



Quality in Postgraduate Research

Quality in Postgraduate Research:

RESEARCH EDUCATION
IN THE NEW GLOBAL ENVIRONMENT

ADELAIDE, SOUTH AUSTRALIA, APRIL 17 & 18, 2008

Conference Proceedings

Edited by Margaret Kiley
and Gerry Mullins



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SOUTH AUSTRALIA

**Quality in Postgraduate
Research:**

**Research Education in the
New Global Environment**

**Proceedings of the
2008 Quality in Postgraduate Research
Conference**

Adelaide, Australia

April 17-18

2008

**Edited by
Margaret Kiley and Gerry Mullins**

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Editorial

**Margaret Kiley and
Gerry Mullins**

The theme of the 2008 Quality in Postgraduate Research conference, *Research Education in the New Global Environment*, recognised that the environment in which research is conducted is constantly expanding and changing. Universities find themselves challenged to fulfill their role in today's *global* knowledge economy. The role and impact of research education in the modern university is critical in this debate. The theme of the 2008 *QPR* conference provided an opportunity to explore these issues. Papers and presentations were invited that addressed the following themes:

- The university in an international knowledge society
- The implications of the Bologna Agreement for research education
- The impact and evaluation of research education within quality assessment frameworks
- Developments in research education in Asia
- Educating research students for employment in a global environment
- Changing conceptions of quality over time and place
- Globalisation and capacity development
- Managing the quality of research education in different environments
- Student and supervisor development in a changing world.

The conference theme was further explored by three outstanding keynote speakers. Professor Barbara Evans introduced them thus

From the U.S. – Debra Stewart - President of the Council of Graduate Schools. CGS has made an impressive contribution in ensuring continuous improvement in an educational system of extreme individuality and autonomy. After the USA being the defacto 'benchmark' for graduate education for decades, there is now a declining 'local' interest in graduate education, an increasing reliance on international recruitment, and a 'post 9/11' environment that has resulted in changed mobility of students and accessibility to the U.S.

From Europe – Jean Chambaz – Chair of the Steering Committee of EUA – Council for Doctoral Education (CDE). In Europe, where PhDs began centuries ago, there are now huge changes occurring. The Bologna initiatives to 'harmonise' higher education across Europe in a context of great diversity of countries and systems, languages and cultures. They have made considerable strides in 1st and 2nd cycles – and are now moving into the 3rd cycle.

And from China - Lou Hongxiang – Vice President Research of Shandong University. China has experienced a dramatic increase in the size and quality of university education which has driven a huge demand for research education of Chinese students both at home and abroad and, more recently a shift in international relationships toward greater sharing, partnerships and joint educational programs.

As was clear from the enthusiastic response to the keynote speakers, and is evident in their papers in these proceedings, Barbara's high expectations were well met. With representatives from nine countries other than Australia, the international flavour of the conference was further enhanced.

In summing up the 2008 conference Professor Alan Lawson pointed out some of the other issues that emerged during the conference, particularly the shift in focus from

attrition to completion, including a growing number of strategies to help student complete in a reasonable time and an emerging interest in where they go after completion. Alan also commented on how the quality improvement of research education has become a collective effort with involvement not only of supervisors but also professional administrators, educational developers, student support staff, etc.

The conference itself represents an excellent example of such collaborative effort. When the conference delegates were invited to address the question: *Where to in 2010?* it became clear that people attended QPR conferences as much to find out about good practice in other universities as they did to hear about the latest research on postgraduate education. The challenge for future conferences is to maintain the balance between research and practice in the program.

Margaret Kiley and Gerry Mullins
April 2008

Keynote Addresses

Introduction to the Conference Theme

Barbara Evans

University of British Columbia
Canada

The theme for this conference is 'Research Education in the New Global Environment'. This invited consideration of a broad range of issues including the impact of the Bologna process; recent Asian developments in research education capacity and demand; global impacts on content of programs, supervision requirements and mobility of students and the ever present 'quality assurance'

For me the theme invites two questions:

- 1) What *is* the global environment for research education?
- 2) What is *new* about it?

1. The global environment

i) Certainly there is considerable global agreement in *expectations* of PhD programs.

Examination of research and policy statements from Europe, the US, Canada and Australia identifies three broad areas of agreement.

- Clear agreement that the PhD should **contribute to knowledge** through **original research**.
- PhD graduates are expected to have **substantial knowledge in their area**.
- There is also **increasing agreement** that PhD training should include development of **transferable skills/competencies**.

For example, the European Universities Association (EUA) has run a series of 'Bologna meetings' over recent years and there are several great publications on their website including "*Doctoral Programmes for European Knowledge Society*" (2004-2005) produced by a working team from 48 universities from 22 European countries! This publication develops a set of ten basic principles, the "Salzburg Principles" - ideals for universities that are relevant to the improvement and quality assurance of doctoral programs in all countries.

ii) There are also many global similarities in the *challenges & opportunities* facing research education.

Another example - in 2007 CGS sponsored the Banff meeting on Graduate Education, with key representatives from Australia, US, Canada, Europe and China. It was clear that similar concerns are relevant world-wide to those involved in doctoral education:

- Ph.D. completion rates,
 - strategies for increasing doctoral degree completion,
 - professional development programs for academic & non-academic careers,
 - interdisciplinary programs,
 - transition from master's to doctoral education, and
 - Effective international collaborations.
- So the global environment for research education has many similarities, but...

2. What is NEW about it?

For this QPR conference we are extraordinarily lucky to have great keynote speakers from three key geographical regions – the US, Europe and China!

**From the U.S. – Debra Stewart - President of the Council of Graduate Schools.*

CGS has made an impressive contribution in ensuring continuous improvement in an educational system of extreme individuality and autonomy.

As we'll likely hear from Debra - after US being the defacto 'benchmark' for graduate education for decades, there is now a declining 'local' interest in graduate education, an increasing reliance on international recruitment, and a 'post 9/11' environment that has resulted in changed mobility of students and accessibility to the U.S.

**From Europe – Jean Chambaz – Chair of the steering committee of EUA – Council for Doctoral Education (CDE).*

In Europe, where PhDs began centuries ago, there are now huge changes occurring. The Bologna initiatives to 'harmonise' higher education across Europe in a context of great diversity of countries & systems, languages & cultures. They have made considerable strides in 1st & 2nd cycles – now moving into the 3rd cycle. Like the CGS, the EUA also has many useful publications.

** And from China - **Lou Hongxiang** – Vice President Research of Shandong University*

Australia has had a number of visits from Chinese Deans of Graduate Studies to our DDoGS meetings. They illustrated the dramatic increase in size & quality of university education within China, which has driven a huge demand for research education of Chinese students both at home and abroad and, more recently I believe, a shift in international relationships towards greater sharing, partnerships and joint educational programs. This is true for many other developing educational systems.

** And in Australia - what is new?*

We have a very energetic new government. And we will need to be nimble to both **influence** and **respond** to get the best possible outcomes for graduate education.

I'll conclude by adding some reflections on Australia's global position – where we are now and how we got there.

I believe Australia has had many advantages over Europe & US that may not be sufficiently recognized:

- a single country (in contrast to the diversity in Europe and lack of an overarching authority)
- considerable Government intervention and oversight (e.g. transparent funding through the RTS and their requirement for us to develop 'graduate attributes')
- strong national oversight and quality assurance through AUQA
- Funding of research HD students is good compared to systems found in many other regions.

These factors have led to considerable quality and consistency across about 40 or so universities (in contrast to the individuality within the US system or the diversity in Europe). An extremely collegial and effective DDoGS group has

proved to be very effective in achieving consensus and has developed excellent resources: for example, many policy position papers and resources for supervisor training.

But, Australia is not a BIG player globally. The three-year baccalaureate degree still requires explanation in the US – but Bologna should assist with this (Australia does have a 13 yr school preparation like the UK). John Hayton in the Australian Embassy is doing very well for us in the US in explaining/promoting – Australians need to work more effectively with him

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Reforming Doctorate Education in Europe - A Response to Global Challenges

Jean Chambaz

Chair of the steering committee of EUA
Council for Doctoral Education (CDE)
Vice President, Université Pierre et Marie
Curie-Paris VI

It is a great honour for me to be invited to give the opening key note presentation at your 8th Quality and Postgraduate Research Conference on behalf of this brand new Council on Doctoral Education created this year by the European Universities Association. It is a kind of premiere for me as the Chair of the Council since the launching conference of the Council will be held only next June, so it's the first official presentation of this new Council, and I am quite happy that it happens in Australia.

I would like also to thank you for this invitation which gives me the opportunity to visit once more your wonderful country, and to have a rest this time, to recover from the flight, on Kangaroo Island in a small eco-lodge far from everywhere, but not anyone. And how could I imagine that the other guest of the eco-lodge would have been Debra Stewart. At least this means that Debra and I share more than our common interest in doctoral education, and our common "will" to launch a global platform to improve quality of graduate education and to develop exchanges and cooperation on a fair and mutual basis. But, please, do not conclude from this bizarre anecdote that globalisation rhymes with uniformity. On the contrary, we believe, that in a global context, diversity is a strength which has to be underpinned by quality and some practice. And speaking of diversity, as Barbara Evans has already said, in doctoral education, we know what it means in Europe. Excessive diversity could be a threat, since as you know, Europe is made up of many countries with a very old historical background – and a political background and stronger positions in the recent past, and we have to overcome all of these aspects to try to build our future together. Of course, we have different regulations at the national level concerning higher education and research. We have different kinds of research organisations in the different countries in Europe. We have all kinds of organisations of doctoral training, even, none. We have still some universities giving PhDs as taught courses when some, hopefully, base the doctorate on the practice of research. We have also all kinds of status of doctoral candidates from students which pay fees, salaries of universities, students with stipends and, as quite often in the same university, all kinds of situations are existing together.

Of course, in Europe we have a long tradition of excellence, but it comes with a long tradition of academic conservatism where it happens and it concerns reforming the system and the habits of our colleagues. An aspect of the weaknesses of the European system is the poor recognition of the doctorate at a social and economical value in most countries in sectors which are not directly linked to research. At the same time, we observed this last decade steady increase in the number of doctors trained in Europe which exceeds by quite a lot the most optimistic objectives for the need for researchers in Europe which were held by the Lisbon Agenda of the European governments, which won't be reached because they did not implement the public policies to reach these objectives. We have far more doctors trained than the need for researchers. So all that represents a kind of excessive diversity – it represents a threat to mobility and career development within Europe and to international attractiveness of European organisations. This situation calls clearly for a move

for harmonisation of higher education systems in Europe, and precisely on doctoral education. And that is why the Council of Ministers in charge of higher education and research, meeting in Berlin in 2003, included doctoral training as a third cycle of the Bologna process. As said by Barbara Evans, the Bologna process was concerning first, the first and second cycle of higher education.

From 2003, the third cycle was included, and it was a unique opportunity for universities that the European Union commissioned the Association of European Universities (EUA) to prepare recommendations for the next meeting of the Council of Ministers.

It was the opportunity, for once, to take the lead and to put forward proposals, rather than to react to the policies defined more or less correctly, and more often less than correctly, designed by the governments, and probably that is what you are facing now in Australia, if I understood. You have to take the lead and to propose the reforms you want to apply and not to be forced to go in the directions you don't want to go. EUA was established only in 2001. It is a very young organisation, but still it became the voice of universities in Europe and it gathered more than 800 individual universities from 46 different countries. Don't ask me how many universities there are in Europe – we can't answer, we don't know. Because what is the definition of 'universities' exactly? It depends on the people you are talking with and probably there are more than three or four thousand universities. Of course the most important are in EUA, but still there are some institutions giving and delivering higher education which are developing their way in Europe.

So, from these comments, you will understand that we have a tremendous amount of activity on doctoral education since 2004, with the first being a doctoral programme project to prepare the recommendations for the Council of Ministers. It was organised, as said again by Barbara, in six different parallel groups – networks – and what was really striking was, that the six networks in parallel reached the main core conclusions. It was so impressive that finally EUA endorsed this proposition which led to what we called the Salzburg Principles. These 10 Salzburg Principles were quite easily endorsed by the Council of Ministers in charge of higher education and research meeting in Bergen. And of course, we had done the job, so it was easy for them to take the ideas and they asked for more, and so EUA developed a second doctoral programme project which was to survey 46 countries of Europe, not only in the European Union, but in the Bologna area of Europe, to see what is the reality of doctoral education in Europe. We still have a lack of data, a lack of information, to know the deep reality in each different country and in each institution in one country.

At the same time, in 2006, EUA developed a third programme which was called 'Doc Career Program' to work on transferrable skills and interpretability of doctors in close relationships with enterprises and employers. And at the same time, at the initiative of Debra Stewart and Lesley Wilson, the brilliant General Secretary of EUA, we organised a trans-Atlantic conference in Salzburg to exchange information between the US and Europe. At that meeting I heard for the first time – but not the last one – the new word formed by Debra Stewart the "co-opetition", which is a mix of 'co-operation' and 'competition'. But I would say that in this kind, behind co-operation, competition is never very far behind.

And then the Ministers met quite a lot and in 2007: they met again in London. While it was not really interesting as a meeting, they still asked for more. One of the main conclusions of the Salzburg Principles was of course the level of funding of doctoral education. On this point, curiously, they didn't answer. So then to implement, these Bologna principles, EUA decided to launch this Council

of Doctoral Education. And in 2007, a year ago, at the initiative of Debra, there was organised the Strategic Leaders Global Summit on doctoral education which led to the endorsement at the global level, of the Salzburg Principles with an enlargement on the topics of co-operation, co-development, and exchanges of doctoral education at the world level.

So harmonisation is not the only driver to reform of doctoral education. First, the context is changing. Now we are in an alleged society which would be considered in the broadest sense, not only as a knowledge-based economy, but as a dissemination-of-knowledge-at-each-stage-of-society development. This knowledge society goes with globalisation which is that the problems are posed immediately at the world level, and that changed totally the answers we have to give in special and total aspects. Of course, the problems we face because of this knowledge society and this globalisation, are more complex and more interdependent, and they need more and more research to find answers, and to address these questions by cross-disciplinary.

Beside these external drivers, there are also internal drivers of universities and of social sciences which is the massification of undergraduate education in fairly open systems. And this massification is imitable and desirable in a knowledge society, but still creates new problems. All these aspects – knowledge society, globalisation, and massification of higher education increase the strategic control for universities and place better universities at the crossing of higher education and research, to produce new knowledge, to train highly qualified and educated professional workers, and to educate citizens.

In these contexts, universities have to face a new challenge with the professionalisation of training and again, professionalisation should be considered in the broadest sense. It is not only the training for a specific job, but it's giving key competencies, skills and vocational guidance to develop professional careers in a changing environment and to prepare for lifelong learning. Higher education shouldn't be any more considered as a channel leading to PhD, and if you leave university before PhD, it is because you failed, even if you are awarded a degree for failing.

So, that's really the main point of the Bologna process. Beside harmonisation of European countries, it's to consider that universities have to give blocks of competencies at different levels to reach the needs of the society and economy – at the Bachelor level, at the Masters level and at the Doctorate level. The role of universities now is to allow to their students an exit with success at each of these levels based on an informed choice of students from the beginning of their studies. And you don't have to quit at the Bachelor or Master level because you failed at the Master or PhD level, but just because you chose to do that because you were willing to enter the active life or just because you felt that you were not able to go further in your education at that time, and yet you could go on with lifelong learning later.

So, in this context, doctorates shouldn't be considered any more as a personal achievement on one's own initiative, rather the doctorate is simply the third cycle of higher education. At that time, when the Ministers decided to include doctorate at the third cycle of higher education, there was a huge debate in Europe and people were afraid of standardisation of the doctorate. By putting it in the system of Bologna, with maybe these standard credits and so on, there is really a qualitative change between the first and second cycles and the doctorate.

In the first and second cycles you have taught courses, even research-based taught courses, when, during the doctorate, you practice research and you are trained by practicing research, and as such, it's a professional experience.

We have also to face the question, "In Europe, Are we training too many doctors, since we have this steady increase of doctoral candidates in our universities?" And the answer depends on the conception we have of doctorates. The answer would be, "Yes", if it's to reproduce our species of academics – definitely we train too many doctors. But if we consider the need of society in creative workers and the transferrable skills they could get through practising research the answer is "No". And that is why we consider that the key issue for us in Europe at this time is to promote the ideal value of doctorate as the acquisition of a double competence, a course of specialised, or highly specialised, competence in the field of research, and also the acquisition of generic personal and managerial skills transferrable to other sectors. And if you consider what you do by practising the research, by developing creative thinking, you can understand that any enterprise today could hire people trained by the experience of research.

So, instead of defining a unique recipe which could be applied anywhere, the doctoral program project of EUA formulated strong recommendations to be adapted at each specific situation, in each different institution of each different country because the problems are very different. Since doctorates are based on research it's also different when considering the disciplines, because research is not the same across the disciplines. So according to discipline consideration, to trans-disciplinary research, to geographical situation, to the size of universities, you have to find different ways to apply these strong recommendations. But of these principles the first and main one is that the core competency of doctoral training is definitely the advancement of knowledge through original research. It couldn't be doctoral education without the practice of an original research project at the edge of knowledge, under the close supervision of a senior scientist and at the same time with the pre-occupation of the elaboration of one's own professional project. So you have to develop your research project and at the same time you have to develop your career plan. And as such, if you consider doctorate as such, it would be a professional experience which could be valued for entering a job.

The second principle is that this doctoral education should be embedded in institutional policies. Universities have to take their responsibilities to organise and to support that kind of program, and that's quite important in Europe where in different countries some universities are denied a strategic role as a research operator, or as autonomous institutions. We are now in the process of the atomisation of French universities, but it's a very beginning, and so we really have to say that universities have to show that they are the institutions which are best placed to develop that kind of doctoral education.

Doctoral education definitely needs structure to achieve a critical mass. It's no longer possible to develop the one-to-one relationship between the student and the professor. We really need to help students develop their knowledge and their experience through training by research to achieve in doctoral programs a critical mass of research, since research, even in humanities, is quite a collective process. And this will answer the high quality scientific environment of strong research groups. This structure could take any form; it doesn't matter as long as the structure gives the critical mass. It could be doctoral programs, doctoral or research schools or these classical graduate schools. And they should be at the high institutional level linked tightly to universities. They say that it's a different perspective from the US one, and we had this discussion

with Debra in Salzburg, but since universities are denied of this responsibility, we really have to put in front that it is our responsibility to do so.

Of course we come back to diversity, and one formula of these Salzburg Principles is that we share the same goals, we have a common frame, but we will meet this goal by different routes. Because we have different solutions to achieve critical mass, we could deliver different solutions to develop new trends. And we have to develop different solutions for recruitment of doctoral students. This diversity is quite considerable. If you see the US survey done in 2006, you can see that still in different countries doctoral education is strictly organised on this old-fashioned, individual-based system, which is not sustainable anymore. Some are structured programs, or doctoral graduate research schools. You can see that France and Turkey are the only countries where the organisation in all universities is the same, yet there are great differences inside. And what is striking is that you have still mixed situations in countries and even in the same universities, mixed individual and structured programs or mixed individual and graduate schools, and that, for me, is a real problem. We have to move, and the move is to go from individual-based to structured programs, but still in some countries you have excellent doctoral programs which are set, and funded by, the government, and at the same time at university you have still doctoral students enrolled on this old individual-based system. So we have the elite who profit from this well-funded excellence programs, and the mass which have this old, poor, badly organised and non-paid doctoral education. And they can't stand that too long.

So, if we look at diversity and structure of doctoral education to enter this critical mass, of course we shall find research intensive universities such as mine that develop their own programs or doctoral school because they have this critical mass at their university. But in some situations, and there are very interesting initiatives in Finland and now in Belgium – in the French part of Belgium – and the French part of Switzerland, where doctoral schools are shared by different universities on an original basis to achieve this critical mass in a group of disciplines in the scientific fields, and also in France at the original level we have that kind of recruitment. Of course there are some initiatives to create this critical mass for critical disciplines and that could be only at the European level, and so for, very small disciplines, very specific ones, you could have these networks joining different universities of different countries and then getting the critical mass.

Another big difference, more than diversity, is the procedures of admission of doctoral students. Mostly, and in the logic of the Bologna process, it should be through a Masters, and Masters is mostly required to enter doctoral education. But it's not the only entry point, and you could imagine that in some old, well settled countries, where it is not organised this way, they stand on their type of organisation. Our friends from the UK are not willing to have the Masters as the main entry qualification to doctoral education since they are that kind of organisation. But if students can fulfil, before entering doctoral education, their initiation through research at the Bachelor level, it's fine. They just have to explain that they do so. What is not that important is to know if this research Masters level should be organised inside the same school as doctoral education, or before, in a different system. And again we had this discussion with Debra – she said, "We want to have the Masters students in our schools because we will be stronger in the university, and for us we are not at the stage of fighting for funding within universities." It's clear that we have to develop this Masters program as a whole giving the opportunity to leave university with a good block of competencies, and then to enter the doctoral program in doctoral schools.

But whatever – the question is the level, the condition, of recruitment in the doctoral program.

Another aspect of structure and in the diversity of structures, we have a specific French doctoral school that has really been defined as a gathering of research groups to fulfil the critical mass of the research environment, but at the same time there are very light structures, not tightly bound to universities, often shared by several universities and with very heavy emphasis on organisation of doctoral education given by the law. And really it doesn't work. And so, the reason why, in our own university, we took the initiative to cross-breed, in a way, the French and the UK and US system by creating an overall structure at the level of university which we called "Institute of Doctoral Training", which is a kind of graduate school. So our doctoral schools are more like big doctoral programs at the university level and they are just coordinated and supported by this institute of doctoral training. So, as you can see, there are a lot of different ways to fulfil the Salzburg principles and the most important thing is to implement this policy rather than to do it in one way or another one.

Now let's move to another set of Salzburg Principles which concern the organisation of doctoral study. And the first point which is important, but not yet a reality in most countries in Europe, is the work done by the European Union who established a Charter of European Researches which says that, "Doctoral candidates should be considered as early stage researchers, and as so recognised as professionals with commensurate rights and duties". And the definition of the 'early stage researchers' is the first year of practising research including the thesis. It's really that doctoral candidates are considered at the European level as 'early stage researchers'. But it's not European Union, when you speak of higher education, who make the policy, it's the national governments or the regional government. And so that is the intention, which is not yet, in most countries, a reality.

We talk a lot about duration and we think that the optimal duration of the thesis of doctoral education should be between three and four years. And this could be the solution to increase the completion rate in doctoral education. We now consider that the doctorate is no more this piece of research you perform in your life, but it is just a period of training through research by developing a research project, then the format of three to four years with funding of the doctoral candidate and funding of the project, is quite fine to get the competencies given by performing research. And of course improving the completion rate, the recruitment, the supervision and the assessment of doctoral education, are crucial. It is developed very differently in different countries; a code of practice, a charter, or a contract between the candidate and the institution for funding, and for the condition of the supervision rate. It needs, of course, openness and transparency at all steps of procedure, regular follow-up of the thesis progress, not only by the supervisors, but by other tenures in universities and regular follow-up of the professional project.

The last principles of Salzburg are the promotions of university structures to meet the challenges of interdisciplinary training, the increasing geographical interdisciplinarity and intersectoral mobility, and of course appropriate funding of both quality doctoral programs and doctoral candidates.

