) group and the remaining unequipped staff upgraded equipment during the course of the pilot project.

| | Macintosh (>+68030) | IBM compatible (>=386) | Total |
|---|---|---|---|
| EdD | 34 | 10 | 44 |

### Previous computer experience

In the pilot evaluation questionnaire, all participants (staff and students) were asked to indicate the categories of software they had used prior to using Interchange and the frequency of their use. Some respondents did not indicate frequency so the following

table indicates prior use only. Percentage figures represent the proportion of respondents to the question in each group who answered yes.

| | EdD | MBA | Total |
|---|---|---|---|
| Operating system – DOS | 5 (28%) | 17 (85%) | 22 (58%) |
| Windows | 6 (33%) | 17 (85%) | 23 (60%) |
| Macintosh | 15 (83%) | 6 (30%) | 21 (55%) |
| Word processing | 16 (100%) | 19 (100%) | 35 (100%) |
| Spreadsheet | 12 (80%) | 18 (95%) | 30 (88%) |
| Database | 8 (53%) | 17 (94%) | 25 (76%) |
| Communication | 5 (31%) | 18 (100%) | 23 (68%) |
| Electronic mail | 11 (61%) | 18 (100%) | 29 (80%) |
| Computer conferencing | 3 (20%) | 15 (83%) | 18 (55%) |

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