Let's move now to finish on these transferrable skills which are so important for the employability of doctors. This 'Doc Career' project was led by enterprises, big and small ones. I guess is an important point that, of course, the skills are directly linked to the employability, and it is our responsibility to be sure that they gain these kinds of skills during their doctoral education. But the candidates, as well as the supervisors and the employers, should be aware that

these skills are acquired by performing research, if research is run as I said. They are otherwise difficult to acquire and to master, and they cannot be mastered by taking courses. You don't gain, you don't acquire those kind of skills just by being taught courses. You need to reflect on the process of performing research to get these competencies. And that means doctoral structures should not organise taught courses on skills, but should offer, more than impose, a positive environment for students to develop their awareness of the skills they could gain by performing research without overcharging the load work, respecting their diversity and providing as much as we can, individual training, because the individual professional plan of the candidate is different from one to the other. Of course, a lot of experiments were done in the UK with the UK Grad program, and I think you know more on this one even than me - as a French guy. What's more interesting is the German set-up of transferrable skills as a condition to promote German doctoral schools of excellence. So, they joined research excellence, with research in transferrable skills, and for Germans, it's a big change.

In my university, we consider that as young professionals, what they need is a continuing training plan, and we provide that kind of plan through a series of seminars and specific workshops - no courses - lecturing and case studies by professionals or alumni of the university without these kind of exchangeable credits (ECTS), and the individual plan should be determined at the beginning of a thesis by the PhD student, endorsed by the supervisor and by the school, and followed up by the school. By that, I mean each student easily could find his way and could organise this complementary training according to its own professional project.

Of course, when we speak of transferrable skills and employability of doctors, in the academic as well as outside, in the research linked sectors as well as the sectors without any links to research, where we need doctors in a knowledge society, we have to develop the awareness of supervisors. Really this means that we need training of supervisors on the job opportunities and career development as well as on the management of the whole project. It was already organised quite currently in the UK, in the northern countries of Europe - it's more difficult in the Latin ones. And when I started in my university, they found that it was quite strange to train professors. Why is he, training professors? We are trained by nature, by definition. We don't have to be trained any more.

And finally, I was very happy because in the first series of seminars that we did that way. And of course we started with the youngest supervisors, but two of them said "But why should I stay in academy, I have a fantastic future outside university for myself?" And I said, "I win." - if they consider that they could do better outside, they will supervise correctly the PhD students, offering the possibility to go outside or to develop very interesting fascinating careers inside as professionals, because we should consider ourselves as professionals. Of course, I want also to develop awareness of recruiters and employers, and one of the best ways is to develop partnerships in our doctoral programs, in our lecturing and case studies, in the transferable skills programs, by round tables with research and business managers and recruiters. One of our questions was, "What are the targets?" At each of these EUA meetings we invited big industry of Europe - Bosch, etc - all these kinds of excellent big companies who have their own doctoral projects, their own doctoral policies. Who cares? They hire 10 - no, 100, 200 people a year, and we train in Europe thousands and thousands, or tens of thousands, of doctors. So where are the jobs? There are more in small business than in the big industries. And so what is difficult is to develop the links between universities and the SME's to better know the needs

of each partner and to try to convince them what they will gain in hiring PhD holders in their society.

So to conclude: the challenge we face in Europe as elsewhere, is of course to promote the value of doctoral training and the vital role of doctoral holders in this knowledge-based society, and mostly, as I claimed, we have a policy, a wonderful policy at the European level, but we now have to implement this policy and to prove that it works. So we have to develop evidence-based doctoral policy, including raising of awareness of imbedded transferrable skills and quality assessment.

And finally, of course, the most difficult issue, because governments and sponsors don't hear any more, is the point that we need to find funding for full-time doctoral candidates and for doctoral programs. So, at that point, to answer the increasing demand of universities in Europe to exchange and to go in-depth in the concrete aspects, not to speak any more on ideological program on doctoral policy, but just to go in the implementation of this reform, EUA considered that it was necessary to set up a platform for a change on doctoral education. But as says Barbara, "In a whole continent, with 46, 47, 48, 49, I don't know, different countries, it's much more difficult, but it's a fantastic challenge." And what we want to do at this level is really to be a membership service, or a forum of exchange of practice, of innovative practice, of problems, and to help our university members to implement their policies. And what is quite interesting is that it is not an association or group of doctoral schools, or graduate schools, but it's a membership of universities. Since we still have in Europe to insist on the fact that universities are responsible for doctoral education, for research development and for their implementation.

Thankyou

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American Graduate Education in a Competitive World

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The message of this talk is that the capacity of American universities to sustain a leading role globally in graduate education hinges crucially on our capacity continually to improve the quality of our graduate programs, to ensure access of students globally to those programs, and to sustain strong leadership in graduate schools essential to drive the necessary changes.

Are we up to this challenge? I think the answer is yes, and I will try to make the case in my remarks today. But I would like for you to be the judge. So before I start, I want to take a poll. By a show of hands, tell me: How many people believe that North American, and in particular U.S., graduate education, will continue to hold the same standing in the year 2020 as it does today? Now if a majority of you vote that the U.S. would lose ground in graduate education, I would hope to convince you that, on the contrary, we still have a fighting chance. On the other hand, if a majority of you believe that the position in the global competition that the U.S. holds today is simply immutable, I am here to tell you some things about our challenges that will shake your confidence. So let me begin.

First, I would like to talk about the historical reasons behind the North American advantage in graduate education over the past fifty years. Then, I'll share some specific challenges we face in light of the changing demographics, the globalizing talent market, the new millennial student values, and emerging understanding of accountability. I would like to say a few words about the vulnerabilities in the U.S. system in particular. And I will conclude with comments about conditions that will need to prevail if we are to deserve your vote of confidence in the future of graduate education in North America.

The source of North American graduate strength over the last fifty years

Three factors contributed to the significant advantage of North American universities in their graduate program efforts. The first is quite simply that we speak English. Indeed this has been a huge advantage as English has in the last twenty years become the language of science and engineering, and increasingly the language of all advanced study world-wide. To test just how far English has spread, we at the Council of Graduate Schools decided to do a small survey that would allow us to actually document the extent that this was true. We invited a young woman, who came to us from New Zealand via Cambridge University as an intern in 2006, to peruse the top two hundred universities measured by the *Times' Higher Education Supplement* "World University Rankings" in order to ascertain what portion of those universities located in non-English speaking countries (129) actually offered some or all of their graduate instruction in English. We found that among the top 129 institutions, 66 were entirely English speaking, 21 offered up to half of their programs in English, and only 42 of the 129 offered none. Clearly by 2006 English was fast becoming the language of graduate instruction. (Ruth Keeling, 2006, Council of Graduate Schools).

The second factor contributing to the long term success of American and Canadian graduate programs is that they exist in democratic systems with high levels of political stability and a deep commitment to sustaining the climate of free and open inquiry. Both of these are of course advantages that our Australian and New Zealand colleagues share with us. In fact, I think it would be fair to say that your graduate programs as well as ours have benefited

significantly both from the English language advantage and the political stability of our respective countries.

The third significant advantage that we have enjoyed for a number of decades in the United States is that we have a large number of very strong graduate programs, providing students, both domestic and international, access to a wide range of fields. These programs have historically been sustained by a general belief among the American public that graduate education is good for America. Graduate education to some extent has been viewed as a "public" good. Because it has been treated as a public good it has been supported to produce both variety and excellence.

Going forward, what is very clear is that the English language advantage is diminishing, and that, fortunately, democratic systems are growing around the world as political stability is increasingly seen as a prerequisite of economic growth. So these two particular advantages will not be comparative advantages for North American (or Australian) universities going forward.

What the U.S. continues to have, however, is a large system of very strong graduate programs across a wide array of fields, meeting a variety of student needs, and, to some extent, a continuing willingness on the part of the public to support this enterprise.

What are the challenges to quality going forward?

U.S. graduate schools face four challenges to sustaining quality moving forward. First is globalization of the world talent market. The second is changing U.S. demographics. The third is the emergence of new values on the part of millennial students. And the fourth has to do with the emerging understandings of accountability in America.

So let me begin with the first, the globalization of the talent market. In the past, U.S. graduate schools were simply confronted with an oversupply of international applicants. For some graduate programs in some institutions that meant more than 100 international applications for just a few slots and in others of course the ratio was much closer to 2 to 1. But the point is we have had a clear oversupply of international applications. Some international applicants were admitted and did graduate from U.S. universities. Almost everyone who came to the United States from abroad had the desire to stay.

We believe that the United States now must, and in the future will more actively have to, compete for talent globally, and this is particularly true for students pursuing science and engineering graduate programs. Students now have strong options globally and those options will continue to improve, whether we are talking about Europe, Australia, China, India, or other major regions of the world where graduate education is definitely on the move. And students these days demand more access and more convenience globally. So the very fact that the talent market is globalized, and that we have strong competition from around the world simply means that international students cannot be relied on to merely "show up" in 2020 in the same numbers that they "show up" today.

Second, demographics in the United States are changing. If you project the number of Caucasians in the labor force in the age bracket, say 20 to 64, in the period 1980-2020, you will find a 23% decline over 40 years. Growth opportunity in graduate education in the United States is entirely from the ethnic minority population which will have doubled in that same age cohort from 1980 through 2020. The problem is that Hispanics and Black Americans fall behind Caucasians in earning college degrees and currently Caucasians earn

graduate degrees at twice the rate of Latinos or African Americans. At this point there is no comprehensive plan in the United States to bridge the gap. Looking at these two factors alone, it is very clear that the United States must expand minority participation in graduate programs or else mobility will be lower in the future than it is today. (Erik Eckholm, February 20, 2008, "Higher Education Gap May Slow Economic Mobility," *New York Times*)

We must also find ways to sustain international enrolment. After a sharp decline in international applicants in 2004 and the small rebound in 2005, the total number of applications and students actually enrolling in U.S. graduate schools from around the world has increased steadily in the 2006-2007 time period. However the rate of increase is slowing and that should be a matter of some concern to U.S. graduate schools, suggesting that the surplus of strong applicants, characteristic of the past, will not hold in the future. Today the international applications fall below the 2003 level at two-thirds of American universities, and this simply means the playing field has changed.

The third challenge that we face to the quality of U.S. graduate programs going forward relates to the kinds of students who are coming to graduate school now, and the extent to which we are positioned to respond effectively to these students' interests, needs, and ways of learning. The students to whom I am referring we will call the "millennial" students. Millennial students are those born between 1982 and 1994, and they are in many ways qualitatively different from students whom we have educated in our graduate schools previously. Typically they are described as confident, visual, multi-tasking learners. They are highly technologically savvy. They tend to be very outcome focused, and in fact many of our faculty see them as demanding "customers" who want to have balanced lives, and many millennials don't want to spend endless hours in the laboratory as their predecessors did. (Lauren Pressley, retrieved from www.laurenpressley.com/projects/millennials/paper.doc Richard Sweeney, retrieved from library1.njit.edu/staff-folders/Sweeney/Millennials/Millennial-SummaryHandout.doc).

The fourth challenge to quality going forward comes from increasing and qualitatively different demands for accountability. The demands come from students who are concerned with ensuring that graduate school prepares them for the jobs they get, not for the jobs their professors have. New accountability demands come from the press who are particularly concerned with the efficiency and the efficacy of graduate programs. And finally, government in the United States is increasingly interested in developing quantitative metrics to assess the efficacy of our higher education system. While the government focus to date has primarily been on undergraduate education where our Spellings Commission has had much to say, most observers believe that it is only a matter of time until the focus settles squarely on graduate programs as well.

Strengths of the U.S. system of graduate training and research

Notwithstanding these significant challenges, U.S. graduate schools are well positioned to respond, given some unquestionable strengths. Here I would like to discuss three. The first is the fit between American culture and the system of graduate education as it has evolved. The second is the existence of a network of strong graduate schools. And third is the record of at least a decade of serious re-examination of the quality of graduate programs at both the master's and the doctoral level.

First, on the issue of fit. Historically education has been a basic tool in American society to resolve the contradictions between the "equality" promised by our democracy, and the actual economic inequalities experienced by individuals in

our market economy. (Anthony P. Carnevale, 2008, "Graduate Education and the Knowledge Economy," *Graduate Education 2020*, Council of Graduate Schools, in press) In other words it is okay to do well in America if you earn your place through education, and, in the knowledge economy, the principal arbiter of access to elite careers has been graduate and professional education. (*ibid.*) In the United States this "fit" has produced a system of graduate education that is highly competitive, that is based on meritocracy and markets, and that is focused on the development of individual talent. At its best, fit has worked to produce a robust system of graduate education that is reinforced by the culture.

The second strength in the U.S. system is a strong network of graduate schools at institutions ranging from major research universities to master's focused regional universities. Graduate schools serve as vehicles for meeting the global skills challenge. Their hallmarks are a steadfast commitment to program quality and an unshakeable belief in both diversity and the need to develop all talent. Our graduate deans in the U.S. have experience in stimulating curricular innovation. This is evidenced in the tremendous growth in interdisciplinary programs, in the development of graduate certificates, in the promulgation of what the Europeans now call transferable skills, and in the integration of electronic on-line instruction with campus-based instruction. Graduate deans in the U.S. have the capacity as well to translate the implications of the external dynamics surrounding the formation and implementation of graduate programs to internal audiences whose day-to-day experience would buffer them from these external forces. And finally, U.S. graduate deans are demonstrating an openness to global connections, a point that I will make more fully in the concluding remarks about paths forward.

The third strength of the U.S. system of graduate training is its demonstrated commitment to continuous quality improvement. Let me stop here to relate an anecdote about an experience that I had when speaking to a group of European colleagues a couple of years ago. I was giving a talk on current weaknesses as well as strengths in the U.S. graduate education enterprise, and at the end the talk, a very bright European woman in the audience came up to me and said, "Debra this was a very good talk. But the piece of advice I have for U.S. graduate education, and say this because both my husband and I received our Ph.D.s in the United States, is simply this, 'Don't change a thing!'" Well, I thanked her for her vote of confidence in U.S. doctoral education, but I reminded her that the only thing that insured U. S. graduate schools would be as strong in the future as they had been in the past is a steadfast commitment to change. In 1995 the Committee on Science and Engineering and Public Policy (COSEPUP) of the U.S. National Academy of Sciences issued a report titled "The Reshaping of Graduate Education of Scientists and Engineers." The major thrust of this report was that Ph.D. programs and master's programs as a whole had shortcomings in several areas including communication skills, teaching and mentoring abilities, and the appreciation of applied problems. It noted the graduate programs lacked the capacity to train students who worked effectively in teams, particularly in multi-disciplinary settings. (Renn Philips, April 1, 1998, cited in Betty Feetham, 2008, *Professional Development Programs for Graduate Students: Best Practice*, Council of Graduate Schools, forthcoming)

This 1995 report called for graduate schools and graduate programs to think deeply about reforming themselves. Actually a few years earlier, the Council of Graduate Schools in collaboration with the Association of American Colleges and Universities had already launched the Preparing Future Faculty (PFF) initiative. In this program, funded by private foundations, graduate schools were

encouraged to attack the problem of preparing faculty more effectively for their roles as teachers and other academic duties in institutions of the kind in which they were likely to find jobs, that is in teaching institutions and regional universities, as well as research universities. Today we find Preparing Future Faculty programs thriving at more than 45 institutions around the country with affiliate colleges and universities numbering close to 380.

Interest in the professional development of graduate students continued in a partnership between the Council of Graduate Schools and the University Continuing Education Association in which graduate deans were encouraged to think creatively about a whole range of postbaccalaureate careers and to consider seriously how graduate schools might facilitate those careers not only through full-fledged degree programs like master's degrees and Ph.D.s, but also through a variety of new kinds of certificate programs.

In 2000 continuing the energy that marked both Preparing Future Faculty (PFF) and the National Academies COSEPUP report, a project was launched at the University of Washington titled Re-envisioning the Ph.D. In this project, again privately funded, research-intensive universities, teaching-intensive universities, K-12 education, government funding bodies, foundations, professional societies, and students came together to examine the ways in which doctoral education in the United States might be improved. One of the strong recommendations coming out of this series of convenings was that robust and better professional development experiences at the doctoral level should be developed. (Feetham, 2008) Two additional reform projects, the Responsive Ph.D. Project, developed by the Woodrow Wilson National Fellowship Foundation, and the Carnegie Initiative on the Doctorate, initiated by the Carnegie Foundation for the Advancement of Teaching and Learning, similarly encouraged graduate schools across America to think deeply about the quality of the doctoral experience, and to look in particular at the way in which departmental efforts and graduate schools could work together to ensure the most successful outcome possible for students. (see Feetham, 2008)

Also at the beginning of this decade, two studies asked graduate students themselves how the quality of their experience and outcome might be improved. Chris Golde and Tom Dore produced a very interesting report titled "At Cross Purposes: What the Experience of Today's Doctoral Students Reveal about Doctoral Education," in which they reported, among many things, students' particular interest in knowing more about career outcomes and being provided with more transparency in that regard. (Chris Golde and Tom Dore, 2001, *At Cross Purposes: What the Experience of Today's Doctoral Students Reveal about Doctoral Education*, retrieved from <http://www.phd-survey.org>) Similarly the National Postdoctoral Program Survey conducted by the National Association of Graduate and Professional Students, an electronically administered on line survey, provided responses from 32,000 students. These respondents offered perspectives on everything in their graduate education from program climate to mentoring to gaps that they identified for future consideration. (See Feetham, 2008)

By 2003, it was clear that all of this work provided an enormously rich stew for creative speculation about how doctoral education might be furthered strengthened. The time had come for the Council of Graduate Schools to launch a national initiative that would result in firming up a foundation for specific best practice recommendations to U.S. graduate schools, programs, funders, and policymakers. But in order to reach this point, two things needed to happen. First we needed to identify a common empirical measure for assessing positive change. And second, in selecting that mode of measurement, we needed to locate the creative leverage point that could help unpack the mélange of issues

that had emerged in the discussion and scholarship cited above. At the Council of Graduate Schools, in discussion with many of our deans around the country, we settled on student completion and attrition rates for Ph.D. programs as the key point of leverage to ultimately generate best practice recommendations to improve the effectiveness of American Ph.D. programs.

Completion was the key because we believed that of all the issues raised in nearly a decade of our self-criticism of doctoral education the most urgent was that too few students admitted into U.S. doctoral programs actually graduated. We also took a leaf from the best selling book *Freakonomics* which noted that "there is nothing like the sheer power of numbers to scrub away layers of confusion and contradiction." (Steven D. Levitt and Stephen J. Dubner, 2005, *Freakonomics*, cited in Council of Graduate Schools, 2007, *Ph.D. Completion and Attrition: Analysis of Baseline Program Data from the Ph.D. Completion Project*) The 48 institutions involved in the Ph.D. Completion Project are broadly representative of doctoral granting institutions in the United States, and to some extent Canada. They are public and private, large and small, geographically dispersed universities, with reasonably diverse missions regarding doctoral education. And as I speak to you today, this large number of U.S. and Canadian universities are now actively engaged in experimenting with a variety of ways to improve doctoral education by improving successful student outcomes, measured at least in part by the extent to which they graduate.

I reviewed this history of reform simply to document that one of the strengths of the U.S. system of graduate education, and the Canadian system of graduate education, is that reform, particularly through the leadership of our graduate deans, is now an integral part of the enterprise and is indeed one of its major strengths.

The vulnerabilities of the system

Now you will recall that I started out by telling you that at the end of my remarks I was going to give you a chance to vote again on whether or not you thought U.S. graduate education was going to lose its position by the year 2020. So in order to ensure that you have full information, I would like to take a little bit of time, having talked about our strengths, to talk now about the vulnerabilities in the U.S. system of graduate education. And in particular, what I would like to do is focus on four major areas of vulnerability. The first has to do with the tournament nature of the culture of doctoral education; the second is the insufficient attention being paid by the faculty to the demographic transformation I described earlier. The third has to do with the transformation in the society at large from viewing graduate education as a public good to viewing graduate education as a private good. And fourth, the possible overconfidence that American research universities currently have about their location in the global rankings horserace.

The first area of vulnerability relates to the "tournament" culture that pervades many of our research doctoral programs, particularly in the fields of science and engineering. Tournament culture has been described well by Richard Freeman as one in which the winner takes all. (Richard Freeman et al, December 14, 2001, "Competition and Careers in Biosciences," *Science*, pp. 2293-2294) The focus in doctoral programs is on individual and not group outcomes, and in every situation where there is one winner, there are of course many losers. Many in the United States would agree that the tournament is the best descriptor of the culture of many of our most highly ranked doctoral programs. But there are three problems with an overreliance on the tournament culture for ensuring quality in the future. The first problem with this culture is that in a globally competitive economy, we simply cannot waste talent. And while

tournaments do complement the individualistic and meritocratic character of American society, they inevitably waste talent. The second problem with the tournament culture is that many of the most important advances in this new globally connected and wired century will depend on interdisciplinary and international research teams, and inter-sector collaboration. The tournament model undermines the development of teamwork skills that will distinguish the scholar of the 21st century from that of the last century. Finally, the millennial students described above who will populate the doctoral programs of the future simply don't like tournaments. They tend to be collaborative; they like to work in teams. While they tend to like to win, they are more aware of the consequences when others lose. Graduate programs that focus too highly on the tournament, because they involve exercising, maybe particularly unwelcoming to women and underrepresented minorities who, as I will pointed out earlier, are absolutely critical to ensuring that we have Americans of any kind going to graduate school in the future.

This provides an easy segue to the second area of vulnerability, and that is insufficient attention by our faculty to the demographic transformation that is currently underway. To be successful going forward, it is absolutely essential that U.S. graduate programs focus on both increasing the domestic participation in our programs, and on ensuring student success. We already know that there is a significant gap between aspiration and degree attainment in terms of graduate education in the United States. We know, for example, that 58% percent of undergraduate students at four-year colleges and universities indicate a desire to go on to a graduate or professional degree. Yet data from the U.S. Department of Education indicate that within 10 years of receiving an undergraduate degree, only 27% percent have actually realized those dreams. Any system of graduate education that fails to focus on actively identifying talent is not one that ensures a robust future.

The third area of vulnerability relates to the erosion of the belief that graduate education is a public good in favor of the view that it is primarily a private good. Certainly it is true that graduate education is a private good for the individuals who receive it. Labor economists tell us that American culture justifies the different life circumstances into which the market sorts workers based in large part on the cultural belief that education justifies the differences that exist in a knowledge economy. (Carnevale, 2008) For the individuals involved, education clearly does generate private rewards in the form of substantial increases in income. We know that a master's degree increases median earnings by over \$10,000 annually and a doctoral or professional degree by nearly \$30,000 to \$50,000 respectively. (Sandy Baum and Jennifer Ma, 2007, "Education Pays: The Benefits of Higher Education for Individuals and Society," College Board) But, if the resources are going to be available to fund a strong system of graduate education in the United States going forward, we need to find ways of strengthening the belief that graduate education is indeed a public good as well as a private good. This must happen at the very time when resources available for government to invest in any goods, public or private, are shrinking, not growing. This resource threat is a clear area of vulnerability.

The final area of vulnerability is intangible, but none the less real. Many faculty in our universities, and citizens in our society, are overconfident about America's leadership position in graduate education and research. This debate may be best illustrated by the current controversy currently underway about whether we are over producing (or under-producing) scientists and engineers in our country where analysts routinely decry the "over supply" of scientists and engineers. (See Michael Teitelbaum, November 6, 2007, "Testimony before the

Subcommittee on Technology and Innovation, Committee on Science and Technology, U.S. House of Representatives)

Pathways forward for all countries aspiring to leadership in graduate education

I want to conclude my remarks this afternoon by suggesting that America and Australia have a fighting chance to hold a position of leadership in graduate education in 2020. But success depends upon pursuing three paths. First, we in the U.S., and all who aspire to leadership, need to shore up domestic understanding about and belief in the public good of graduate education. We need to be able to communicate the specific contributions that graduates make to their communities, their states, the nation and indeed the world, and we need to find ways to continually strengthen the inclusiveness of the enterprise so that both historically-underrepresented populations as well as, in our case, new Americans find ways of fully benefiting from what graduate education has to offer. Additionally, we need to be able to guarantee absolutely the integrity of research through the aggressive preparation of students in the responsible conduct of research.

Second, we need to continually improve the quality of our graduate programs. In the U.S. that means we need to increase dramatically the completion rates of students and decrease the time it takes them to complete their degrees. We need to increase the transparency of graduate programs, not only with respect to the internal processes of graduate education, but even more importantly with respect to the career outcomes for students. We need to ensure that we offer the array of graduate programs that meet students' personal and professional needs, including doctoral programs, but also master's programs, particularly professional master's programs that prepare students directly for the world of work.

Third and finally all aspiring leaders need to work more aggressively than ever before to build global partnerships so that the nation's graduate schools are effectively positioned to both share with and learn from others around the world about best practices in graduate education. The Council of Graduate Schools had the opportunity to partner with the Australian DDOGS, the European University Association, the Canadian Association of Graduate Studies, and the Chinese Association of Graduate Schools when we came together in Canada to agree upon what we are now calling the Banff Principles, which are guidelines for working collaboratively in graduate education across national boundaries. (CGS website, Strategic Leaders Global Summit on Graduate Education www.cgsnet.org/?tabid=289)

If we do all of these things, I believe the U.S. and Australia have a good chance of sustaining a competitive position vis-à-vis the rest of the world. I began with a poll, asking you whether or not you believed that America would be successful in sustaining its current standing in graduate education in 2020. Let me ask that question in conclusion again. Let's take a vote!

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A Survey of Chinese Postgraduate Education

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It's my great pleasure to be here talking about an outline, a description of postgraduate education in China. First of all, I would like to give my acknowledgment to the QPR conference organisers for their kind invitation. By attending this conference, I have learned much more about postgraduate education in Australia, in New Zealand, in America and in EU. So, it's been very helpful for me.

Today my topic is postgraduate education in China. My topic includes an outline and description of Chinese education; the history of graduate education in China; the academic degree system; the requirement for an academic degree; the college system and the immediate achievement in graduate education. I also will take some time to give a brief introduction about graduate education at Shandong University.

In China the degrees are divided into two or three levels from Bachelor Degree, a Masters Degree to a Doctorate Degree. The Bachelor Degree student, we call it 'xue shi sheng'. These words in Chinese mean 'knowledgeable person' and sheng means 'student'. That is to say the student must learn to become a knowledgeable person. So that's the Bachelor Degree student.

But the 'shuo shiyanjiusheng' Master Degree student, we call it 'the student must learn to become a big knowledgeable person based on research'. So this is a kind of Master Degree student. For the Doctorate Degree student it means 'the student must learn, must have a wide or broad knowledge based on research'.

So, 'postgraduate' in Chinese means the student has to learn or study based on research. That's the Chinese meaning of a postgraduate student. So from this meaning, we can say that the students, when they want to become a postgraduate student, must do research to learn the knowledge. That's the Chinese meaning of 'postgraduate student'.

First I want to give you the outline or description of Chinese education. In China we have 1.3 billion people over 9.6 million square kilometres with 56 minorities all over China. The education system from basic school is only six years; senior school is another three years; high school is three years; and then for higher education, usually four years. Some disciplines require five years, especially for the medical field. The point is, education in China includes research degrees. The duration is usually three to four years, and the vocational degree is two to three years. So China is a big country, and so it needs a big education system!

We can divide China into three sections. From the coastline section - we call it 'East', the middle of China, and the West of the country. From north-east to the south-west, that's the famous line - west of the line occupies 64% of the land but the population only occupies 4%. But on the east, the area is about 36% but it is occupied by more than 90% of the population. According to the east, middle, west division: in the east the population occupies about 43.2% of the land, the middle occupies 28%, and the west 28%.

Secondly, I want to give you some ideas about the history of degree and graduate education. From early last century, we can find the earliest document

conferring the Master or Doctorate degree. That's the beginning of the postgraduate education in China. Before the liberation of China, we had only about 200 graduate students. After liberation, from 1950 to 1965, only 23,000 graduate students. And because of the Cultural Revolution, for ten years, graduate education was stopped and it was resumed in 1978. The first revolution related to postgraduate education was in 1981 when some postgraduate schools were established with the formal establishment of graduate education in China. From 1998 there has been a large expansion of graduate education in China. Before 1998, the number of Bachelor Degree students, Master students and Doctorate students increased very slowly, but since the beginning of this century, the number of graduate students has increased very rapidly. Last year, in the whole country, we enrolled more than 57,000 Doctoral students and more than 364,000 Master students. This year we have a plan to enrol nearly 60,000 Doctorate students and nearly 400,000 Master Degree students.

Thirdly, I want to give you some ideas about the academic degree system in China. I have mentioned that the degree system in China is similar to Western countries with a Bachelor Degree, Master Degrees and Doctoral Degrees – three degrees. Now, we have a degree for research, and the professional degree, and degree for courses (very few degrees for courses) and a Graduate Diploma and a Graduate Certificate.

In China, before the student gets the degree, some requirements are necessary. The Bachelor Degree is four to five years, and the Masters Degree two to three years, and Doctorate Degree three to five years. For Masters Degrees, more or less 36 credit scores are required, and for a doctoral degree at least 18 credit scores are necessary. And before getting that degree, there is the thesis and the thesis defence.

The Chinese government has formulated the principle categories for degree conferment and graduate education. Enacted since 1997, it includes 12 study fields covering about nearly 90 first-level disciplines, and less than 400 second-level disciplines. China confirms the Master or Doctorate Degrees according to the names of the 12 fields. Apart from academic degrees, recently the Chinese government has set out 18 professional degrees, such as the Juris Masters, the Masters of Business Administration, Public Administration, Clinical Medicine, and Education. There are about 18 professional degrees in all.

In China, if the university wants to have a postgraduate program, this right must be approved by the government because the university levels are quite different. Briefly we have two first class universities, Beijing and Qinghua University and an additional seven world famous universities. There are 38 universities which are defined as research intensive, and 56 with graduate schools. There is another project – we call it the "211 Project" - which means that during the 21th century, China will make at least 100 universities to become research intensive. Now, about 280 universities have rights to confer Doctoral degrees, and 520 universities have the right to confer Master Degrees. For the remaining 180 universities only the Bachelor Degree can be conferred.

I have mentioned that the right to confer the degrees must be approved by the Chinese Ministry of Education. The process to have the right to have a postgraduate program is that the university firstly writes an application to the Ministry of Education. The Ministry checks the talents that are proposed and gives an evaluation about their teaching or research. Following their approval the university will establish the graduate program. During the program, the Ministry of Education will give guidance to the university so they comply by the process.

As outlined earlier the distribution of the universities is uneven, with many along the coast having the right to confer PhD and Master Degree programs. In Beijing, there are more than 100 universities or institutions and there are more than 28 universities, or institutes, that have rights to confer Doctorate degrees. But in the west, very few, in Shingjai, about three, Tibet, zero and in Jinghui, only two Doctorate Degree institutions. The Masters are quite thin.

The fifth thing I want to do is to give you some information about the quality control system for postgraduate education. Because the graduate education system is quite big we need the quality control system which can be divided into two categories. One is the supporting system to quality, and the other is quality of supervision. For the supporting systems, the Chinese government encourages universities to pay much more attention to their basic construction, including the discipline, the team and also the laboratory. If universities want to have the right to confer degrees, they must pay much more attention to these three disciplines, the team and the laboratory. Also, we have three systems to guarantee the degree system. It includes the Ministry of Education, the Province, and the university. Also, we have many regulation systems to manage the degree system.

About the quality supervision, the government nearly every year makes an inspection of graduate education. In total, we have five quality evaluations related to the quality of supervision. One is the quality inspection and the evaluation attached into various disciplines. This quality inspection originated in 1986. Also we have a comprehensive level of regulation attaching to graduate school, originating since 1995. And we have quality evaluations and an excellence evaluation attached to authorised Doctorate and a Master awarding units. And we have the National Excellence 100 Doctoral Dissertation Program which has awards for 100 excellent Doctoral dissertations. This program originated in 1998. In Shandong universities, we have had 15 PhD student honoured by the National Excellence 100 Doctoral Dissertation Program. Also, we have authorised audits and the Ministry's evaluation of key decisions. There is a national review attached to the Doctorate and Masters awarding units, originating in 1989. We, the universities or institutions themselves, always check the curriculum, the mid-term examination of public education requirement, the review for the thesis and also a defence before the degree is approved. The degree and the graduate evaluation organised by the government is usually based on the careful evaluation of the institutions, helping to develop the concept of self-disciplinary or self-restriction.

Quality improvement recently came in China. One method is the 'Abroad Study Plan'. The Chinese government wants to select excellent students and send them to excellent research universities abroad to provide them with excellent professors. Every year, the Chinese government will support 5,000 to 6,000 students – all their tuition is supported by the government. This year, 6,000 graduate students will be sent to other countries. We encourage the students to study abroad for a long period of time. The Chinese government wants to have some collaboration with excellent universities abroad to give them joint degrees – one degree from the Chinese university and the other from the overseas university.

Sixth, I want to give you some ideas about the immediate achievement in Chinese education. We have established a kind of academic system with Chinese characteristics. That is, the government supported three level management systems: the Ministry of Education, Provincial Education, and the university. We also have the integration of degree management and graduate cultivation: the degree conferment auditing system, features academic review and administration, examination and approvals. Furthermore, we have

established the essential status of the Chinese Graduate Schools, in particular, a Chinese model of graduate training. While Higher Education Institutions take a major role in graduate education we have a dual system for certification: academic degree certificate (including research and professional degrees) and diploma and certificate. We have also the equivalently-qualified, off-school people who can apply for degrees. And we've also developed a quality assurance system for granting degree conferment and graduate education. Quality assurance is the core issue of graduate education and self-regulation in graduate training in institutes is strongly encouraged. Also, quality supervision from social agencies is invited. We have become in a big power in graduate training - not the quality, but the number. There's a changing environment for Doctorate students in the recent five years according to different disciplines and different fields. Engineering and Science has the majority of Doctoral and Master Degree students. China's graduate education is oriented to the Chinese macro-development, training for high level, qualified, innovative and knowledgeable graduates with problems solving talents in fields such as economic construction, scientific and technological advance, culture and education, national defence and so on.

There is increasing international status and influence in China's graduate education. According to the statistics, in 2005, more than 141,000 overseas students from 179 foreign countries and regions have come to China for the purpose of studying at Chinese colleges with 37,147 of them studying for a Bachelor degree, 4807 for a Master degree and 2304 for Doctoral degrees. And in 2006, China sent about 792,000 Chinese students to study overseas 583,000 of them are studying for the bachelor/masters/doctoral degrees, or engaging in post-doctoral research or joining a program of academic visits.

We have faced challenges in Chinese postgraduate education. Just as I have mentioned, we have many people searching for their graduate education in China. We have not enough research funds to support that. And we also face competitive globalisation, and sometimes the quality of that graduate education is not so strong.

Finally, I want to give you some impressions about Shandong University. Before 2000, there were three universities: Shandong Medical University; Shandong Technological and Engineering University; and Shandong University. In 2000, the three universities merged together to become one larger university - one of the largest universities in China. The facts and figures state, nearly 4,000 full-time staff, 959 Professors, 452 PhD supervisors, and 52,500 students of whom 12,796 are graduate students (9,700 Masters and 3,096 Doctoral students).

Also, we reflect the same changes occurring in Chinese graduate education. At the Masters and Doctoral levels, enrolments are very similar for males and females with 51% male and 49% female. For doctoral supervision, most of the PhD supervisors are in the age range from 40 to 50, as with the rest of China. We want to improve the postgraduate quality, so we now carry out a policy of 'one student, two supervisors, and three experiences' for doctoral candidates. We want students to have two supervisors and provided three chances - three experiences for the students. One student is easy to be understood, two Supervisors, besides one supervisor, we select another Supervisor from another discipline, or from out of our university - perhaps from the government or from enterprise. And the three experiences, one is to study at my university and now that we also want to send them to study for a period of time out of my university and we also encourage them to get experience abroad. Every year more than 300 graduate students are sent abroad to follow their study in an outside university, and more than 2,000 foreign students are studying at my

university, some of them for a short period of time for language learning, and some for Degrees, and about 150 at the graduate level.

Before a degree, we have examinations and we have a publication requirement, for the PhD student, they must have publications, and after finishing the thesis we have peer review of the thesis. After having passed the review, they have to pass the dissertation defence. After the defence, comes the approval process. After approval, the student can get their degree.

Thank you very much for coming to this address.

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Summing up the 2008 QPR Conference

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I first met Debra Stewart at the 'Riot at the Hyatt' – an event held in the Late Primo-arborocene era i.e., the end of the "Bush 1" era. I am hoping that there is a lesson there!

At a meeting like this, we can COLLECTIVELY see the future. Big lessons for Australian workers in the field of graduate research from our international visitors; a few shared lessons and maybe even some lessons that our international visitors might take away.

Governments often articulate big ideas, principles, Research Quality; Big Education; Research Training; Work-Ready Graduates; Funding Compacts.

These are rhetorically-powerful terms – they have been given rhetorical and discursive potency as a consequence of the places in which they've been uttered.

We need to recognise that they are free-floating signifiers with as yet unattached signifieds.

We NEED and - under this new government – we're being quite directly and sincerely invited to attach something to those signifieds.

What we've learned - the European Council of Doctoral Education is a fantastic lesson in the way in which you can occupy rhetorically-powerful unfilled terms with the kind of content we really want.

The "10 Salzburg Principles" are in precisely the right genre that government ministers can happily sign. On the other hand, the kind of material Jean Chambaz took us through yesterday morning represents serious, sophisticated, sustained academic work that gives us plans for genuine quality improvement.

Quality

"More better" Good practice or QA?

We have in the UK, Hong Kong, Peoples Republic of China, New Zealand, South Africa and Australia become excessively interested, I think, in QA; Assessment, Assurance, Audit. However, I am not so sure about Continuous Quality improvement as opposed to (periodic) quality assurance.

But then I notice that the most common reason most of us come to QPR is to learn about good practice at other universities.

Peer review and reputation and ranking are powerful influencers of continuous improvement. This links with another set of ideas that has reached maturity, I think – that Research Higher Degree is something we take **collective** responsibility for: for the quality of programs (accreditation, approval etc) and the quality of selection, and the quality of candidate experience and the quality of the work that goes out into the world.

We've also talked about this in other ways:

Communities of practice; research culture; intellectual environment, even critical mass.

That also relates to the growth of professional practice around doctoral education (e.g. the University of Western Sydney group on supervision as a professional practice). And I think one of the things that we do really well in Australia, has been to encourage the growth of identifiable cohorts of professional administrators, staff developers, student support staff, language etc. MOST NOTABLY through their involvement in events like this one.

Quantity, how much of it should we do?

I think is the emerging issue – and it was not often named. We all tell heroic stories of apparently limitless growth. The trend line that always disappears out of the top right hand edge of the screen.

How much is enough; how would we know what the right number would be?

Where do they go? I think we were all distracted by the notion that we're engaged in the hubristic project of the replacement of the species, for example the Preparing Future Faculty project.

Emerging interest – at last – in the 'where do they go' question.

There's some real opportunities for research in doctoral workforce for example the Go8 study five to seven years out.

Writing

"The best theses are the ones that get written"

From the conference it was clear that there is a growing number of strategies for making sure this happens; but at the same time, some interesting papers on ways of Conceptualising and analysing "doctoral writing work"

Ethical practices

- How we do what we do?
- Surely this is more than just Ethics Approval
- Authorship
- Examinations
- Supervision
- Research integrity
- Conflicts of interests

Reconceptualising of the boundaries between the public and private.

Debra shocked us all by revealing the scandalous fact that there are people entering graduate school who believe that work-life balance is a realistic and morally-acceptable goal!

Honours

This is largely an Australian issue, but it was played out here in the context of the Salzburg Principle that research students are early career researchers rather than 'students'. Hence we need to acknowledge the continuum of research training from Honours - if not undergraduate itself – through Higher Degree by Research, postdocs, Early Career Researchers and even senior researchers.

Research training

What is it that we do in Doctoral Education?

- about production of new knowledge; but we are also producing the producers of knowledge; producing the disseminators of knowledge; we are producing users of knowledge and consumers of knowledge.

Not just providers of training in research and for research but also training **by** research.

I heard a lot of good work in the sessions on experiential learning, embedded learning etc.

Perhaps we didn't have the discussion this time about re-envisioning the PhD;

I think we did talk about re-envisioning the outcomes of the doctoral program but not so much this time about the form of the assessable object.

- Can you have a doctorate without a major research component?
- What is the minimum research requirement
- Must there be publications; how must they be linked?
- Must it be a single & coherent piece of research?
- Must the creative object be accompanied by a more formal research product - coherent prose, logical argument, exegesis?

Completions

"Finish; why would I want to finish?"

At the 1998 QPR the West Report had just been released – since then, we've moved away from waste and attrition to completion and persistence. I think Australia has managed a real policy solution to this by producing a rational congruence around the benefits of 'finishing' the PhD. The government did this by price signals and they can produce perverse behaviour. But I think we're now talking more about persistence than about attrition.

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Papers

PhD thesis quality: Predicting examiner recommendation as one measure of thesis quality

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Abstract

In our previous work, codes developed from the text of 804 examiner reports on 301 PhD theses were factor analysed to form five separate constructs: positive summation, negative summation, formative evaluation, prescription and dialogic elements. The constructs were developed from four areas of coding – examiner and process commentary, assessable areas covered, dialogic elements and evaluative elements – found in the examiner reports. The dataset is now complete with 2121 examiner reports being available on 804 PhD theses across all discipline areas at eight Australian universities.

Since then, we have refined the coding scheme to allow us to distinguish between positive, neutral and negative comment on the assessable areas covered, and we have added these codes to the dataset. The robustness of the five constructs are now being tested against the enriched dataset. The newly-developed constructs will then be combined with a range of candidate and examiner information and entered into a regression equation as explanatory variables with examiner recommendation as the response variable. The regression equation will be multilevel with examiner reports at level 1, candidates at level 2 and discipline at level 3. The relative importance of each variable that is significant for examiner recommendation and the overall explanatory power of the model will be reported and discussed.

Background to the identification of thesis quality

In a paper based on an earlier phase of the study reported here, Bourke, Hattie & Anderson (2004) indicated that little research had been undertaken into the written assessments made of PhD theses (see, for example, such comments by Morley, Leonard & David, 2002; Mullins & Kiley, 2002; Tinkler & Jackson, 2000). However, Bourke *et al* (2004) also noted that there had been a few studies of thesis assessment based on examiner reports, citing Ballard, (1996), Hansford & Maxwell (1993), Johnston (1997), Nightingale (1984), and Pitkethly & Prosser (1995). They also pointed to a developing literature on doctoral examination with studies based either on interviews with experienced examiners (Mullins & Kiley, 2002) or on questionnaires completed by examiners (Winter, Griffiths & Green, 2000). Since that time Kiley and Mullins (2004) have also interviewed inexperienced examiners.

Since that time, the major change on the international scene with respect to information about examination of theses has been the work reported by Lovitts (2007). Lovitts asked focus groups consisting of faculty in each of 10 disciplines to characterise dissertations in their field at four different quality levels. Six different components of dissertations were identified for comment, namely Introduction, Literature review, Theory, Methods, Results/data analysis, and Discussion and conclusion. Important to the purpose of this paper, three key findings from Lovitts' work were:

- Consistency in faculty approach to characterizing the dissertation and its components within a discipline at four quality bands, suggesting that standards can be created for doctoral education (p.xiii)

- A very strong consistency in faculty characterization of dissertations within each of four quality bands across disciplines suggesting agreed-upon expectations and criteria for PhDs that approach universal standards, across disciplines (loc.cit.)
- Not all students produce dissertations of equal quality (p.xiv)

The study reported here

As useful as Lovitts' and other work that obtain information on what examiners say they do when examining theses is, the study reported here takes a more direct approach by coding and analysing the detailed content of examiner reports written on PhD theses. The content of their reports is then related to the content to the overall recommendations as to the fate of the theses made by these same examiners.

The study has a mixed methods design including qualitative textual analysis of examiner reports on theses from a wide range of discipline areas. Text codes are created from the reports and subsequently used in quantitative analyses, in the form of the proportion of each examiner report coded at each of 30 core coding categories, plus several secondary codes made up from the union and intersection of some of the core codes. Candidate, candidature and some examiner information is also incorporated into the quantitative analyses.

The five initial constructs developed previously have been re-developed with the now much larger dataset and with the inclusion of the secondary codes. The secondary codes form important components of the first two of the five constructs which have been renamed to signal their different compositions. The constructs are now named General Positive (previously Positive Summation), General Negative (previously Negative Summation), Formative Evaluation, Prescription and Dialogic Elements. The compositions of these constructs are described below.

Two types of analyses are undertaken here, both with examiner recommendation as the dependent or response variable. First a multiple regression analysis is undertaken with independent or explanatory variables consisting of the five constructs created from the text codes, all candidate and candidature variables and the examiner variables. The purpose here is to identify the set of independent variables that are significantly related to the dependent variable. The second analysis takes the form of a multilevel regression model with examiner at level 1, candidate at level 2 and discipline at level 3. The purpose here is to investigate the balance wherein variance in examiner recommendation resides between examiners, between candidates and between disciplines, and to attempt to explain the variance using the set of explanatory variables identified in the previous multiple regression analysis.

Examiner recommendations on PhD theses

In Australia, the overall recommendation on a thesis made by each examiner is normally based on five recommendation categories offered to them, although some universities also offer subdivisions of the five categories. For this study, the categories have been standardised as shown below.

- Accept the thesis as submitted (summarised as **Award**, coded 5 here)
- Invite (minor) correction (**Invite correction**, coded 4)
- Require (more significant) correction (**Require correction**, coded 3)
- Revise and resubmit for further examination (**Revise & resubmit**, coded 2)
- Not be accepted for the degree (**Fail**, coded 1)

Predicting examiner recommendation

As indicated above, first the examiner recommendation was regressed on the full set of constructs from the text codes, the candidate, candidature and examiner variables to determine which were significant. Table 1 indicates that that all five text-related constructs were significantly related to examiner recommendation, but few variables in the other categories were so related. The lists below are provided to indicate the sets of candidate and examiner variables, and the comprehensive set of candidature variables that were initially included in the regression equation.

Candidate variables

Commencing age
Gender
Native English speaker

Examiner variables

Gender
Region where located

Candidature variables

Held a scholarship
Broad Field of Study
Upgraded from research masters
Equivalent full-time candidature
Percentage of candidature full-time
Leave semesters
Entry qualification
Number of supervisors
Change of supervisor
Supervisor(s) experience
Supervisor(s) gender balance

All of the above variables were entered into a regression equation as independent variables with examiner recommendation as the dependent variable. In three cases where a variable was categorical, the variable needed to be entered as a set of dummy variables where a code of 1 indicated the candidate was in that category, and a zero when the candidate was not in that category. This applied to Broad Field of study, to entry qualification and to location of examiners.

In total, the set of significant independent variables shown in Table 1 explained almost half the variance in examiner recommendation. It should also be noted that, although significant, little variance was explained by the other variables additional to that provided by the five constructs.

Table 1: Independent variables significantly related to examiner recommendation showing their standardised regression coefficients and standard errors

DEPENDENT VARIABLE: EXAMINER RECOMMENDATION	INDEPENDENT VARIABLES	β	SE_{β}
Constructs developed from text codes R^2 (these 5 constructs) = 48.3%	General Positive	0.337	0.020
	General Negative	-0.293	0.017
	Prescription	-0.218	0.017
	Formative Instruction	-0.134	0.018
	Dialogic Elements	0.044	0.016
Candidate	Commencing age	-0.061	0.017
Broad field of study	Education	-0.049	0.017
	Science	-0.053	0.017
	Health	-0.050	0.017
Location of examiner	USA	0.043	0.016
	Asia	0.029	0.016
OVERALL $R^2 = 49.3\%$			

Clearly, the independent variables that had the strongest relationships with examiner recommendation were the constructs developed from the text codes. The strongest indicators of examiner recommendation were the General Positive and General Negative constructs which collected positive and negative codes (respectively) that included statements about the thesis as a whole or at least of significant sections of the thesis. Components of the **General Positive** construct were the positive summative and other judgments, and positive comments about the thesis scope, significance, approach taken, analysis and reporting, contribution, and coverage and utilization of the literature. The **General Negative** construct consisted of the equivalent negative comments about these same indicators.

The **Prescription** construct was the next most powerful predictor of examiner recommendation, being comprised of direct instructions by the examiners to the candidate of what should be done to the thesis to make it acceptable. In some cases this related to inaccuracy in the literature review in others to grammatical or other presentation errors. The **Formative** construct was also negatively related to examiner recommendation. When engaging in this activity, examiners were attempting to teach the candidate, and in some cases the supervisors, how to correct or improve the thesis. To a greater or lesser extent, the examiner was taking on the role of supervisor and this was the most extensive category, accounting for an average of more than 20% of the reports. Finally, personal involvement with the thesis by the examiner, as indicated by use of first person and/or a conversational style (collectively referred to as **Dialogic Elements**), were weakly but significantly and positively related to examiner recommendation. Examiners tended to lean to more 'personal' contact with candidates and supervisors with what they considered to be better theses

One candidate variable, age at commencement of candidature, was also significantly related to examiner recommendation, with a tendency for candidates who were younger on entry to receive more favourable recommendations. This relationship was not particularly strong in part because it departed somewhat from linearity. It is also of interest that having a scholarship during candidature was very marginal (scholarships almost being positive for receiving a more favourable recommendation), but failed to reach significance in the regression analyses.

Candidates in the Education, Health and Science fields received less favourable recommendations than candidates in the other fields of study. Finally, examiner location was also significantly related to examiner recommendation with examiners from the USA and from Asia giving more favourable recommendations than examiners in other locations.

Variations between examiners, candidates and fields of study

The data relating to PhD examination being reported here has a multilevel structure. At level 1 are the two or three examiner reports on each thesis. Three of the eight universities in this study ask two independent, external examiners to examine each thesis, and five use three examiners. There are 2121 examiner reports at level 1. A total of 804 theses/candidates are at level 2, and these are clustered into discipline areas at level 3. For the purposes of these analyses, disciplines have been collapsed from 10 into 7 Broad Fields of Study (BFOS), namely Agriculture (41 candidates); Arts, Humanities and Social Sciences (183); Business and Law (78); Education (84); Engineering and Built Environment (71); Health (131); and Science and IT (216).

Table 2: Distribution of variance in two models with examiner recommendation as dependent variable: The null and explanatory models

LEVEL	NULL MODEL		EXPLANATORY MODEL	
	Variance estimate	At each level %	Variance unexplained	Variance explained %
1 (Examiner)	0.7583	88.1	0.4149	45.3
2 (Candidate)	0.0986	11.4	0.0206	79.1
3 (BFOS)	0.0040	0.5	0	100
TOTAL	0.8601	100	0.4355	49.4

When the same independent variables were entered into a multilevel regression equation, essentially the same regression coefficients were obtained, and consequently are not repeated here. However, information concerning the proportional distribution of variance across the three levels of examiner, candidate and BFOS, and the extent to which the variance was explained by the analysis is provided in Table 2, and discussed below.

When the variance in examiner recommendation was considered without any attempt at explanation (as in the null model), it was found that approaching 90% of the variance was between examiners, that more than 11% was between candidates, and only half of one percent was between BFOS.

The independent variables most strongly related to examiner recommendation were four of the five constructs developed from the detailed text of examiner reports (see Table 1), and these are examiner (level 1) variables. The only level 2 variable significantly related to examiner recommendation was candidate age, and this relationship was not strong. However, the right-hand column in Table 2 indicates that the significant variables collectively explained less than half of the previously-unexplained variance between examiners (level 1) but almost 80% of this same variance between candidates (level 2).

It is of interest that, although there was a very small variance between BFOS in the null model, there were significant dummy variables representing three of the BFOS, namely Education, Science and Health. All the variance between BFOS (level 3) was explained.

Interpretations and conclusions

The overall aim of the research presented here was the dissection and assessment of PhD examination in Australia, with the intent of providing guidelines for improving thesis quality, as measured by examiner recommendation. In this paper we first determined the explanatory power of constructs developed from the textual content of examiner reports, together with candidate, candidature and examiner characteristics for examiner recommendation. We then allocated components of the overall explanation achieved to one of three levels – the examiner, the thesis (candidate), and the discipline (BFOS), before examining each in turn. We were particularly interested in explaining the extent to which examiners identified differences between theses of different quality. We now attempt to summarise the major findings and implications.

First, the strength of the relationships between the constructs developed from the text codes of examiner reports and examiner recommendations of the fate of a thesis is gratifying for the research team. It suggests that the five

constructs, particularly four of them, encompass the thrust and intent of what an examiner is doing when examining. Two of the constructs were deliberately designed to collect substantial positive and negative comments respectively, so it is no surprise that they relate strongly to the examiner recommendation. Another two constructs have negative implications but locate examiner focus in either explaining and teaching something (Formative instruction) or prescribing changes (Prescription) in their report in reaching their recommendation. The fifth construct, Dialogic elements, is more of an identifier of examiner orientation than part of the process of reaching a recommendation on the thesis, however, it is also significantly related to the recommendation.

Secondly, the lack of significant relationships between candidate and candidature variables and examiner recommendation is clear and perhaps surprising. Candidate age was the only one of many variables that was significantly, although weakly, related to the recommendation. This indicates the danger of the adoption of a policy of selecting candidates on the basis of demographic and other variables related to candidature (such as accepting only full-time enrolments) – these variables do not predict thesis quality as assessed by examiners. However, it must be recalled that all candidates in this study actually submitted a thesis for examination. Whether demographic variables would be useful in predicting which candidates would reach the stage of submission is not addressed in this paper. Another presentation at this conference (Cantwell *et al*, 2008) does, however, throw some light on this question.

There were three statistically significant differences between disciplines (measured by BFOS) in examiner recommendations. The fact of their significance is probably less important than noting that the differences were so very small as to be almost trivial (approximately half of one percent of the total variance). These initial small discipline differences were entirely removed when the examiner report information was added, indicating that examiner recommendations do not differ at discipline level. An important conclusion arising from this finding is that there is a high level of consistency in the way examiners in different disciplines examine PhD theses, in both the content of their reports and the recommendations they make. We suggest it is appropriate that PhD thesis quality, as viewed by examiners, is consistent across disciplines.

Examiners clearly are, to a large extent independent, some might say idiosyncratic, in their approaches to examining PhD theses. This has been illustrated in their lack of attention to guidelines provided by the university for which they are examining (see Mullins & Kiley, 2002; Holbrook *et al*, 2004). It is also evident here – the major component of the variance in examiner recommendations, before any explanation of differences is attempted, is between examiners rather than between candidates (or, more correctly, between theses under examination). However, when we do provide the maximum explanation available from information in this dataset, principally in the form of constructs derived from the text of examiner reports, a much greater proportion of the variance between candidates was explained than that between examiners. While something less than half of the variance in recommendations between examiners of the same thesis is explained, we are able to explain almost 80% of the variation in examiner recommendations (our measure of quality) between candidates (theses). The ability of constructs derived from the text of examiner reports to explain or predict differences in thesis quality indicates robustness in PhD examination, and suggests we could further improve supervision and examination by focussing on the content of examiner reports.

The information we currently have about the detailed content of examiner reports is being drawn on to advise research candidates and their supervisors in thesis writing and development. Consequently it is reasonable to expect that further investigation of the content and tone of the reports will lead to even more precise indicators of how examiners decide thesis quality – and these can be added to our store of knowledge to be passed on. This same knowledge should also prove to be of assistance to examiners in efforts to improve the reliability of PhD examination. Specifically, one could imagine the information being used in candidate, supervisor and even examiner workshops on PhD thesis writing and examination.

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Finding Room for Personal Integrity in Postgraduate Research in Business

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Abstract

Some tertiary institutions have adopted sets or lists of graduate qualities or generic capabilities and made these, rather than content, the aim their educational programs, including post-graduate research degrees. Some of these lists contain references to personal integrity. Whilst we agree that personal integrity is essential for full participation in professional practice, this can lead to competing and conflicting views of quality, and the assessment of integrity and commitment to ethical behaviour presents quite different challenges to assessors to those faced in the traditional examination of a PhD. It is to this latter challenge that we address our attention.

The paper has three sections. The first provides examples, from Australia and the United Kingdom, of the moves to establish sets of graduate qualities or generic capabilities, placing it in the context of wider changes in the nature of research degrees and the growing recognition of the importance of intellectual capital. This is followed by an exploration of the concept of intellectual capital, focusing particularly on the work of the Hungarian economist Sandor Kopatsy and on the important place which it gives to morality. The third section considers how ethical capacity and commitment might be developed and assessed within a postgraduate research degree.

Introduction

Conceptions of what constitutes quality in post graduate education have changed over the past decade. In some institutions there is a trend to include coursework components in research higher degrees and to greater formalization of the supervision process, and in others a move to give greater weight to intangible aspects of the learning which occurs in a research degree. Some institutions have adopted sets or lists of graduate qualities or generic capabilities and made these, rather than content, the aim their educational programs. Some of those lists contain references to personal integrity. Whilst we agree that personal integrity is essential for full participation in professional practice – a view which some institutions have always held – this can lead to competing and conflicting views of quality. Coursework and lists suggest a more quantitative approach to assessment, seemingly open and transparent, while the assessment of integrity and commitment to ethical behaviour present quite different challenges to the assessors. It is to this latter challenge that we address our attention.

The paper has three sections. The first provides examples, from Australia and the United Kingdom, of the moves to establish sets of graduate qualities or generic capabilities, placing it in the context of wider changes in the nature of research degrees and the growing recognition of the importance of intellectual capital. This is followed by an exploration of the concept of intellectual capital, focusing particularly on the work of the Hungarian economist Sandor Kopatsy and on the important place which it gives to morality. The third section

considers how such an ethical quality might be assessed within a postgraduate research degree.

The generic qualities response

Over the past decade or so there have been a number of reviews of the purpose, effectiveness and structure of the post-graduate research degree (see for instance Harman 2002, and Pearson 2005). Some reviews have been national, others local. Many were prompted by concerns about the effectiveness of research degrees in the eyes of students, graduates, employers and funding agencies, or by staffing concerns within universities. Some reviews recommended the introduction of coursework elements in those degrees where the award has traditionally been by thesis alone and others sought a greater degree of formality in the student-supervisor relationship. In business schools there has been pressure to include explicit ethics components, often in response to pressure from the main accrediting bodies – AACSB and Equis.

The responses have perhaps been as diverse as the reviews. In this section we look first at the adoption of graduate quality criteria in Australian universities and then at responses in the United Kingdom to the 2003 White Paper there.

We have not conducted a rigorous search to determine who has, or has not, gone down this path. There is a more extensive consideration in Gilbert et al (2004), and such an analysis is not the purpose of this paper. Our six examples will, however, provide evidence of the range of responses – which is sufficient to show that our theoretical considerations are relevant – and show that the practice of adopting research degree qualities is not restricted to newer institutions without long experience in the granting of research degrees.

A number, but by no means all, of the forty Australian universities have not only established sets of generic qualities for graduates but also sought to apply them to postgraduate research degrees. Six are included in this analysis. Two are long-established research intensive universities – the University of Melbourne and the University of Western Australia; two are members of the Australian Technology Network, descended in part from centres of technological education established in the nineteenth century – University of South Australia and University of Technology Sydney; and two are institutions with a more recent heritage – Charles Darwin University in the Northern Territory and Edith Cowan University in Perth.

Table 1 shows the graduate qualities – however described – at these six universities. Explicit mention of intellectual integrity, ethics, social responsibility, equity values or ethical dilemmas can be found in five of the six examples with Edith Cowan having a more general approach, aiming to produce graduates with generic skills including collaboration and teamwork.

Table 1: Qualities of ethics & integrity in research graduates in Australian universities

University of Melbourne http://ww.sgs.unimelb.edu.au/phd/enrolcandid/phd/bk/intro/attributes.html	
Qualities and skills of Melbourne doctoral graduates	14 items including A profound respect for truth and intellectual integrity, and for the ethics of research and scholarship
University of Western Australia http://www.postgraduate.uwa.edu.au/home/current/generic_skills	
Generic skills of research graduates at UWA	16 "doing" skills and 8 "being" skills including Ability and capacity at an advanced level to be ...sensitive to ethical, social, and cultural issues.
University of South Australia http://www.unisa.edu.au/resdegreees/gradquals.asp	
Research degree graduate qualities	Seven qualities, including ...committed to ethical action and social responsibility as a researcher in a discipline or professional area and as a leading citizen
University of Technology Sydney	
Statement of attributes of successful doctoral students	Three categories of attributes, each with a number of descriptors including the ones listed here. Intellectual attributes : application and reflection Professional research and research management attributes: awareness and sensitivity to ethical dilemmas Personal attributes: mature understanding of responsibility to the broader community
Charles Darwin University	
Graduate attributes Adopted May 2006	Three core attributes including Citizenship with three skills, communication, teamwork, social responsibility. The descriptor for social responsibility is: Is able to apply equity values, and has a sense of social responsibility, sustainability, and sensitivity to other peoples, cultures and the environment
Edith Cowan http://www.research.ecu.au	
Introduction to ECU's high quality higher degree by research program	The University aims to produce graduates with the knowledge ... within their discipline area complemented with generic skills of collaboration and teamwork, problem solving and communication.

In the United Kingdom the urgency of formulating a viable research strategy has been hastened by the publication of the White Paper on The Future of Higher Education (2003). Universities responded to the White Paper with different initiatives. The UK web pages we visited do not talk about ethical behaviour, personal qualities or personal growth. They primarily highlight the research calibre of academics, research ratings, research award high standards, technical support and geographical attractiveness of the campus. Once again we do not claim to have comprehensively examined all universities, but present a selection which is sufficient to support our general argument.

There are 'new route PhDs' at Exeter and Portsmouth, with a 'skills programme' at Exeter which includes workshops on presentation, interview and career management skills; taught courses at Loughborough and Portsmouth, and ethics or philosophy courses at the London Business School, Edinburgh and Warwick (for details of the website URLs see the table at the end of the reference list). That this is by no means universal is shown by the positions taken by Bristol and Nottingham Trent.

On the other hand, the University of Bristol exemplifies the content focused approach. Its mission is to continue to be research-led and to develop a number of strategic partnerships with other universities in the UK and overseas, carrying out research that is world-leading in terms of originality, significance and rigour. Similarly concentrating on content, Nottingham Trent University notes that the PhD is awarded solely on the basis of the thesis, with the criterion for the award being a significant contribution to knowledge. Nottingham Trent does draw attention to other benefits which the research degree candidate will acquire in the course of the degree, namely 'the development of skills, networks and know-how necessary to build successful careers' which is facilitated by the university's 'strong collaborative links with business, public services and external academic networks'.

With the emphasis in the UK more firmly on subject-related knowledge and research methodology, perhaps a strong personal integrity is assumed, in the apparent belief that these are sufficient to allow graduates to fulfil their true potentials in life. Indeed at Cambridge, candidates for a degree are presented to the Vice Chancellor with the attestation that they are 'suitable as much by character as by learning to proceed to the degree'.

So, in some universities at least there is a commitment that graduates will go into the world having particular capabilities, and in some cases moral capacities. In the next section we link the interest in moral capacity and integrity to the ability to generate, maintain and deliver intellectual capital. In the third section of the paper we consider how universities can have a methodology for the practice of integrity in post-graduate education, and for its assessment in post-graduate students.

The concept of intellectual capital as a basis for the research degree

Three related ideas contribute to the concept of intellectual capital and its importance in society and the economy. The transition to the information age led to the acknowledgement of the importance of the knowledge worker (Reich 1992), the gap between the value of a company measured on the stock market and that shown in its traditional accounting reports led to a recognition of the importance of intangibles in the resource theory of the firm (Barney 1991 and elsewhere), and the acceptance of the balanced scorecard (Kaplan & Norton 1992), stakeholder theory (Freeman 1998) and the triple bottom line (Elkington 1999) showed to many that business success did not lie in purely financial or technical fields. In the knowledge economy the key competitive

advantages (Drucker 2000) are creativity, problem solving, the ability to transfer knowledge, trust in success and openness to new ideas.

Organisation whether firms, communities of practice, or nations, 'are becoming dominantly repositories and coordinators of intellect' (Quinn 1992 p241), and the extent of their repository and their ability to coordinate it is their intellectual capital. 'Intellectual capital thus represents a valuable resource and a capability for action based in knowledge and knowing' (Goshal 1998). Whilst there are many definitions of intellectual capital, in general for an enterprise its value is made up of financial capital and intellectual capital, while intellectual capital includes both human capital and structural capital. Human capital is made up of the 'values, attitudes and habits of the components of the organization' while structural capital consists of the organisation's systems and culture and its customers (Sanchez-Canizares et al 2007). Social capital, the 'networks of strong, crosscutting personal relationships developed over time that provide the basis for trust, cooperation, and collective action' has been shown to be important in the development of human capital, at both individual and community levels (Goshal 1998).

Trust, openness and creativity – important elements of intellectual capital – are social competencies that can only be developed through human interaction. In academia, in business and in government, when team members work together there is a synergy, a special energy flow. This energy has two sources: it either comes from the interaction of the members or from the intellectual capital of the individuals (Laab 2007). The level and size of the synergy among team members is determined by the level of trust or distrust between the team members. The quality of the individual's synergy is determined by the individual's intellectual capital.

An acknowledgement that intellectual capital is an important outcome of the research degree can be found in the statements of most if not all of the universities we have mentioned. This may be based on a narrow view, that intellectual capital is a fancy name for knowledge, and that the creation of knowledge is the ancient purpose of the university. It may find its source in the economic view that 'knowledge is our most powerful engine of production' (Marshall 1965 p115), and a concern for the generation of intellectual property (IP). For some the broader notion of intellectual capital incorporating knowledge, human and social capital is apparent.

Kopatsy's model of intellectual capital

In this section we use Sandor Kopatsy's model of intellectual capital to show why moral education is essential to the development of intellectual capital, and to provide support for our view (and that of those institutions which have specifically included ethical elements in their graduate quality lists) that this is important, not only in research degrees, management and business schools, but in all education.

Sandor Kopatsy (www.Kopatsy.hu) is a Hungarian economist who has published several books and hundreds of journal articles on many aspects of economics including issues in agriculture, monetary policy, taxation, the role of SMEs, education and health care in the economy, although the majority of his work remains untranslated to English. He is perhaps best known in the West for his writings about the relationship of economic prosperity and social well being in society. In his 1999 conference paper *A szellemi vagyon mindennél fontosabb* (The Intellectual Capital is the most Important) he argues that intellectual capital cannot be treated and measured in the same way as tangible properties.

In Kopatsy's view social development, is the result of the harmony between society's needs and its intellectual capital. Taking a longer view than those who propose a recent movement to a knowledge economy, Kopatsy see this relationship in the growth of Western societies over the past 500 years. Intellectual capital, Kopatsy says, has four components: knowledge, morality, talent and effort. Given the nature of these components intellectual capital, whilst widely accepted as an important factor of political and economical life, cannot be treated by society in the same way as any other resource. Knowledge, morality, talent and effort cannot be purchased or acquired by someone else. They can only be employed or rented and used effectively when there is a common interest for the owner of the intellectual capital and the individual or organisation that employ it. (Knowledge here is taken to include knowing, or wisdom as well as what is often called tacit knowledge such as Newton's Laws, or the knowledge found in an engineer's handbook.)

Kopatsy claims that each of these components is equally important and when all four are present with a positive sign they can magnify and multiply each other. Thus

Intellectual Capital = Knowledge x Morality x Talent x Effort

If any of these components is missing the total intellectual capital will be zero. He claims that only the multiplication and not the sum of the components will show us the size of the Intellectual Capital. In accordance with the law of multiplication when one factor is zero the product will also be zero. In our case it means that when there is zero knowledge, zero talent or zero effort the Intellectual Capital is also zero. But it is also zero when there is zero moral intent.

Kopatsy explains the relevance of the four components in the following way:

Knowledge is only valuable for society when it appears with right morality. With wrong morality knowledge causes only harm to society. When there is no talent knowledge on its own is meaningless. Without effort one cannot achieve a lot even though there is knowledge, right morality and talent. So knowledge in itself is not a value. It is made valuable by the other three components of the equation.

Morality (Moral intent). Morality is considered to be valuable for society only when it comes with knowledge, talent and effort. Wrong intent causes damage to society. The higher the talent, the knowledge and the effort the bigger the damage when it is combined with bad moral intent.

Talent is only valuable when the owner of the talent is able to guide it by knowledge and combines it with good moral intent and effort. A society loses most when its talents are not developed properly and are not equipped with right morality and effort.

Effort has become the main virtue in modern society. Effort also includes ambition, initiative and enterprise. It is easy to accept that without effort for example it is not possible for the talent to show outstanding results.

Note that three of the four factors – knowledge, talent and effort – can only be positive as their starting point is zero. On the other hand morality can be negative as well as positive. Consequently intellectual capital can only be positive and add value to society when it is accompanied by good moral intent. On the other hand the more knowledgeable, the more talented and more diligent the individual with bad moral intent, the bigger the damage to society.

The nature of morality

Morality is the idea that some forms of behaviours are right, proper, and acceptable and that other forms of behaviours are bad or wrong, either in your own opinion or in the opinion of society (Collins, 2004). Our concern here is not with that narrow view of morality which equates it with sexual probity, but with a wider view, identifiable in society at least since the time of Socrates and Confucius, that morality is the essence of the well-lived human life.

An ethic of a particular kind is an idea or moral belief that influences the behaviour, attitudes, and philosophy of life in a group of people (Collins, 2004). The word ethic comes from the Greek 'ethos'. The verb 'etheo' means first of all to filter through, to examine something. The Greeks believed that one's destiny and journey in life can be discovered from human nature. The second meaning of the verb is to stretch toward something, to strive for something. The Greeks believed that humans were naturally moving towards the manifestation of the 'divine sketch' that the 'Gods dreamt of them' and willingly or unwillingly they had to fulfil. In this respect one behaves with morality when he gradually fulfils the 'divine dream' that was personally meant for him. Repeated activities lead to reasonably stable behaviours. This is why in certain Greek dictionaries 'ethos' means habit, manner, etiquette and so on. These meanings approach ethics through external characteristics. Although this is one sided it can be argued that the external signals the internal qualities.

A contemporary parallel can be found in the concept of communities of practice (Wenger 2000) where there are internal ways of working which produce both outputs valuable in themselves to the the wider community and internal benefits in the growth of the community of practice, benefits which MacIntyre calls 'goods internal to practices' (MacIntyre 1985).

The seventeenth century European philosopher Baruch Spinoza argues that morality is the most important manifestation of human nature. He believes that some manifestations are in line with human nature while others are opposed to it. Spinoza gives joy a supreme place in his anthropological-ethical system. Joy, he says "is man's passage from a lesser to a greater perfection. Sorrow is man's passage from a greater to a less perfection" (cited in Fromm 1997:97). In order not to decay, we must strive to approach the 'model of human nature', that is we must be optimally free, rational, active. We must become what we can be. This is to be understood as the good that is potentially inherent in our nature. Spinoza understands 'good' as "everything which we are certain of a means by which we may approach nearer and nearer to the model of human nature we have set before us"; he understands 'evil' as "on the contrary ... everything which we are certain hinders us from reaching that model. Joy is good, sorrow, sadness, gloom is bad. Joy is virtue; sadness is sin. Joy, then is what we experience in the process of growing nearer to the goal of becoming ourself" (cited in Fromm 1997:97).

The Hungarian poet Sándor Weöres explains perhaps even more clearly what it means to fulfil one's human nature and morality:

Virtue is all that is equal to the eternal measure and lifts you towards completeness; sin is all that opposes the eternal measure and distances you from completeness. One who has reached completeness becomes one with the eternal measure and has no virtue or sin any more. He becomes similar to the fire. The light is not the virtue of the fire but it is its nature. Similarly one who has achieved completeness has the eternal measure not as a virtue but as part of his nature. In completeness there is no good and bad, no merit and mistake, no reward and punishment (Weöres 2000).

Intellectual capital can only be positive that is, value to society when it is accompanied by a moral disposition and a tendency to do good. How is it that morality can have a negative sign? If morality is the essence or fulfilment of human life then one who acts against that life can be considered to have negative morality. In addition one can argue that the reluctance to do good is immoral and has a negative sign. As Dante put it (in John K Kennedy's 1963 translation) 'the hottest places in hell are reserved for those who in a period of moral crisis maintain their neutrality'.

Reluctance to do good is immoral because the individual is tempted to use his or her talent, effort and knowledge to harm, damage or destroy himself/herself or the people and nature around him or her. Someone with a bad morality is particularly dangerous to society when he/she is talented, knowledgeable and puts effort into his/her negative behaviour.

Morality and integrity are essential elements of human functioning and a component of intellectual capital. Morality is the only component of intellectual capital which can be negative.

Developing and assessing personal integrity

This final section of the paper discusses ways in which integrity, commitment to ethical action, social responsibility and other such qualities, considered by at least some universities to be present in their research degree graduates, can be developed and assessed. As we have shown, intellectual capital cannot be developed without a positive moral orientation and hence an understanding of purpose.

Some of the changes in tertiary education have been intended to develop those elements of intellectual capital which lie outside the realm of discipline knowledge. However, research degrees, and university education more broadly, frequently fail to provide an environment for exploring the broader context of human life where one could test the emerging thoughts on ethical issues, paradoxes and dilemmas of every day life. Tertiary education in its current form, including the research degree, provides plenty of opportunities for the acquisition of tangible knowledge. There is no shortage of support for those who buy into the ideology that promotes financial and material success as a measurement of human worth and value. However, tertiary education in general falls seriously short of providing opportunities for soul searching and finding purpose in life.

Character formation, the development of virtues, seems to fall outside the remit of management education (Wall, Platts & Illes 2007). This is perhaps a product of the mistaken view (Jackson, 1993) that character is formed in the family and throughout primary and secondary education and by the time one enters tertiary education profession-specific technical knowledge is all that is needed.

We are not alone in our questioning views. Various authors have called for a fundamental review of management education (see for instance Mintzberg 1994). Some have argued that traditional educational approaches are deeply rooted in a mechanistic view of management evoking the illusion of control and predictability (Berends & Glunk 2006), whereas daily experience in the workplace shows that events are not necessarily predictable or controllable (which is in accord with the principles of complexity theory (Mittleton-Kelly 2003 and elsewhere)). Even the deployment of increasingly sophisticated information and decision support systems cannot take away the need for human judgment in a social context.

Some management educators have therefore started to engage in a more serious debate as to how to prepare individuals and organisations to make sound human judgments (as regards decision making?). Most of the textbooks treat the subject of management and management development in a highly detached way, focusing on a variety of sophisticated, often quantitative techniques to yield 'optimum' solutions and often prescriptive training programmes to further the attainment of technical competencies by position holders. (It is a management development in this mould, we argue, that is conjured up by the taught courses and additional skills mentioned in many of the higher degree program statements.) This approach suggests that the manager as a person is not of primary importance to managerial effectiveness. Practice, however, suggests the opposite, and as a significant proportion of research graduates enter commerce, industry or government this is relevant for research degree programs as well as for business school courses.

Success in managerial or leadership roles depends to a great extent on the level of maturity, growth, self-awareness and personal mastery (Covey, 1992, Platts, 2003) of the individual. Universities still need to come to terms with these facts, and redesign research degrees and other aspects of the curriculum in ways which provide opportunities for self-discovery, personal development, reflection, questioning, individual growth and projects which would allow the individual to look beyond herself. The opportunity to develop and confirm these qualities are particularly crucial in research degree programmes. Research degrees are highly regarded both in organisational and social contexts. Individuals with such degrees usually enjoy a special status in the community. Their behaviour is closely observed, imitated and used as examples particularly in connection with moral and ethical dilemmas. Their actions and daily behaviour can have an energizing, positive effect or a demoralising, negative effect on others.

Experience in early postgraduate manufacturing leaders program at the University of Cambridge, shows how a close cooperation between industry, students and academia has been successful in the development of integrity and personal morality (Platts 1998). A recent review of all theses submitted by students in this program, which includes coursework, an industry project and a research thesis, show of that the workshop, led by Etsko Schuitema, author of the care and growth model of leadership (2000), was the most highly valued element of the course, and that this position was maintained over the more than ten years that the course has been run.

This shows perhaps that academia can provide a community in which postgraduate students can develop skills in reflection and moral integrity, goods internal to the practice of research and the professional life. Such a community would need to include a number of postgraduate students together with an established academic community of which they were made part. The Cambridge experience shows that it also requires active participation by supervisors in the reflective processes of the community and the support of an intensive workshop experience.

Assessment

If, ethics, integrity, equity and social responsibility are important qualities for academic and professional success, as those who have included them in the qualities which a graduate from a research degree will acquire would seem to suggest, and as many accounts of intellectual capital confirm, then how are they to be measured or assessed?

The moral elements among the qualities or skills in Table 1 take three distinct forms. Charles Darwin requires the demonstration of a technical skill, the ability

to apply equity values. Western Australia and UTS describe graduates who are sensitive to ethical, cultural and social issues. UniSA talks of graduates 'committed to ethical action and social responsibility'. The first two of these can be assessed in the same way as many other skills and qualities, although it is probably the case that in research degrees there is no direct assessment and no link between achievement of the graduate qualities and whether or not the student is awarded the degree.

The assessment of cognitive and decision making skills will provide only a partial assessment of commitment to ethical action. Many professional courses – medicine and nursing, for instance – have well developed procedures including observed clinical practice for the assessment of these aspects of students about whom they have to make a judgement before graduation or the granting of a license to practice. This is seldom the case in the research degree. UniSA goes some way in requiring that the candidate submit a final report along with the thesis, describing how the graduate qualities have been developed during the candidacy, but there is no provision for a response to the report, and it is stated quite explicitly that it is not examined, and not sent to the examiners of the thesis.

For the systematic evaluation of what are in fact the core values of professional behaviour to be done well it will need to 'include many different assessors, more than one assessment method and assessment in different settings' (Lynch et al 2004). This is unlikely in the current research degree context in most Australian and UK universities, although the opportunity for assessment may be there in those institutions where there is a close and extensive personal relationship between supervisor and student. Even then, however, there is a hesitancy on the part of many academic staff to assess the ethical elements of a student's work (Moon 1999), apart from formal instances of plagiarism. This may in part be due to recognition that the evaluation cannot adequately be done in a quantitative way (Harris 2004). It may also be due to a discomfort which arises from the probably mistaken view that such a judgement necessarily requires the assessor to give preference to his or her own set of values (Harris forthcoming). Extensive discussion regarding teaching practice in religious foundations has shown that this fear is misplaced (Delbecq 2005).

Conclusion

The nature of the research degree is changing in many institutions with new or increased emphasis on coursework, and for some the introduction of qualities or generic skills which graduates are to acquire during the candidacy. One driver of these changes has been the growing recognition of the importance of intellectual capital for both individual enterprises and society more generally. As Kopatsy and others show, this intellectual capital has an important moral component, and some universities have recognised this in the qualities they seek to instil in the course of a PhD. Further discussions and individual and institutional commitment is needed for this new phase of research degree development. On the one hand there is a growing need and demand for new knowledge creation through research degrees, on the other hand there is growing evidence of the harm that knowledge and talent can cause when it is not accompanied by right morality.

Universities need to find a way of actively providing opportunities and requirements in the curriculum for the development and confirmation of right morality and ethical behaviour. Setting out the formal links between these changed views of the research degree and intellectual capital, with its links to both the knowledge economy and moral intent, will we hope assist those who view these new requirements with hesitancy to understand them more clearly.

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London Business School	www.london.edu/programmes1189.html
The University of Edinburgh	www.managementschool.ed.ac.uk/pg_study/research_degree/phd
Warwick Business School	www.wbs.ac.uk/students/doctoral/structure.cfm
University of Bristol	www.bristol.ac.uk/research/policy/strategy/version2.html
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Strategies to Combine Generic Skills Support of Research Students and Supervisions Training

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Abstract

Over the last 12 months I have attempted to combine ECR supervision training with a program of generic skills support targeted at particular stages of candidature with the aims of encouraging collegiality, initiating the formation of peer support groups and promoting planning as follows:

1. Commencement: workshops on the development of a critical approach and the creation of a specific line of inquiry to encourage the formulation of a properly formulated research question.
2. Midphase: workshops on the various features of the writing and review process involving assignments of specific writing tasks and evaluation of particular texts.
3. Conclusion: workshops which focus on the 'bookend' chapters of the thesis and management of the final 12 months.

I discuss below how it is possible to create a "syllabus" of materials for these workshops from commonly available sources.

In the course of conducting these workshops it soon became apparent that the discussions were enormously enervated by the participation of ECRs; whose experiences of candidature had more resonance than those of someone who had to use a bundled word processing package with no sequential footnote numbering session.

Further, it also became apparent that ECRs themselves welcomed the opportunity to demonstrate the leadership skills required to (for example) co-ordinate streams of a Faculty colloquium or participate in candidature review panels.

These incidental benefits were institutionalised by a decision to increase the pool of supervisors by creating an 'ECR fast track supervision program' which enabled ECRs to become principal supervisors when they had spent a year of self-documented involvement in the conduct of the generic skills programs (rather than the path of qualifying to be a principal supervisor by supervising to completion as an associate).

Commencement

A PhD candidature in general is a complicated combination of ambition and fear; both of which are particularly accentuated at the start. The creation of a supportive collegiate atmosphere is vital to moderating the extremes of emotion and reducing the difficulties which can be caused by the 'genius in the attic' mentality where the first hiccup is more likely to become a trauma if it is unaccompanied by the realization that hiccups are a normal and inevitable feature of candidature.

There are certain questions which must be addressed in all candidatures; questions which do not go away if unanswered such as:

- What is your specific line of inquiry?

- How are you going to pursue it?
- What is the purpose of your initial reading?
- Why is it important?
- What are the ethical processes required?

Workshops around these questions, taking advantage of materials which are already in the collegiate domain are far more vibrant when sub-groups are co-ordinated by ECRs.

The conduct of these workshops (which I discuss in chapter 7 of Denholm and Evans *Supervising Doctorates Downunder* has involved reference to the following materials:

Kamler and Thomson (2006) "Writing the thesis: have we got advice for you" AARE Bruce "Supporting literature reviews: materials for supervisors to use with students" (fIRST) especially Handout 2: Characteristics of strong and weak literature reviews

Midphase

The midphase workshops focus specifically on writing because the fear and/or avoidance of the writing process is typically an impediment to progress and there are certain features of writing which lend themselves to generic skills-based activities.

Two chapters of the 'Denholm and Evans' series which I have found particularly useful are

McWilliam "Argumentation" chapter 21 of Denholm and Evans (eds) *Doctorates Downunder*

Cadman and Cargill "Providing quality advice on candidates' writing" Chapter 23 of Denholm and Evans (eds) *Supervising Doctorates Downunder*

In relation to the first of these, the table of page 186 is a useful starting point for any discussion. In particular it invariably leads to the conclusion that the first feedback relates to argument, and that the successive drafts move closer to the right hand of the page. You have to know what the argument is before you can decide whether it is supported. You have to know what the support is before you can start to discuss matters such as voice.

Conclusion

Denholm chapter 15 "Some personal obstacles to completion" in *Doctorates Downunder* is a provocative paper which can be used to generate useful self-disclosure by each candidate as to the labour-intensive useless tasks which they deploy to give the impression of activity. Obviously the confidentiality of the workshops prevents me from publishing details. It is enough to say that scanning a photocopied document so that you can print out a copy does not necessarily assist progress to completion.

A valuable and low cost half day seminar on the completion process can be easily arranged by asking ECRs to speak for 10 minutes on any one or more of the following questions:

- What would I do differently if I had my last 12 months all over again?
- What were the most important milestones in the last 12 months?

The discussion of the labour-intensive nature of the redrafting process is obviously one point which emerges repeatedly. There is one basic level on

which this discussion can be used to stress that a supervisor's detailed comments are more useful than a sphinx-like "this seems to be moving in the right direction." But once the issue of feedback is being openly discussed in a supportive atmosphere it is then possible to introduce more sophisticated concepts such as the different types of feedback which should be anticipated at different stages of the writing process.

A second feature of the conclusion phase is that every workshop concludes with an assigned task for the next meeting, which will be a reconvened workshop for those who do not self-constitute as sub-groups. Such tasks might be to prepare the abstract or the first 2 pages of the final chapter or the first page of the first chapter. In other words the tasks are ones which would have to be done anyway, but are more focused on completion than the unfortunately too prevalent practice of writing the 456th draft of the literature review.

ECR benefits

At this point one reaction might be that I have developed a highly systematized scheme of exploitation. By way of reassurance in this section I want to discuss some of the benefits to ECRs.

First the collegiality which develops between the HDR candidates is mirrored in the collegiality which evolves between ECRs. The fact that these are generic skills programs removes the Faculty and discipline silos which are an unfortunate feature of the teaching-related nature of much university activity.

Second in addition to the ostensible aim of developing the HDR candidates' research management skills, the workshops become part of ECR professional development in the discussion of questions such as publication and career strategy.

Third the conduct of the workshops leads to the evolution of leadership skills and the evolution of a research culture; which is obviously assisted to the extent to which I am joined by other members of the Professorial staff.

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Rites of Passage and Playing the Doctoral Game

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Abstract

This paper brings together the notion of 'rites of passage' (Meyer & Land, 2005), Vygotsky's Zone of Proximal Development (see Moll, 1992), and Lave and Wenger's (1991) Legitimate Peripheral Participation and applies these concepts to the idea that for many research candidates the doctoral experience is one of first approximating the behaviours of researchers, and then more specifically engaging in the behaviour adopted by fellow researchers within a particular discipline. Working through this rite of passage entails a number of developments and changes leading to a transformation in most, although not all candidates, as they become the medical research scientist or the research historian. This argument will be embedded in the work of Meyer, Land *et al* (2006) on threshold concepts and the work of Wisker *et al* on threshold concepts at the research education level.

Theories of the acquisition of threshold concepts focus on moments of challenge to students' identity where they are invited and encouraged to develop both new levels of thinking and researching and new ways of being a research student. These new levels and ways of being involve undertaking rites of passage, learning the language not merely of the subject area but of postgraduate research study, and learning to 'act' as a postgraduate researcher with the rigour and conceptual level thinking that this expects. Three case studies are focused on here of students for whom this rite of passage, this transition through the liminal state, is a struggle.

Context

The work of Meyer, Land and colleagues' (2006) on threshold concepts provides a useful framework for researching the learning and development of doctoral candidates. Much of the work on threshold concepts to date has been at the undergraduate level with a specific discipline focus. From this undergraduate work threshold concepts are generally described as having at least the following five characteristics, that is, they are:

- Transformative where the learners' views of what has been learned, and often themselves as learners, is transformed
- Integrative in that they are likely to make sense of disparate aspects of learning
- Irreversible as once understood it is probable that the concept cannot be 'un-understood'
- Bounded in that they do not explain the 'whole' of the discipline but specific and related aspects, and
- Troublesome, that is challenging, difficult to come to terms with, even counter-intuitive.

Early research suggests that there are a number of such concepts involved in learning to be a researcher (see Kiley & Wisker, 2008).

Liminality and rites of passage

Linked with the threshold concept literature is the concept of liminality which is also linked with the notion of 'rites of passage'. Turner (1979, p. 234) suggests that rites of passage are characterised by changes in 'states' and 'states' he

suggests are 'relatively fixed or stable conditions'. A change of state is a transition, even a transformation, from one state to another. This transformation, Turner (1979, p. 235) argues consists of three stages, that is separation, limen and culmination. With separation the postgraduate learner (in this case) leaves the state that she/he knew, a state that was fixed and understood. Once having separated, the learner is not in the state in which she/he was and not in the state that she/he is to become, but rather in a state of liminality. In the third stage, the transition is consummated, that is the learner is in the new state. To locate this description within the experience of the doctoral candidate who is learning to become a researcher, it is not difficult to visualise the new candidate separating from their stable, known state and entering into an ambiguous, liminal state, a state which can last for several years, culminating in the ritual consummation of examination and graduation with all the trappings of clothing, pomp and ceremony.

Meyer and Land (2006) suggest that the liminal state is illustrated by three characteristics: a transformation of 'state', a changing of 'status', and 'oscillation'. During the liminal state, what is significant in the context of this study, is the notion of 'mimicry'. Learners, prior to full understanding, are likely to mimic the language and behaviours they consider appropriate for the understanding with which they are struggling, often times even managing to graduate with an undergraduate degree still not really understanding some of the major concepts underpinning that discipline. Meyer and Land (2006, p. 24) note that:

We might speculate that a student in a 'stuck place', having glimpsed the outline of a threshold portal and perhaps only vaguely aware of what lies beyond it, but conscious of the failure to cross it, may engage in two forms of mimicry. The first is compensatory mimicry, in an assuage of self that something *is* understood—witness the novice student who rehearses what is known (but irrelevant) in learning for examinations, rather than what is required to be known for them. The second is conscious mimicry, when the student is aware that what is required is beyond grasp, other than through the mimicry of pretension.

One of the particular issues associated with the liminal state in a learning context is being "stuck". Some candidates might be "stuck" for many months, others only a few weeks, depending on what it is they are addressing. Suffice to say; while liminality is common to research candidates' approaches to threshold concepts, being stuck in ways that can be counter-productive and perhaps even destructive to self-confidence and self-esteem is not a necessary condition of liminality.

While it might be tempting to take the analogy of rite of passage further, in fact, this idea can only offer a modest insight into the possible transition of the doctoral candidate through the research education experience. Be that as it may, this modest insight might be useful to those of us working in the area of research education if we develop a proposition that suggests that:

- Research candidates are likely to experience a rite of passage as they engage in doctoral education process
- This rite of passage is likely to include three stages: separation from one's known state, entering a state of liminality, and culminating in a 'becoming' that is marked by symbolism and ritual
- The rite of passage is characterized by changes in state and in status, as well as oscillation, often referred to as being "stuck"
- Learners, while in this state are likely to mimic the behaviours that they consider appropriate and which they consider demonstrate understanding.

Zone of proximal development and legitimate peripheral participation

If one considers that research candidates, at least to some extent, are in a state of transition then the question that needs to be asked is, how do they learn to move through that state and reach the culminating state of transformation? The work of Vygotsky's (1978) Zone of Proximal Development and Lave and Wenger's (1991) work on Legitimate Peripheral Participation provide an insight into how candidates might learn to operate within the culture of research education. Lonner and Malpass (1994, p. 89) suggest that:

Culture is analogous to knowing "the rules of the game". When one becomes socialized (through rule-governed learning and child-rearing practices) and enculturated (through subtle information learning) in a specific society, he or she has learned a complex set of explicit, as well as implicit, rules concerning how he or she should behave among his or her fellows who share the same culture by virtue of being raised under the same rules.

The Zone of Proximal Development is described as 'the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers' (Vygotsky, 1978, p. 86). Furthermore, Vygotsky (p. 157) argued that 'Collaboration with another person, either an adult or a more competent peer, and in the zone of proximal development leads to development in culturally appropriate ways'.

The notion of collaboration with peers as a means of learning and developing leads to the work on Legitimate Peripheral Participation (LPP). First coined by Lave and Wenger (1991) the term is used to describe how a community of practice accepts newcomers and how through varying levels of participation these newcomers develop to become "core" practitioners within the community. LPP therefore involves modification, even transformation of the individual and transformation of the community. Wenger (1998) suggests that the terms legitimate and peripheral were used quite explicitly as they were seen as ways in which the community can be modified. By "peripheral" the authors were referring to the levels of intensity, risk, support and possible error-making which the newcomer chooses to engage as they move closer to the "core" or not. "Legitimate" refers to the level of legitimacy that current members of the community offer to the potential "full" member.

As with liminality and rites of passage, the Zone of Proximal Development and Legitimate Peripheral Participation literature provide us with a framework that might assist in supporting candidates undertaking research degrees.

Research candidates are likely to engage in learning and transformation if:

- They are engaged in learning environments where they can be supported by peers and those already in the "zone" in moving from novice to expert, or newcomer to core member
- Learners in these settings modify the intensity with which they engage to suit their levels of risk taking and engagement
- Candidates are engaged in "learning the rules" but not in any didactic manner but rather by participating with peers and others within the environment
- Through participation it is likely that newcomers not only transform themselves but also transform the group.

Conclusion

The notions of Zone of Proximal Development and Legitimate Peripheral Participation might help with some insight. As Vygotsky argued, a peer already in the 'zone' is often in a very good position to assist in culturally appropriate ways with becoming more expert in areas of learning. Similarly, collaboration with peers through communities of practice where groups accept newcomers to become "core" practitioners offers rich areas of possibility.

Hence, one might ask:

- To what extent is the identification of threshold concepts at the research level required to assist in candidate development and understanding?
- What might be the critical factors in assisting candidates to identify their learning needs?
- How might institutions, departments, individual supervisors and candidates develop learning environments which enable effective peer learning?
- How might institutions, departments, individual supervisors support candidates in this important work?

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Evaluating Doctoral Supervision: Qualitative Steps and Emerging Issues

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Abstract

In the context of intensifying accountability requirements for academic work, there are increasing pressures on individual supervisors, departments and universities to evaluate the quality of doctoral supervision. Existing evaluation tools are focused at departmental rather than individual level and are mostly quantitative in nature. Evaluation for supervisors is usually limited to reflective self-assessment and peer critique from fellow supervising academics. It has been notoriously difficult to elicit sustained feedback from doctoral students regarding their experiences of working with an individual supervisor, for ethical and practical reasons. This paper describes the development of an online survey instrument that draws on qualitative methods to elicit sustained reflective commentary from doctoral students, in an anonymous format, about their experiences of supervision. The paper describes the development and trialling of the survey, named the RSFS, illustrates the outcomes of these trials, and raises a number of critical issues for further exploration and debate.

Introduction

This paper discusses a case study of the development of a survey instrument for evaluating an individual academic's supervision practice, from the perspective of their students. We begin the paper by situating this initiative within the circumstances of the contemporary university in Australia that have led to an increasing demand for the evaluation of research degree supervision. Supervision remains a mysterious and private part of academic work – one that is arguably still the least visible, least accountable and least articulable (see eg Manathunga 2005). This presents an anomaly and a problem in a variety of ways in an era of audit and performativity, not the least of which is the problem experienced by an academic in giving an account of their supervision practice in a way that is recognisable and 'calculable'.

The survey instrument discussed in this paper was designed to meet a particular need, to provide detailed feedback for individual supervisors on their practice. According to published literature on doctoral supervision evaluation, this need remains largely unmet in the field, particularly given that other instruments are quantitative or focused at departmental level. The survey discussed here, in contrast, has been designed to promote reflection in both supervisors and the students who complete it.

In the remainder of this paper, we describe the initial development, trialling and re-design of the survey, which we have provisionally titled the 'research students' feedback survey', or RSFS. A small number of supervisors have participated in the trials during 2007. They have used the survey for a variety of purposes: for formative or developmental feedback and, in some cases, to provide evidence of the quality of their supervision for purposes of promotion and institutional teaching awards. The trials revealed the potential of the survey for providing supervisors with valuable formative feedback and insight into students' experiences of supervision. They also raised issues and tensions between the formative dimensions and the use by supervisors of the data as evidence for accountability and for recognition and reward of supervision.

The paper describes the key features of the instrument and then outlines some of the issues raised. These include the implications of the use of a qualitative tool for institutional policies and procedures, as well as the intellectual and pedagogical challenges that have arisen in the design, as well as in the trialling and re-design of the RSFS to this point.

The Australian context for evaluation of postgraduate supervision

The design and initial use of the RSFS has occurred at the end of a decade of significant change in the governance of university teaching in Australia, where 'teaching' refers to coursework provision at undergraduate and postgraduate levels. A decade ago, the level of attention paid to Course Experience Questionnaire (CEQ) results varied considerably, voluntary student feedback systems were common, and institutions varied widely in the extent to which they attended to evidence related to teaching in processes for recognising and rewarding academics. In part as a result of Learning and Teaching Performance Fund requirements, Australian universities now pay much closer attention to CEQ results, have systematic internal processes for student evaluations of teaching, and are required to make public how evidence related to teaching is recognised within their promotion processes.

The university where the RSFS was developed introduced a computerised central student feedback on coursework teaching system in 1988 and has revised the system several times. A decade ago, in 1998, the standard subject survey for coursework teaching was based on a subject-level version of the CEQ, which focused on students' perceptions of aspects of the learning environment, and included 5 open-ended questions. Teachers were encouraged to participate voluntarily and use the data for improvement and, optionally, as evidence for recognition and reward. Over the decade since then, the questionnaire changed to one focused on assessing student satisfaction with aspects of teaching and subjects, with only 2 open-ended questions. Teachers are now required to use the student surveys in a minimum number of classes per year and to provide survey data as evidence for performance reviews and promotion.

Providing similar evidence has been much more difficult for academics whose major or only teaching responsibilities involved postgraduate supervision. In institutional and policy terms, recognition of supervision is a difficult and ambiguous matter and there are many ways in which supervision remains a hidden and occluded activity. There has been a history of privacy in the predominantly one-to-one relationship between a supervisor and a student, especially in the social sciences in Australia. This has now been well documented, and many attempts have been made to problematise and intervene in this state of affairs. To take just one symptomatic example of this literature, Manathunga (2005) writes of the need for professional development for supervisors in order to 'turn the light on a private space'. In the sciences, too, the essentially implicit nature of the actual pedagogy of supervision can be hidden in the culture of casual everyday encounters between students and supervisors who are directors and members of research teams (eg Pearson, Cowan & Liston, 2008/in press).

In terms of institutional governance, supervision is similarly invisible and elusive as a category of academic work. Academic workloads and other forms of recognition for supervision are highly variable, partly because supervision falls neatly into neither 'teaching' nor 'research' management portfolios, which are the typical paths through which universities govern and fund academic work. At a time when both teaching and research are subjected to increasingly intensified institutional and state gaze and control, supervision remains

curiously aloof and untouched by normative agendas, notwithstanding the pressures for meeting required targets for research degree completions. Accountability measures such as numbers and rates of completion remain at one remove from the actual practice of supervision, the day-to-day interactions and transactions that constitute a largely non-negotiated, implicit, one-to-one experience.

Further, when academics need to account for their work in supervision, the normal channels for Quality Assurance are not available or relevant. At Faculty level, there are two common QA tools for seeking feedback from research students. The national Postgraduate Research Experience Questionnaire (PREQ) is used for feedback from recently graduated students, and parallels the Course Experience Questionnaire (CEQ) used for coursework graduates. While it contains some questions about the experience of supervision, there is no data at the level of individual supervisors. The same issue occurs with the institutional Research Student Satisfaction Survey, a survey that focuses on current students' satisfaction with aspects of broader university experience. However, the Student Feedback Survey used for evaluation of individual coursework teaching and subjects has no equivalent for research students to give feedback on supervision. Experienced supervisors especially can often find themselves with little or no evidence of the quality of the work that makes up vast majority of their teaching practice.

How then, can the quality of academic supervision be determined? How can students provide insight into their experiences of working with a supervisor? How can the risks associated with an exercise that sought to address this absence be understood and managed? These are substantial dilemmas for both systems and for the academics that work in them. What counts as accountability in measuring and judging doctoral supervision is manifestly inadequate to the task of either quality assurance and improvement or of individual performance and development planning, recognition and reward.

What is available in the literature?

Literature on evaluation of research degree supervision is perhaps not surprisingly sparse. This would seem to be consistent with the general culture of privacy and attachments to academic freedom that seem to accrete around supervision long after they have been removed from most or all other aspects of daily academic work. In the past decade, there has been a burgeoning of research and publication about postgraduate supervision and research education more generally, there is still little that addresses fundamental conceptual questions concerning what it is that pedagogical practices are producing. And there is a marked paucity of material that addresses how such practices might be evaluated.

'Effective supervision' has for the past decade or so been considered a critical issue in students' satisfaction with their postgraduate experience and the successful completion of their degree (Pearson & Kayrooz, 2004). In Australia, increased government emphasis on 'timely completion' of research degrees has produced a range of measures within universities for monitoring and managing candidature, and for developing and enhancing the practices of supervision. There is a tacit acknowledgement of the critical relationship between the quality of supervision and completion rates, at the same time as a reluctance to systematically intervene in the governance of these practices – for example through mandated 'training', accreditation, or evaluation. Almost exclusively, the response by the sector and by individual universities to the increased pressures to improve completion rates has been to provide programs for

professional development of supervisors, which are by and large discretionary (eg Pearson & Brew 2002, Manathunga 2005).

This approach has to date left largely intact the private and discretionary nature of supervision work itself. A corollary has been that neither supervisors nor their students have ready access to a public discourse for explicit reflexive work on the pedagogy they are co-producing. Pearson and Kayrooz (2004) report on the development of an instrument for evaluating supervision in which supervisors can reflect critically on their practice. The 'Reflective Supervisor Questionnaire', or RSQ, provides a research-based instrument with which research supervisors can interpret feedback from students and colleagues on specified elements of supervision. They thereby provide a conceptual framework for describing the operational domain of postgraduate research supervisory practice. For them this framework construes research supervisory practice as a 'facilitative process involving educational tasks and activities that comprise the work of supervision' (page 99).

Pearson and Kayrooz, in turn, draw on earlier work that raised issues for the evaluation of supervision. For example, in Australia, writing almost a decade ago Aspland, Edwards, O'Leary and Ryan (1999) reported both a limited literature on evaluation of supervision and little evidence systematic practices for collecting student feedback on supervision. Evaluation practices that they identified in Australian universities focused on broad institutional experiences of supervision rather than on approaches that would enable supervisors to reflect on and improve their practice. Aspland et al's response to this lack was to produce a suite of three quantitative questionnaires, intended to be used flexibly and primarily for dialogue between individual students and their supervisors. The first, modified from Moses (1985), focused on expectations of supervision, and the second on perceptions of the student's skill development. The third, called the Student Evaluation of Postgraduate Supervision (SEPS) focused on departmental support for the student and five dimensions of supervisory practice: guidance, interpersonal communication, feedback, expertise and professional development. There was also a miscellaneous section.

A broader overview of the approaches described in the literature revealed a range of approaches to evaluation including: the quantitative instruments described above; approaches that focus on the departmental level (for example the SPORS tool developed by the University of Western Australia); tools for students and supervisors to reflect on their expectations (eg Moses, 1995; Aspland et al, 1999); tools for students to reflect on their level of development (Gurr, 2001, Aspland et al, 1999); and a case study approach for supervisors to reflect on their own practice (Brew & Peseta, 2004). There appears to be an absence of qualitative approaches that enable students to reflect and provide formative feedback to supervisors about the aspects of supervision that are important to them, within a well-informed framework.

Development of the RSFS

Although development of the current version of the RSFS began in 2007, the history of development goes back almost a decade. In 1998, the authors collaborated with another colleague from the university's academic development unit (ADU) to design and administer a survey to assist one of us (AL) to gain feedback from students on her supervision. The survey was based on an articulation of AL's supervisory philosophy and practice. It consisted of open-ended questions in which students were invited to reflect on their understandings of what it means to do a PhD and the role of writing in their research, the role of the supervisor in developing these understandings, the

nature of teaching that occurs in supervision and the students' experiences of different aspects of the supervisory relationship and how these worked for them. To provide a level of confidentiality for students, JMc emailed the survey and a cover letter to each student then compiled the responses after removing individual names.

Responses to the survey were extremely rich and it was not unusual for students to write 3-4 pages of reflection on their experiences. Several students commented on the value of completing the evaluation for their own learning, or apologised that the survey had been returned late because of the time it took for them to think through their responses.

Development of the current version of the RSFS first version began with a conversation when AL again approached JMc in 2007 to discuss possibilities for evaluating her supervision and designing an evaluation approach that could be used by others. The initial design was influenced by a number of considerations, both philosophical and practical. We sought to develop an approach that could provide individual supervisors with useful information for personal feedback and improvement, and also provide evidence of the quality of supervision for institutional performance and recognition processes such as promotion and awards. Following the earlier experience, we also wanted the survey to have pedagogical value for the students who completed it. These considerations influenced the choice of a predominantly qualitative approach to the RSFS. We also recognised that there were inherent dilemmas in seeking to evaluate individual supervision in a context in which there was a strong desire to develop support for research students' learning and experiences beyond the supervisory relationship. We will return to this dilemma in the next section of the paper.

In designing the questions for the survey, we were conscious of the general literature on supervisory practices and the need for the survey to be useable by others. As with the previous survey, the questions were strongly informed by AL's research on postgraduate supervision and her own supervision pedagogy. However, we also explored in particular the potential of the survey and dimensions of supervisory practice developed by Pearson and Kayrooz (2004). Although their approach was quantitative, their questionnaire had been tested across a range of disciplines and they had noted the potential value of their questionnaire as a reflective tool for supervisors. Broad aspects of their dimensions, such as the distinctions between supporting the research, managing the candidature and assisting students to become part of broader research communities were consistent with pedagogical principles advocated by AL, although there were also some differences.

The first version of the RSFS (designed and trialled in August 2007) represented an adaptation of AL's published work (eg Boud & Lee 2005), informed by aspects of the Pearson and Kayrooz (2004) survey. 4 broad questions were asked, each followed by a series of dot points to prompt students on aspects that they might consider. The broad questions were:

- How would you describe your work with your principal supervisor in developing, refining, designing and conducting your research?
- How would you describe the role of your supervisor in managing the stages of the research and your candidature?
- How would you describe the role of your supervisor in assisting you to build the intellectual communities relevant for your research? This might include other students in your Faculty, within the university or elsewhere, as well as academic and professional networks of people working in the area of your research

- How would you describe your interactions with your supervisor in assisting you to develop a reflexive awareness of the process of undertaking a doctorate?

In addition, there was a section for general comments and 2 quantitative questions asking students to rate, on a 5-point scale, their satisfaction with the supervisor's supervision and with their experience as a research student in the Faculty. These questions were designed to mirror the questions on satisfaction with teaching and the subject that are asked on the institutions coursework surveys. Students were also invited to comment on the questionnaire and its use.

The initial version of the survey and approaches to trialling were discussed with the then Dean of the Graduate School, who provided feedback and agreed to lend support in presenting the survey as an approach to providing evidence for promotion. The trialling and development process then followed several cycles of feedback. The first version was trialled by three supervisors and feedback was sought from students. The trial was then debriefed by the participants and developers, resulting in a second version. This version was taken to a University-wide research supervisor discussion forum for feedback and modified further to a third version, which was taken to the University Graduate School Board and a Science research committee. This version is now available for further trialling within the university.

Version 1: Trial and evaluation

Three supervisors participated in an initial trial of the survey: AL, a colleague from the same Faculty and a colleague from a different Faculty. All three were experienced supervisors who had at least 5 students who could be invited to respond and all three were planning to apply for promotion at the time of the trial. A number of issues were considered prior to the trial, and remain ongoing issues for consideration. How we dealt with those issues is considered briefly below and will be explored in more depth in the discussion.

Evaluation of the trial involved seeking feedback and consultation from a range of sources. Feedback was sought from students who participated in the trial. Trial participants, survey developers and the Dean of the University Graduate School (UGS) held a roundtable debrief and reflection. Following this, some revisions were made to the questionnaire with broader use by supervisors in mind.

This initial debrief was followed by a UGS supervisor forum in which supervisors from a range of disciplines around the university were invited to a broader discussion on evaluation of supervision. Following these discussions, a revised version of the survey was taken to the UGS Board for further discussion and support. As the trial participants had been from Humanities and Education disciplines, the survey was also sent to a Faculty of Science research group for additional feedback.

The overall feedback on the RSFS was positive from all sources. However, a few specific issues emerged. Some have been addressed in revisions of the questionnaire while others are ongoing

Students' responses to the questionnaire

Almost all of the students who were sent the trial questionnaire completed it, a very unusual response rate for an online survey. The students gave highly reflective feedback, and many gave extensive responses covering several

pages. Specific comments about the questionnaire were largely favourable and constructive:

It is concise and covers the different aspects of the research process and personal relationship with supervisor.

Several students commented on its value as a tool for their own reflection on supervision.

The prompts beneath the questions were useful and overall the survey encouraged me to think critically about the supervision process.

Students appeared to appreciate the opportunity to give feedback in ways other than the six-monthly progress reports that are seen and signed by their supervisors. One suggested that the questionnaire be used more often, noting that:

Students are required to report on their progress however they are not always given an opportunity to anonymously report on their experience of their supervision.

Of particular interest was the comment by one student about the normative nature of the questionnaire:

The question prompts tend to be read as examples across a range of 'good practice' in supervision (which may be what you intended). However, they have the effect of normalizing responses. If the respondent wishes to differentiate between an ordinary supervisor (good) and extremely good supervisor (very good indeed) this becomes difficult. It might be useful to ask the respondent to articulate activities central to good supervision practice but also activities and experiences that were positively extraordinary.

This issue was also raised by staff, albeit with a different focus, and will be picked up further in the discussion.

Most students' responses suggested that they could distinguish between the different dimensions of supervision that underpin the questions. However, some expressed a perception of duplication. Subsequent revisions have, we hope, addressed this.

Debrief by trial participants and developers

Trial participants perceived that students' responses on the trial version were insightful, reflective and gave them valuable feedback. All were satisfied with the overall process and perceived that the survey could be used more widely by supervisors. The debrief discussion focused around identifying any modifications that needed to be made to the survey and the issues that needed to be addressed to enable wider use in the university

Issues of use across a wider range of disciplines

As the survey had been strongly based on the philosophy of one supervisor, albeit a scholarly and highly informed one, one aspect of the discussion focused on issues that might be too specific to the philosophies, practices and language used in the trial participants' disciplines. In particular, we focused on the question:

- How would you describe your interactions with your supervisor in assisting you to develop a reflexive awareness of the process of undertaking a doctorate?

One issue was that the concept of reflexivity was seen as one that might be unfamiliar to students from science and technology disciplines. However, reflexive awareness of the doctoral process was also seen as one of a broader set of awareness's or capabilities that students might be expected to develop through the process of doing a research degree. After some discussion, the question wording was broadened to:

Developing doctoral (or research masters) capabilities

How would you describe the role of your Principal Supervisor in assisting you to develop your capabilities as a person who graduates with this level of qualification?

In the light of the generality of this question, it is useful to also include here the prompt questions, designed to elicit reflexive commentary on this question of capability development:

Aspects about which you may comment include:

- encouraging a questioning attitude towards theoretical and methodological issues
- encouraging critical discussion of research practice
- encouraging reflection on the development of your research and its location in the field
- encouraging reflection on your development as a researcher and the choices that you are making about the focus and development of your research
- encouraging the development of skills for employability or career advancement
- understanding and developing the wider capabilities of graduates with this qualification (eg problem definition, writing, project management)
- other

Issues of student anonymity and risk

All participants in the trial considered it to be important to protect the anonymity of students who responded, so some decisions needed to be made about a minimum number of students that a supervisor would need to have before using the survey. After some discussion, we decided on five students. Five was chosen as a minimum as a trade-off between enabling more supervisors to potentially use the survey and affording adequate protection for individual students. It is also the minimum number that will be reported from coursework surveys.

Some trial participants were uncertain whether there was any number that would protect student anonymity, as they perceived that the intensity and duration of supervisory relationship and their familiarity with students' writing meant that it would be easy to identify responses. However, the trial experience revealed that this could not be done with any certainty. In fact one participant noted that a response that was believed to have come from a particular student proved not to have done so. Our experience ten years ago had also suggested that identification is not as easy as supervisors might suppose, although the perception of identification remains a concern.

While student anonymity is also a concern in student evaluations of coursework teaching, the risks are not as great. Within the current institutional context, students typically evaluate teaching towards the end of a subject, are part of a class group and are informed that the feedback will not be returned to the teacher until the assessment period is completed. With evaluation of supervision, we saw it as important to enable supervisors to gain feedback from

students who were in the middle of their research degrees as well as from those who had graduated. Graduated students may still feel 'at risk' in commenting on supervision if their anonymity is not protected, as past supervisors may be current or future colleagues, referees or ongoing mentors for those they have supervised.

Furthermore, with small numbers there is a possibility that self-identification by one student would increase the chance that others would become recognisable. We saw it as important to advise students not to identify themselves, even if they wished to do so.

Survey administration and perceptions of credibility

The administrative process for the trial was as similar as possible to the process used for online student coursework surveys. The trial survey was administered online. The university's quality unit set up individual online surveys and sent each trial participant the URL for their survey. A standard email was developed requesting participation in the survey and explaining how the results would be compiled. All three trial participants used this email to send the participation request and survey URL to current research students with more than one year's experience with the supervisor and recently graduated students. Students then completed the online survey anonymously. The results were automatically compiled by the survey tool and were not accessible to the supervisors until staff from the planning unit had closed off the survey. Compiled results were then sent to supervisors as pdf files.

There were several reasons for this process, but there are also some ongoing issues to be resolved. We perceived that independent administration through the quality unit afforded greater protection for students when evaluating individual supervision. Also, we hoped that the quantitative results could be seen as having similar credibility for promotion to the results of coursework surveys administered in a similar way. However, there was one important difference that remains an issue for survey administration. Online coursework surveys require the teacher to email the survey URL to students, but this typically takes place at the class level through the learning management system, rather than by individual inclusion of each student in an email (although the latter would be possible too). In the case of the RSFS, there is no equivalent centralised process for emailing current students and recent graduates of a particular supervisor. Only supervisors had access to reliable email addresses for both their current students and recent graduates. This raises the perception of the survey being more open to bias. The issue of how students might be emailed independently of supervisors is under discussion but has not been resolved.

Version 2: Feedback from the staff forum

While the RSFS was modified after the trial with the aim of making it more applicable for supervisors from across the disciplines, we expected that some disciplinary concerns would be raised at the university-wide supervisor forum. Surprisingly, there were few comments that could be interpreted as representing disciplinary rather than individual concerns. One Science supervisor queried whether it was really designed for the Humanities, as a quantitative approach might be preferred in his discipline, but others from similar disciplines did not share this concern. Participants in the forum were also mostly accepting of the four dimensions of the supervisory role implied by the questions.

The major discipline-related issue came from an academic from creative and media arts who expressed concern that the term 'research' and the identity as a

'researcher' would not necessarily be accepted by students in creative arts doctoral or masters programs, compared with those in PhD programs.

Other issues that were expressed as disciplinary concerns by individuals could alternatively be interpreted as aspects of those supervisors' philosophy and practice that differed from the philosophy that underpins the RSFS. For example one supervisor from the Sciences commented that in his field it was not the role of the supervisor to provide intellectual challenge (one of the prompting statements under question 1) but rather that students should find their own challenge. The same person noted that the inclusion of questions on the research community implied a particular approach to supervision that contrasted with the goal of setting up semi-autonomous projects for students.

Much of the discussion in the forum focused on similar issues to those that had been discussed by the trial participants and/or the students. Supervisors also discussed the normative implications of the questionnaire but, unlike the student quoted above, they were concerned about the extent to which the questionnaire encouraged feedback on aspects of 'good' supervisory practice but did not allow sufficient scope for feedback on poor supervision.

Initial consultation with promotion committees

At the time of RSFS development, institutional promotion policies had recently been amended to require all applicants to present evidence of feedback on a representative selection of their teaching, in a standardised report provided by the quality unit. The report is provided as an attachment to the application and is additional to the application page limit. As the standard report was based on coursework surveys, the 'representative selection' could not include postgraduate supervision. An alternative was clearly needed for academics whose teaching consists entirely, or almost entirely, of individual postgraduate supervision and group activities that supported postgraduates in their candidature. This is particularly the case for promotion to Associate Professor and Professor, as applicants for these levels are more likely to have broader experience of supervision.

Following the trial, initial steps were taken towards having the RSFS recognised as an approach to providing valid evidence of supervision for promotion, particularly since all three trial participants intended to apply. The Dean of the University Graduate School wrote to the chair of the current promotion committee round, advising of the RSFS development and seeking the views of the committee towards the instrument. As the trial participants had used the instrument, but other supervisors had not yet had the opportunity, the Dean's email offered several options as to how committees might recognise results from the RSFS in the trial round and in the future when it was more widely available.

The chair of the promotion committee recognised that the RSFS would be a valuable development when fully in place and agreed to circulate a briefing note to committee members and seek feedback. As expected given the trial participation, applicants were able to use the material within their applications (as would be the case for any 'non-standard' evidence) but were not able to provide the results as a separate attachment. Following further development of the questionnaire, and its wider availability, we hope to have it accepted more fully.

Discussion

The design and trial of this survey have raised a number of conceptual and methodological issues that are worthy of mention here, although the full

implications of these issues are the topic of a second paper. This current paper is a report of a work in progress, as the issues raised are significant and far-reaching, and we believe that a canvassing of some of them for purposes of dialogue and debate is valuable and worthwhile.

The first and perhaps most difficult of these questions concerns the nature of the evidence gathered through such a survey. Put simply, what is this survey evidence of? Students willingly participated in the exercise and explicitly wrote of its value for them in exploring and articulating their experiences. Yet within the students' own responses is the implicit critique of the normative nature of the questioning. As one student noted, the question prompts tended to read as examples of 'good practice', hence making it difficult to differentiate between 'good' and 'extraordinary'. From the opposite perspective, some supervisors were concerned about the extent to which the questionnaire led respondents to write of 'good' supervisory practice but did not allow sufficient scope for feedback on poor supervision.

These issues are inherent in the design process itself, and draw attention to a perhaps more fundamental issue of the tensions in the survey's attempt to address a dual purpose: to provide feedback for purposes of performance management and career progression and to offer an opportunity for reflection on pedagogical practice for purposes of learning and improvement for both students and their supervisors. Such tensions may not be resolved but we believe the potential value in opening spaces for sustained reflection on pedagogical practices and relationships rewards the struggle to manage these tensions.

The second issue we draw attention to is again a design issue, albeit of a different order. It concerns the tension between the actual pedagogical principles being articulated in the questions, which emphasise community and network-building and promote a distributed form of pedagogy, and the imperative for an individual supervision relationship to be the target of the survey. This tension is a structural one, at the heart of the dilemmas and contradictions of the current field of supervisory practice and its institutional forms of governance. The imperative that drove us to work with and through these tensions is the pressure to make supervision practice visible and calculable, in an environment in which what is not measurable cannot be assessed in the economies of value through which universities are governed. Here the design tensions of inviting comment from students about the pedagogical practices of an individual supervisor who in turn expresses a value of a distributed pedagogy cannot easily be resolved. They are apparent in the third and fourth major question, which ask respondents to reflect on the role the supervisor has played in building intellectual communities and developing broader capabilities.

The third and final issue we raise in concluding this paper is that of the role of such a survey in the university's performativity agenda. As we noted at the beginning, we were motivated to develop this instrument for two purposes: first, for the personal purpose of rendering visible and accountable a significant aspect of academic practice that has not been easily captured in an individual's academic performance. A strong focus on research degree supervision was at risk of not being 'calculable' in ways that mattered for purposes of recognition and reward. Beyond this rather instrumental need, however, lies a set of dilemmas about how this can be done in a way that does not reduce its complexity to absurdity. There are always risks in playing the performativity game and it can seem simpler in some ways to avoid such entanglements and the dilemmas that inevitably arise, especially when the culture of privacy in doctoral work coalesces with genuine understandings of the complexity of

knowledge work at this level. However, we have made decisions at different stages in this process to proceed in a pursuit of legitimising the work of supervision as serious academic work and we remain interested in further exploring the consequences of doing so in the way this intervention is allowing us to do.

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Getting Wiki with It: Creating an Online Research Community with Social Software

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Abstract

The terms 'Social software' and 'social networking tools' refer to web applications that enable participants to store information, share this information and interact with other users. Nowadays, on the net, we are inundated with social software opportunities of all types; commercial, non profit, educational and some more slippery combinations of the three. All these sites enable participants to store information, share this information and, though the way they use the site, have the opportunity to make meaningful connections with others.

This paper reports on a project that exploring the possibility of making an 'online social network' for research candidates. This project has grown out of the 'Egradschool' (www.egradschool.com.au) – a collaborative effort of the 5 ATN Universities to provide their candidates and supervisors with online research education. In this paper I explore some of the existing social software sites available on the internet and note their strengths and weaknesses in relation to the needs of ATN research students. I provide the results of a short survey of candidates on what 'social software' they currently use and what they might like to have the ATN provide. At the end of the paper I provide a list of what I see as critical success factors for building and sustaining an online research community.

What is social software?

Social software, or 'web 2.0', consists of web applications that allow users to have a more interactive experience with a web site, up to and including being able to contribute content. Currently the most well known examples of social software in use are sites like Facebook, MySpace, YouTube and Wikipedia. Social software can cater to a pastime or product (such as eBay.com or Amazon.com) or be centred on the user and what they have to contribute (such as MySpace.com or Facebook.com). Social software can also be in the form of 'collaborative software'; these are tools such as wikis, blogs and other tools that enable people to work together online.

For the purposes of this paper I will define three main types of social networking sites that have developed to date: interest or product related sites, user profiling sites and collaborative knowledge building sites.

An *interest or product related site* develops community by giving people a forum in which to discuss and share information about a specific topic or interest. The tight focus of many of these sites enables users to easily identify those people who have similar interests, make contact with them and thus develop a meaningful ongoing dialogue. A good example of such a site is 'Librarything.com' (see below) which enables people to catalogue their book collections online. Once they have uploaded information about their book collections, users can tag their books, rate them, run statistical analyses and provide reviews (this process is sometimes referred to as 'folksonomy'). The Librarything site enables users to identify and contact those other members who have similar collections and provides them with the ability to join discussion

groups related to the literature they are interested in. Other interest or product related sites might be constructed around news and information feeds. There could be said to be an excess of news and information on the web, so sites like Slashdot.com provide a way for users to 'sift' this information by reading reviews. The software allows the large pool of user to vote on other user's contributions, thereby allowing certain reviewers to develop into 'trusted sources'.

User profiling sites are explicitly designed to allow the user themselves to provide the 'content'. Most of these sites allow participants to build a personal public or semi-public profile and manage their relationships with others; dating sites are the most obvious manifestation of this approach. The two most successful (non-dating) examples of this kind of site in recent times are Myspace.com and Facebook.com. Both these sites enable users to build an informative profile, add photos and other documents and join discussion groups. Another example of this sort of interaction model is LinkedIn.com, which is designed to help manage professional networks by facilitating new professional contacts, giving users the ability to ask questions of these networks (as a large knowledge base) and providing users with very specific job hunting tools. User profiling sites are increasingly popular, although it could be argued (looking at the demographic information of the users) that these sites have a greater take up with younger users (below 30).

The last category is *collaborative knowledge building sites*. On these sites users can freely contribute their knowledge (usually in the form of writing, but sometimes with videos, 3d models and images) and together build a knowledge database. The most obvious example of this is wikipedia, which was intended as a free and changeable form of a more traditional encyclopaedia. Educational institutions have also employed this wiki based collaborative model; below I include information about the Open University's latest initiative in this area called 'open learn'. A slightly different form of this knowledge building occurs in massive multiplayer online games such as Second Life and World of Warcraft (WoW). Although both these examples are explicitly constructed as games, second life in particular shows how community knowledge building does not just have to be in the form of text, but can also take the form of 3D digital objects and animations.

Of the three types identified here, the knowledge building sites are of particular interest for thinking about an online community of post graduate candidates because they demonstrate ways in which the creation of these communities can coincide with educational activities and objectives.

Some examples of online social networking sites

Below is a selective review of a number of sites which actively employ social software and the features that make them attractive for their communities.

Collaborative Knowledge Building Sites:

<http://openlearn.open.ac.uk/>

The Open University in the UK has developed 'The Learning Space' for online education and interaction based around some of their existing course content. The site is open to anyone inside or outside of its registered student cohort who has access to the internet. It is run on a wiki platform which allows users to access comment on and selectively alter the content while providing free access to a selection of Open University Courses. In addition it provides access to activities, noticeboards, instant messaging, knowledge maps and journaling software. The accompanying site 'The Learning Lab' allows users to download

and upload content so that they can 'remix and reuse' the existing Open University content and provide it back to the university if they wish. Of all of the sites reviewed in this paper this one offers the most potential as a model for a researcher network as it combines educational content with user interaction and self directed online learning. The following features are notable:

- Access to educational content developed by Open University – there are many courses online, all of which are covered by the creative commons share attribution share a like licence.
- Flash Meeting: a 'one click conferencing tool' that allows instant video conferencing between people connected to the internet who have webcams. There is no extra downloading required and no special technical expertise to use the feature, which removes many of the barriers on this kind of participation.
- Learning Journal: This online notebook can be used to make notes on material as it is accessed and share those notes with others if you wish to. It creates a single online space to house research notes that can be accessed from any internet able computer and allows users to cut and paste these writings into other documents.
- Knowledge Maps: This area uses 'Compendium', a visual mapping tool to help to keep track of information generated as you read through content – it is not unlike an online sketch book where you can make notes on ideas, record important references, connect concepts and arguments and share these thoughts with others.

www.wikipedia.org

This (in)famous knowledge database is the best known wiki in the world. Wikis are web pages that can be edited by designated groups of users who can overwrite or comment on each other's work or upload images, sound or video. The most powerful aspect of a wiki is the ability for words on pages to automatically become links to other pages; in this way information can be yoked together by the strategic use of language. Wikipedia highlights all the features of wiki that make it a good online collaboration tool.

- Buy-in is easy: altering pages is straight forward and the interface is clean and simple.
- Content is rich (if not always reliable). It is a reasonable starting point for finding out about a topic and getting to other sources of information (which was its explicit design intention)
- Discussion areas are clearly linked to topics so allows individuals with similar interests to have conversations if they wish to.
- The wiki can be adapted to other uses – for instance pages can be added which have some personal value to the user, like a menu from a favourite restaurant
- Search functions are powerful, links to other relevant content are easy to access

<http://secondlife.com/>

Second Life is a Massive Multi Player world where participants can own and manipulate 'real estate' and their own virtual bodies (avatars). There has been some take up of second life in the university sector in Australia. RMIT University has at least two 'islands', one owned by the school of creative media and the other owned by the architecture school, where undergraduate students can build and explore content. In terms of teaching Harvard law school has one

(non compulsory) course where discussions, lectures and 'office time' are conducted online (<http://blogs.law.harvard.edu/cyberone/>).

Product or Interest focussed sites:

www.librarything.com

'Librarything' is an example of a pastime or object centred social software application. It is a book cataloguing site where users can store information your book collection online, organise it in various ways and share the contents of their library with others. It has several powerful features that make this an attractive site for sustained community participation:

- Easy cataloguing of books – the full detail of books can be entered by typing in the ISBN number. Librarything then tracks the book through the Amazon.com catalogue (or others as defined by the user) and adds the publishing details and a picture of the cover. The cataloguing function is useful enough to be a reason to subscribe to the site.
- Users can search easily through their library and rate the book using a star rating system. The star rating system is linked to all the other user data to create a 'one click' recommendation system – by clicking on the cover of the book in your library catalogue you are given 20 recommendations based on an aggregate of other user data.
- Librarything is an 'opt-in' system in that you can set a desired level of privacy over your data, letting only certain friends see it or leaving it open to the world. If you allow others to see your collection they can create an RSS feed to keep a watch on your library to see what you have added.
- Library thing gives users the ability to create metadata – for example you can add labels to further sort your library and run statistics tracking. Labels generate 'tag clouds' allowing the users to see at a glance how much of any particular genre of book they have.
- In library thing it is easy to create group discussion based on shared interests. Users can easily find out which other people own the same or similar books and provides a number of avenues for contacting them. The social interaction is therefore mediated through the books themselves rather than being based on personal information.

<http://www.citeulike.org/>

CiteUlike is an Online referencing system, a bit like Endnote, that enables users to compile a reference library, rate papers and export the citations into other bibliographic software. It is a powerful referencing tool because:

- Unlike Endnote it frees your references from being 'located' on a particular hard drive and thus is accessible to scholars who tend to move between locations. Users can upload PDFs of papers and store them here so that they can be accessed from any internet connected computer
- Users can review papers and access the reviews of others. Reviews are aggregated so that it is easy to get a sense of what a community of interested people think about a paper.
- The tagging system allows for the generation of 'tag clouds' (similar to librarything) in this case the tag clouds are shared by the community and 'unfold' as you click through labels to reveal a finer grain of information.
- Users can keep a watch on what others are reading by setting up an RSS feed of 'watched readers'

User Profiling Sites:

www.facebook.com

Like MySpace, FaceBook provides anyone who joins with an easily constructible online presence, an area where they can upload pictures and information, as well as numerous ways of making connections with other community members. Features that make Facebook attractive are:

- It is easy to become part of multiple networks. For example anyone with an RMIT email address is automatically enrolled in the RMIT Facebook network and from there can easily find people to enrol as 'friends')
- Each user's 'homepage' allows them to show personal information, but allows for access to be restricted to certain groups of people.
- There are several sections that allow people to make contact with each other, such as 'The wall' – a public notice board area which is attached to the user's profile or the notes page which is like a virtual version of passing notes in class.
- Users can create photo galleries and share them with selected people who in turn can comment on the images.
- There is a market place, which operates a bit like ebay.com, but is for selling and exchange within a particular community
- Users can easily create groups that can share information, discussion boards and write each other 'notes'. There are also wiki-like tools which can be used for online collaboration.
- The 'poke' function is a 'low involvement' way to contact people, allowing users to make initial contact in a networked environment without having to commit themselves or the other person to a more in depth conversation
- The directory function on facebook is a better way to locate people within the network than most university directories as users can use other things they know about that person to track them down.
- Developers can write applications to use in facebook to extend or augment existing functionality – for instance there is a version of a librarything like cataloguing system with the 'ibook' function.
- There is a sense of immediacy and 'co-presence' while using facebook – you can see what your friends are doing, listening to, talking to and reading amongst other things. Communication is multi-channel and happening at different speeds from instant messaging to long term conversations and the exchange of in-jokes.

www.linkedin.com

'Linked in' is a networking site dedicated to professional networking. On it users can list a profile of themselves and the type of work they are looking for and/or business contacts they might be interested in making. Some interesting features of this site are:

- Online resume building facility enables users to create annotated work histories
- The recommendations facility enables a form of online personal reference to be recorded next to the user's work history
- Ways to visualise and access the network of people created by all the people that they user may have professional or personal links with.

What do candidates want?

The number of failed attempts at creating community on the internet has shown that it is not enough to provide people with tools and expect the community to grow automatically, the tools have to be sympathetic to the needs and desires

of target audience and enable them to make connections with others in meaningful ways. Generally online communities formed by 'bottom up' processes have the most chance of long term success (Johnson, 2001); such processes allow participants to make connections in their community through the activities they choose to participate in. Identity is important – exactly what and how much you show to others depends on how you understand your membership in the community and what tools the software gives you to participate in and express that membership.

In order to gauge what candidates might want from an online networking resource we conducted an informal survey of RMIT's research candidate community¹, asking them the following four questions:

1. Do you use any 'social networking' sites online? If so which ones and why do you use them? (examples of social networking sites are: www.facebook.com, www.myspace.com , www.linkedin.com , second life etc)
2. Do you use any online bibliographic or library software online? If so which ones and why do you use them? (examples of bibliographic software are: www.citeulike.com , www.librarything.com or the user profiles on www.amazon.com)
3. Do you use any online photo gallery software? (examples are: www.flickr.com. www.photobucket.com etc)
4. If RMIT was to provide you with a site to connect with your research colleagues, what features and tools would you like to see?

Of the 42 candidates who replied to the survey, all said they used social networking tools, 48% used Facebook, 27% used LinkedIn; the remaining 25% was shared equally between Yahoo Groups, Google Groups, Multiply.com, Second Life, Ringo and Xing. The high usage of Facebook was connected to the fact that there were others there that the person already knew or had some sort of relationship with; LinkedIn was clearly used as a professional networking tool as it is explicitly designed to aid job hunting.

When asked about bibliographic software such as LibraryThing or citeUlike, most people referred instead to the databases that they used to find relevant articles for their research. The question was perhaps a little confusing as 'library software' could have been construed as databases by some. This indicates that knowledge about this software is not as wide spread as knowledge about social profile software like facebook.

Many people used photo gallery sites. The most commonly used was Flickr at 59% followed by Google's Picasa at 17% with the remaining 24% evenly spread amongst photobucket, kodakgallery and snapfish. Many of the respondents emphasized that they did not use the sites for research purposes, but to share photos and videos with family and friends.

Many of the respondents were enthusiastic about the idea of being provided with the opportunity to network with other research candidates online. The reasons given for this interest in online interaction were: the difficulties candidates had experienced when attempting to make connections with others because of distance (for example off campus students); time constraints (like part time study); or their position in a niche area of study. Most of the interest

¹ The survey was conducted via an email questionnaire sent to the research candidates email list at RMIT.

in contacting others was related to finding those researching in similar topics or areas and beginning a dialogue. Ideas for how this dialogue could be conducted included: discussion forums, chat, mailing lists, online presentations and seminars, keyword tag clouds (to cluster candidates for searching through the database), broadcasting events, trading resources (particularly lab equipment or time), file storage and transfer capabilities and photo gallery software.

There was some interest in what could be termed 'knowledge sharing and building activities' like recommending papers to others, jointly building FAQs or lists of expert answers, tips for finding resources and collaborating with others on papers. Some interest was expressed in an ability to publish papers online and most said they would like to be able to put up a profile of themselves and their research interests. Surprisingly, most candidates seemed to be unaware of such databases and referencing aids like citeulike; many confused these with the library's online journal databases or services like Google scholar. One student commented that these sorts of online aids might be much more useful with better wireless access on campus.

It should be noted that a few candidates expressed disinterest or suspicion at the idea of an online community. Some suggested that they would be too busy with their research to participate in such a community; others commented that they preferred face to face contact and would not like to see attempts to replace such opportunities (such as RMIT's research discussion forums) replaced with online forums. Others said they were worried about privacy issues and were unsure about how much of their research they would be willing to communicate (particularly those who were working on grants with commercially sensitive information). Anxiety existed in relation to using an interface that was 'complicated', with some candidates claiming they were 'too old' to learn new ways of operating on the computer. Many candidates expressed concern at the idea that a network would be restricted to ATN, or even Australian researchers, as they were eager to make contact with anyone in their discipline or field, wherever they were located.

Designing an online community

Donald Schön once pointed out that the good designer knows what sort of questions to ask; they do not start out by asking 'how do we build a ship?', but 'what sort of ship shall we build?' To take on a project of this size and scale involves implementing a content management system (CMS). Any CMS will provide a user friendly front end to a large database of online content; allowing site administrators to manage large websites and roll out collaboratively built content, including text, sound and images. Many CMS's have plug-in applications that enhance the interactivity for site visitors. For instance, booking a plane ticket online can involve interacting with some form of CMS to find out details of available flights and give the site your payment details. Other CMS's allow visitors to house their own content on the site and have access to tools like blogs, wikis, forums and chat software.

However, deciding what sort is not easy or straightforward. These days there are a large number of CMSs that are built and maintained by both private companies and communities of open source developers. Private companies, such as Microsoft, provide CMS software that is fully supported and documented. But these are costly compared to open source systems and suffer from 'product rigidity' because they do not have the advantage of being constantly tinkered with and improved by a community of volunteer software developers (including researchers based at universities throughout the world). The open source systems are also free to download and use, although some are

supported and maintained better than others. A good example of a CMS built by a vibrant development community is 'Joomla' (www.joomla.org).

Making the decision as to what CMS to deploy is akin to building a house: there are a lot of options, but what will suit best depends on negotiating site, budget, aesthetics and user requirements. Doing a full analysis of the available CMS options is beyond the scope of this paper; suffice to say that there are a range of other issues that need to be considered before choosing the specific software to use. But before these specific issues are addressed, two key questions need to be answered:

- How can we make it interesting so that we can create critical mass? (there's no network without people)
- What scale is it going to be? (who is going to have access and for how long?)

The way these two questions are answered will have implications for the provision of necessary resources (technical and people), institutional processes (particularly those around intellectual property and risk management) and funding models. In the last part of this paper I will attempt to sketch out some answers to these two questions.

How do we make it interesting?

Developing community online is easy, but sustaining it is difficult. As already noted, sites with a lot of members and sustained community interest provide value to their users and keep them interested in participating. Successful online communities don't always have to tap into existing interpersonal networks (such as family and friends) but they do need to provide sensible ways in which people can interact with each other through the content that the site is built around.

An online research network should therefore allow candidates to do things, together and apart, that are related to their activities as researchers. CiteULike is a good example of an application that ties together an academic community: it provides value through helping to keep references in order and accessible, while giving participants a way of building links with others who have interests in common. In the case of the ATN the existing e-gradschool there is existing research education content has the potential to attract candidates and build interest in accessing and participating in the other things the site might have to offer. Open University's site suggests a way in which content can be linked with participation, while allowing ways for that content to grow and be enriched with increased community participation.

The key issue here, which candidates have already picked up on in their feedback, is being able to easily make contact with people in whose research you have a genuine interest and who, therefore, might be interested in your own. 'Folksonomy' features, like the ability to cluster researchers in 'clouds' generated by the application keywords and tags to data, would be one way to help others to find others that they want to connect with. Careful consideration should be given to ways in which contact can be made, for example Facebook's concept of the 'wall' provides a low risk way of making contact with another person when the 'rules' for the appropriate way of meeting others are uncertain.

What scale should it be?

Deciding on the scale and extent of the network has many implications. Candidates at RMIT that we surveyed highlighted that they would like to be part of a large community, where there is the potential to encounter members who share highly specialised interests and expertise. Of course, extending the

network and allowing candidates to invite people from outside of the ATN has implications for costs, but being too restrictive risks not allowing the network to gain the critical mass it needs to make it come alive.

There are approximately 1500 research candidates currently enrolled in higher degrees at RMIT University. RMIT currently has the largest cohort of all the ATN universities, so a conservative estimate of the total number of candidates that may have access to an ATN wide network at any one time would be 6000; if supervisors were included² there is potentially another 2500 users or more, making a total conservative initial estimate of 10, 500 users. This scale of network will require substantial ongoing infrastructure management and financial commitment.

The second issue worth raising here is should the network allow for growth or remain stable? Communities have memories, how their history is handled is important. The nature of the network will depend a lot on how this issue of scale and access is addressed – cutting candidates off when they have completed has the advantage of keeping numbers relatively constant, but diminishes the potential to develop a deeper and richer community of experienced researchers that newcomers could interact with.

Conclusion

In summary, there are many tools available with which to build an ATN wide online research candidate network and a number of potential models already existing to inform its shape, but a more detailed study, particularly of stakeholder interest, needs to be undertaken before its exact specifications can be determined. It is dangerous to assume that the internet provides an easy and cheap alternative to face to face contact with students. By thinking carefully through the project we can avoid providing (and investing large sums of money in) an online service that candidates don't really want or need.

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I would like to note the contribution of my colleagues Lyn Campbell at the University of Melbourne and James Harley at RMIT University to the ideas I have developed in this paper. Lyn has done a number of projects exploring how a sense of co-presence can be incorporated into online education communities and is currently working on a PhD in this area. James (<http://www.jamesharley.net.au>) is interested in Web 2.0 applications and is also in the process of finishing his PhD in the field. I would also like to thank Felicity Jones, Anitra Nottingham, Luke Mewburn, Catherine Truscott, and Andrew Van der stock for technical advice.

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² During the presentation of this paper at QPR 2008 Margaret Kiley pointed out that there may be unexpected issues with allowing supervisors with their 'authoritative voice' into the network. This is complicated by the fact that, at RMIT at least, there are supervisors are also research candidates.

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Australian Doctoral Graduates: where are they going?

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Introduction

Traditionally considered preparation for an academic career, more than half of Australia's doctoral graduates gain employment outside university settings, a proportion which has been increasing steadily since the early 1990s. This paper reports on preliminary findings of a study on the outcomes of Australian doctoral education. It discusses the initial findings of our analysis of Australian doctoral graduates from 2000-2005 in terms of employment trends over a six year period, type of employer, as well as variations based on type of university (Group of Eight, Innovative Research University, Technology University, Regional). It then takes a snapshot of employment within the higher education industry sector for the period 2002-2004. The findings provoke questions about the quality and relevance of the doctorate for non-academic employment and careers.

Literature, background, context

Internationally there is a considerable body of research on processes within doctoral education. More recently studies on doctoral outcomes, in particular on initial or early career employment, have been emerging in the United States (<http://depts.washington.edu/coe/cirge>; Nerad et al 2007), Germany (Enders, 2002; 2004), France (Paul & Perret, 1999) and Holland (Hulshof et al, 1996 cited in Enders, 2004). The need for systematic data collection on doctoral outcomes and careers is recognised as an important contribution to our understanding of the development of doctoral education (EUA, 2007). Further, the OECD is increasingly focusing on labour market characteristics and mobility of doctoral graduates (Auriol, 2007; OECD, 2004).

These international trends are reflected nationally. Federal government policy focus since the turn of the century has increasingly emphasized outcomes, with important funding changes to universities for research degree students reflecting this outcomes prominence. However, research on outcomes is still in an emergent stage. An early pilot study of PhD first destinations was undertaken in the late 1990s (ARC, 1999). This analysis of doctoral destinations between 1994 and 1998 showed that academic employment as a first destination had decreased from 47% to 33% (ARC, 1999). A decrease in the number of academic positions during the 1990s is only a partial explanation for this trend since the numbers of enrolled and completing doctoral students quadrupled in the period 1990-2004 (DEET, 1992; DETYA, 1998; DEST, 2005). Most recently the employment outcomes of doctoral graduates, 5-7 years post graduation, from Australia's Group of Eight (Go8) universities have been studied (University of Queensland Social Research Centre, 2007).

The aim of the present study is to identify the initial employment outcomes of doctoral graduates from all Australian universities for the period 2000-2005. This is the first stage of a larger study of Australian doctoral outcomes and provides the context for intensive follow-up through interviews with key stakeholders in the subsequent research stages. We report findings of our analysis in terms of employment trends and their consistency over a six year period, type of employer, as well as variations based on type of university. We then provide a snapshot of employment within the higher education industry sector for the period 2002-2004, in order to provide a more detailed understanding of initial graduate employment in this industry.

Research approach and method

Our analysis is based on the national Graduate Destinations Survey (GDS) data for 2000-2005. The survey, undertaken since the 1980s, is voluntary and collects data on employment status, employer and type of work six months after student graduation. Thus the survey data represent a longstanding, systematic collection at national level, providing reliability and continuity for comparative purposes. The survey is however, voluntary and the data provide a snapshot of employment six months following graduation and are not designed to inform on longer term employment or career path patterns. In this respect our study differs from the US studies (Nerad et al., 2007) and the recent Go8 study (University of Queensland Social Research Centre, 2007), but is similar to the Enders (2002; 2004) study of German doctoral graduates.

The analysis is undertaken across individual years to provide an overview of employment destination trends for a six year period. Further analysis is undertaken across four types or categories of university.

Our four fold categorisation of Australian universities adopts the well known typology of Group of Eight (Go8), Australian Technology Network (ATN), Innovative Research Universities (IRU) and has added a fourth, Regional Universities (Regional) leaving 11 'others'. Universities comprising the first three categories are self-selected, formal groupings. The fourth category consists of six universities which can be characterised by their location as outer-metropolitan or in a large regional centre outside of the main cities. Together, the universities in these four groupings account for the 25 universities graduating 94% of Australian doctorates each year. The 11 remaining universities, which we have classified as 'other', each graduate fewer than 30 doctorates annually. Thus, based on 2005 doctoral completion numbers the Go8 graduated 2,932 (or 57%) doctorates representing, the ATN graduated 612 (or 12%), the IRU graduated 671 (13%) and the Regional group graduated 614 (12%) of Australia's doctoral graduates.

Given the voluntary nature of the GDS it is important to consider graduate response rates to the survey which can fluctuate annually and by institution. The number of annual doctoral graduates nationally is 3,500-5,000 in the period of our analysis and around half of all graduates respond to the GDS annually, providing a large dataset. Research on non-respondents undertaken by the GCA indicates that the respondent sample is generally representative of the population and unbiased at the national level (GCA, 2006).

Overview of initial employment outcomes, 2000-2005

The data provide information on four broad types of employers: government (including Commonwealth, State and local), education (comprising higher education, schools and other), private sector and self-employed, and, not-for-profit. In the six year period (see Table 1) there has been a gradual decline in

government employment, from 29% of graduates in 2000 to 22% in 2005. Employment within education has however increased from 44% to 54% of graduates. There has been fairly stable employment in the private sector of 15-22% of graduates in this period. This represents an increase from the earlier study which showed 10-15% employment in the private sector (ARC, 1999).

Table 1: Broad Employer Type: 2002-2005

Type of Employer	2005	2004	2003	2002	2001	2000
Government	22%	26%	26%	26%	25%	29%
Education	54%	53%	51%	54%	49%	44%
Private & self-employed	19%	15%	18%	17%	22%	20%
Non-profit & 'other'	5%	6%	5%	3%	4%	7%
Total (N)	2216	2384	1840	1643	1390	1570

% = in each university type by employer type

Analysis of the data by university type shows that graduates from Go8 and ATN universities decreased in government employment as their first destination, while IRU graduates increased in government employment. There was, however, a steep drop in government employment by graduates of the Regional category, from 36% to 19% in 2005. Analysis of 2006 data will tell whether this is a continuing trend.

A more detailed picture emerges when employment destination is analysed by industry type. The greatest percentages of doctoral graduates are employed in the higher education industry (45%), other education (8%), finance industry (9%) and health (9%). Analysis by major industry type (2002-2004) generally reflects proportions of graduates from each of the four university types. Thus, around 60% of Go8 graduates and under 20% for each of the other university groups gain employment in each of these sectors. This pattern holds for the higher education and health industry sectors with some individual year variations for the IRU category. Data for 2004 show a drop in employment of graduates from the Regional category in these two industry sectors. These fluctuations in the detailed three year analysis highlight the importance of examining longer term trends.

Higher Education Industry Sector Employment Snapshot, 2002-2004

Of particular interest to many stakeholders is the pattern and development of employment within the higher education sector. The earlier study (ARC, 1999) had shown that between 1994 and 1998 academic employment as a first destination had decreased from 47% to 33%. The higher education sector provides employment in a number of different types of appointments: academic (i.e. teaching and research positions); research only; teaching only; general administrative and technical positions. Table 2 shows the appointments across this variety of positions.

Within the higher education sector 55% of graduates obtain employment in academic positions with the next highest group (38%) employed in research only appointments. Only 1% are in teaching only appointments while administrative and technical appointments represent 5% of graduates.

Table 2: Higher Education Occupations 2002-2004

Occupation	N	%	Cumulative %
Academic	1575	55	55
Research	1081	38	93
General Admin	149	5	98
Teaching Only	43	1	99
Miscellaneous	34	1	100
Total	2882	100	
Unknown	77		
Total	2959		

It is important to remember that while 55% of appointments within the higher education sector are academic, in terms of all employment this represents 23% of doctoral graduate employment destinations. If research only appointments are included, then this increases to 39%.

Analysis by university type (see Table 3) shows that 30% of the academic appointments within higher education are from Go8 graduates with the next largest group IRU graduates representing 11%.

Table 3: Higher Education Occupation by University Type

Occupation	Go8		ATN		IRU		Regional		Total	
	N	%	N	%	N	%	N	%	N	%
Academic	857	30%	215	7%	318	11%	185	6%	1575	55%
Research	730	25%	85	3%	156	5%	110	4%	1081	38%
General Admin	94	3%	13	0.5%	27	1%	15	1%	149	5%
Teaching Only	21	1%	5	0.2%	13	0.5%	4	0.1%	43	1%
Aberrants	21	1%	5	0.2%	5	0.2%	3	0.1%	34	1%
Total	1723	60%	323	11%	519	18%	317	11%	2882	100%

As first post-graduation destinations, the length of employment (permanent or short term) is also of interest. Enders (2004) had noted that first employment destinations in academic positions should not be taken as a long term guide, since the numbers in academic employment drop by an estimated 10% (Enders, 2004). Analysis of the 2002-2004 data show that 42% of those employed in academic appointments hold permanent positions while 21% in research appointments are in permanent positions (see Table 4).

Table 4: Higher Education Length of Employment 2002-2004

Occupation	PERMANENT		Total	
	N	%	N	%
Academic	1195	42%	1575	55%
Research	600	21%	1081	38%
General Admin	97	3%	149	5%
Teaching Only	14	1%	43	1%
Aberrants	22	1%	34	1%
Total	1928	68%	2882	100%

Finally, variation by university type remains (see Table 5). 22% of the permanent academic positions and 15% of the research positions in higher education are held by Go8 graduates. Only 5-8% of graduates from the other three university types hold permanent academic appointments.

Table 5: Higher Education in Permanent Position by University Type by Occupations 2002-2004

Occupation	Length of Employment - Permanent									
	Go8		ATN		IRU		Regional		Total	
	N	%	N	%	N	%	N	%	N	%
Academic	626	22%	175	6%	242	8%	152	5%	1195	41%
Research	421	15%	44	2%	73	3%	62	2%	600	21%
General Admin	55	2%	10	0.3%	20	1%	12	0.4%	97	3%
Teaching Only	7	0.2%	2	0.1%	4	0.1%	1	0.0%	14	1%
Aberrants	13	1%	4	0.1%	3	0.1%	2	0.1%	22	1%
Total	1122	39%	235	8%	342	12%	229	8%	1928	67%

Implications

The research to date represents an important first step in understanding where doctoral graduates are initially employed compared with the first preliminary research almost a decade ago (ARC, 1999). The initial analysis has shown that the GDS data have been remarkably consistent in the period 2000-2005, providing a reliable data source for our ongoing research. The education, finance and health industry sectors employ the greatest proportion of doctoral graduates. Finer grain analysis of the higher education industry reveals that only 23% of doctoral graduates are employed in teaching and research academic appointments, representing a further drop from the 33% in 1998. An even small proportion of these graduates will remain in academic careers, since the data show that less than half of these appointments are permanent. Further, graduates from Go8 universities strongly dominate academic, research-only and permanent appointments. With a continuing decrease in doctoral graduates finding employment in academic positions, the findings raise questions about the quality and relevance of the doctorate for non-academic employment.

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Exploring the Extent and Nature of the Diversity of the Doctoral Population in Australia: A Profile of the Respondents to a 2005 National Survey

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Abstract

Although there is general agreement that diversity is a feature of doctoral education in Australia, there are various forms and levels of diversity, many of which are not captured by analyses that rely on categories for analysing the doctoral education population that are those commonly used in education at the undergraduate level, such as sex, age, mode of study, type of enrolment, citizenship, and Broad Field of Study, etc. These categories primarily reflect concerns to do with funding and issues of participation and equity. Our analysis of data from a national survey of doctoral candidates carried out in 2005 as part of a Linkage Grant project 'Reconceptualising the doctoral experience', suggests that not all of these categories are relevant to critical concerns for doctoral education. Nor do analyses at a macro-level represent the particularity of the doctoral experience. They can mask the reality of a highly variable student population, and one that is not necessarily represented accurately or helpfully by ascribing group identities.

Introduction

The existence of doctoral candidate diversity has been substantiated in national studies (eg. Pearson & Ford 1997; Neumann 2003), while the exponential increase in doctoral candidate numbers has led to an expectation of increased diversity. Yet there has been little national quantitative data beyond that available from official government statistics that give data such as age, sex, enrolment status, and award programs, to give a more detailed account of the nature and extent of the variation in the doctoral population and their experience. Moreover, the assumption that growth leads to diversity is problematic at the system level (Pearson et al. 2008). A comparison of national data on candidate characteristics, age, sex, enrolment status and Broad Fields Of Study (BFOS), from 1996 and 2004, shows a relatively stable system for doctoral education despite the growth in numbers. This raises questions as to the type and extent of diversity being reported and how it might best be represented.

In this paper, we draw on a national survey of doctoral scholars in 2005 that sought to generate more detailed and current national data about the characteristics and activities of contemporary doctoral candidates that went beyond the macro-level data collected nationally by the government. These data were sought for a research project funded by the Australian Research Council Linkage Program with the Council of Australian Postgraduate Associations (CAPA), Deakin University Students' Association and the Australian National University (ANU) Postgraduate and Research Students' Association. The project developed detailed information about the contemporary doctoral experience focusing on the inter-relationship and significance of doctoral candidates' workforce participation, family and domestic responsibilities, work training and career development.

A related aim is to develop new tools for data collection and analysis to inform policy making and implementation. As established by Thompson et al. (2001), a barrier to data collection in doctoral education is a restricted discourse and a lack of terminology with shared meaning among practitioners. Moreover, as Ross (2001) concludes, many of the models and categories in use for analysing postgraduate study are in fact drawn from the undergraduate literature and experience and are not necessarily appropriate for doctoral education. Current institutional data collection practices have been established to satisfy government reporting requirements with a focus on issues such as funding, participation, and efficiency. These do not produce sufficient, nor necessarily appropriate data, to assist in monitoring internal institutional quality, to inform educational decision making on issues in curriculum and supervision, nor assist other stakeholders such as student associations in assessing their members' needs nationally and locally.

The National Online Survey 2005

The national survey of doctoral candidates in Australia was administered in mid 2005. Planning and development associated with the conduct of the national online survey was extensive. Following approval by Ethics Committees at ANU and Deakin University, survey trial and pilot exercises were conducted at these two institutions. With the support of the Deans and Directors of Graduate Studies (DDoGS) and the Council of Australian Postgraduate Associations (CAPA), the final version of the survey was administered over a six-week period in July-August 2005. In the last week in June, the 41-item questionnaire was located on the CAPA website and invitations were extended to candidates enrolled in Australian universities to participate in this survey.

Just below fifteen percent of the national doctoral population responded. The data were collected in a de-identified form to preserve anonymity for both individuals and institutions. Following a preliminary analysis of the descriptive data and some minor adjustments, the data set comprising 5,395 cases was finalised in December 2005. In the analyses that follow this is the number on which calculations are based unless indicated otherwise.³

³ Unless elsewhere specified, the following reporting conventions have been followed: (1) All percentages reported represent the number of respondents that answered a question in a particular way divided by the total respondents to the survey. (2) Conservative statistical criteria have been used so that results have only been reported as 'significant' if they were statistically significant at a = .05 level and also represent a difference between means of more than five percent. (3) Similarly conservatively, where multiple comparisons have been conducted, for example, to identify the nature of significant differences between more than two groups, a Bonferroni correction has been used. This is to ensure that the probability of finding a significant result due to chance within any set of comparisons was not increased beyond the 5% level.

The 2005 survey respondent profile

- The profile of the responding candidates can be characterised as follows:
- 62% female
- 31/35 median/mean age
- 70% full time enrolment, 4% mixed
- 79% formal mode of attendance 'internal'
- 92% PhD by research, 4% Prof Doc, 3% PhD research and coursework
- 80% Australian citizens
- 70% on scholarships (33% Australian Government scholarships (APA/APAI/IPRS)).

There is also an indication that socio-economic status is varied with almost half of the respondent parents having as their highest level of education either 'school' or 'post-school' education (41%/49% father/mother school only). A much smaller proportion of parents have a PhD (fathers/mothers 6%/2%). Five percent self-describe themselves as having a disability, and less than one percent (44) report they are of Aboriginal or Torres Strait Islander descent.

Although this profile indicates some diversity, as indeed is the case for the national profile, it could be taken to support the longstanding conventional view that the majority of doctoral candidates are full-time, male and on campus undertaking a PhD award program. The major obvious difference from this earlier conventional thinking is that the number of women candidates has been growing to reach parity nationally in 2005.

What follows is an analysis of the survey data to explore further the nature and extent of diversity of this doctoral population, their characteristics and activities and the implications for representing that diversity. However, caution must be taken in generalising on aspects where there is noticeable difference from the national profile (Appendix A). Some of the variation from the national profile – particularly more in the younger age group, and fewer 'internal' enrollees – may be accounted for by the preponderance of those in their first eighteen months of enrolment, that is, 45% of the respondents first enrolled in 2004 and 2005, and the complexities of determining the meaning of enrolment and attendance status that are examined further below. Across BFOS the respondent breakdown is similar to the national populations except for an overrepresentation of scholars in the BFOS Health, and the patterns of age and sex within BFOS are similar to those identified in earlier analyses in 1996 and 2004 (Pearson & Ford 1997; Pearson et al. 2008).

Characteristics

Variation in age and family circumstances

The median (31) and mean (35) ages of respondents supports the contemporary view that candidates are most likely to be in their thirties rather than their twenties, but this does not reveal the extent of the actual variation. There are varying means across BFOS. Education (mean age 45) is an outlier as are Engineering and Related Technologies, and the Natural and Physical Sciences (both means 29), a pattern to be expected (Pearson & Ford 1997; Pearson et al 2008). However, the survey candidates span a wide age range: 16 – 81 years with varying age distributions within BFOS. Table 1 shows that a wide age range is a feature of all the BFOS that is, within group differences may be as important as those among groups.

Additional characteristics of the respondent population gained from the survey, but unavailable nationally, give some indication of family and socio-economic circumstances. They indicate, as does the age range of the candidates, that many are neither young nor unattached. Most (58%) live with

spouses/partners and/or with dependent children (27%). There is no clear relationship between mean ages, BFOS or family circumstances. While 73% of those in Education reported themselves to be living with a spouse or partner, 47% in the Natural and Physical Sciences also reported this to be the case, as did 49% in Engineering and Related Technologies (mean age 28.95). Those in Agriculture, Environmental and Related Studies, Engineering and Related Technologies and Natural and Physical Sciences had significantly fewer dependent children. Analysis showed that the number of children within BFOS was similar for men and women, but age was the variable most strongly associated with the number of children.

Table 1. Age of respondents across BFOS: means and range

Broad Fields Of Study/ means	Mean	Std. Deviation	Minimum boundary	Maximum boundary
Agriculture, Environmental and Related Studies	32.89	9.196	21	70
Architecture and Building	38.26	9.407	24	68
Creative Arts	40.03	11.931	21	75
Education	45.15	10.134	21	81
Engineering and Related Technologies	28.95	6.970	21	60
Health	34.47	10.343	21	76
Information Technology	34.09	10.466	21	80
Management and Commerce	38.31	10.429	22	78
Natural and Physical Sciences	28.63	7.809	16	74
Society and Culture	37.26	11.545	21	70
All respondents	34.75	11.011	16	81

Mode and type of attendance

The difficulties of generalising about mode (internal/external/multi-modal) and type (full-time, part-time) of attendance have been raised in a previous study (Pearson & Ford 1997). More recently, since these two aspects of attendance have been collected as separate categories by the relevant government department, Pearson and et al. (2008) have been able to show that there is a limited relationship between mode of attendance and enrolment status (p. 363, Table 2). So, for example, in 2004, while only 25% of Education respondents were full-time, 70% were categorised as 'internal' attendees. This questions the meaning of the category 'internal', and suggests that these categories mask rather than reveal the particularity of circumstance. The survey data provide further detail to inform discussion about these categories.

Type of attendance and intensity of enrolment

Calculating changes in the proportion of full-time to part-time candidates in the doctoral population has also been complicated by changes in the reporting categories in use (Pearson et al. 2008). We can establish that in 1996 at least 61% were enrolled as full-time, with relatively small increases and decreases over time, probably due to policy changes such as the introduction of the Research Training Scheme (RTS) (Evans, 2002). What is not documented, is the extent of movement between attendance types which is a further complicating

factor. In the survey, respondents were asked to give their enrolment status at the year they commenced and at the time of the survey. This enabled the enrolment status of individuals to be tracked on a national basis, something that is impossible using Department of Employment, Education and Workplace Relations (DEEWR) annual datasets. Thus, the results from the survey showed that 20% of the population had changed their enrolment status at least once during their candidature to the point of its administration. Of the remaining respondents, 64% had always enrolled as full-time and 16% had spent the whole of their candidature as part-time as shown in Table 2.

Table 2. Summary of enrolment history (%)

Enrolment status of respondents throughout candidature (n=5391)	
Always part-time	16
Changed status	20
Always full-time	64

It might be expected that if an analysis were undertaken for candidates who completed their candidature, the proportion who changed enrolment status would be greater than the population at any one time, as full-time candidates who use up all their scholarship time may change to part-time candidature (Table 3). There was evidence of this effect in the survey population where 48% (53% of whom were full-time at commencement) changed status by their fourth year of candidature (Ryland, 2007).

Table 3. Percentage of respondents who changed status by the number of years enrolled (n = 4239)

Number of years enrolled	Percent of respondents who changed status (%)
1	8
2	12
3	26
4	48
5	60
6	62
7	65
8	66
9	65

These data demonstrate that the categories of 'full-time' and 'part-time' do not represent stable or discrete groups of candidates.

The fluidity of enrolment status also raises a major issue of how to capture more accurately enrolment status for individual candidates. Under the current conception it is necessary to identify a point in time or candidature to analyse a population's enrolment status. For example, you could choose the commencement status of candidates to analyse their enrolment status, but as has been shown, 20% of the population changed their status. Alternatively, one

could choose the population's enrolment status at completion, however, as shown by the survey, many full-time candidates change status in the latter part of their candidature. For such reasons, Ryland (2007), proposes a new measure termed the 'load intensity'. Load intensity is the average enrolment load over the duration of doctoral study. It uses the value 1.0 for each whole year spent full-time, 0.5 for each whole year spent part-time. This gives, for example, a value of 0.75 for a year of an equal mix of full-time and part-time. Thus 'load intensity' for candidates who do not change status is 1.0 for full-time, and 0.5 for part-time, and candidates who spent four years as full-time and one year as part-time have a load intensity of 0.9 (Ryland, 2007).

This measure allows a more accurate picture of enrolment patterns. Candidates who have a load intensity over 0.75 would have spent a predominant part of the candidature as full-time with some part-time study, whilst those with load intensity below 0.75 would have spent the predominant part of their study part-time. Also, by using this measure the need to identify a specific point in the candidature to measure the candidates' enrolment status is obviated.

Mode of attendance

The majority (79%) of respondents gave their formal mode of attendance as 'internal (on campus)'. Of these, significantly fewer were in Education (62%) and Health (67%), and significantly more were in Engineering and Related Technologies (91%), Information Technology (89%), Natural and Physical Sciences (85%), and Society and Culture (82%). We analysed whether these 'internals' were actually on campus. Respondents listed which doctoral activities they had pursued in the previous seven days, and then gave where they had undertaken the majority of these activities during that time. Table 4 shows the range of locations for doctoral activities, the university and the home being the most popular. This table shows that the majority of respondents were not 'on campus' for the majority of their doctoral activities in the week prior to completing the survey. This is supported by data discussed subsequently of the locations of resources used for doctoral study (Table 21).

Table 4. Location for undertaking the majority of doctoral activities in past seven days (%)

Location	Percent
On-campus	42
Home	33
Research Centre	8
Workplace	5
Field	3
Other	4
No response	5
Total	100

The pattern of locations varies across BFOS, but in all cases, at least 30% are likely to be off campus at any given time. Within the BFOS with significantly fewer by chance reporting as 'internals' the most common four locations are as follows: Education 55% at home, 22% on-campus, 6% in the workplace, 5% in the field; Health 35% on-campus, 28% at home, 17% at research centre, and 9% in the workplace. In those, BFOS reporting significantly more than by chance 'internals' the most common four locations are as follows: Engineering and Related Technologies 69% on-campus, 16% at home, 6% in a research

centre, and 4% in the workplace; Information Technology 51% on-campus; 27% at home, 6% workplace, 4% other location; Natural and Physical Sciences 63% on-campus, 13% in a research centre, 11% at home, 5% in the workplace; and Society and Culture has 50% at home, 32% on-campus, 4% in the field and less than 4% other location (Table 5).

Table 5. Location for undertaking the majority of doctoral activity in the past 7 days in selected BFOS (%)

Location/BFOS	Education	Health	Engineering and Related Technologies	Information Technology	Natural and Physical Sciences	Society and Culture
On campus	22	35	69	51	63	32
Home	55	28	16	27	11	50
Research centre	1	17	6	3	13	3
Workplace	6	9	4	6	5	3
Field	5	4	<1	1	2	4
Other	2	4	3	4	2	4

Scholarship (non) holders

The majority of domestic candidates have scholarships of some kind, however, this is not the case for all doctoral candidates. Thirty percent of respondents reported not holding any scholarship, 33% specified holding an APA, APA(I) (both stipends) or IPRS (tuition scholarship for international candidates), and 23% held university scholarships. A few (22) nominated fee exemption scholarships only. There is no significant gender difference between those holding and not holding a scholarship. There is a highly significant relationship between enrolment status and scholarship (non) holding with 89% of scholarship holders being full-time—as is expected given various scholarship requirements and visa rules. However, of those who do not hold a scholarship, while 67% are part-time, 29% are full-time, and 4% report mixed enrolments (Table 6).

Table 6. Scholarship (non) holding by enrolment status (%)

	Full-time	Part-time	Mixed	Total
Scholarship (n=3690)	89	8	3	100
No Scholarship (n=1598)	29	67	4	100

Table 7 shows that there are significant, but unsurprising, differences across BFOS. More candidates in Agriculture, Environmental and Related Studies, Engineering and Related Studies, and Natural and Physical Sciences have scholarships, in contrast to those in Creative Arts, Education, Management and Commerce, and Society and Culture, who do not have scholarships. There is also a difference in those reporting 'other' scholarships, with Agriculture, Environmental and Related Studies and Health, in particular, having nearly as many or more than University scholarships.

Table 7. Scholarship holding across BFOS (%)

Broad Fields Of Study/Type of Scholarship	APA/APAI/ IPRS	University	Other	No scholarship
Agriculture, Environmental and Related Studies	37	23	21	19
Architecture and Building	38	32	5	24
Creative Arts	42	16	7	35
Education	18	18	7	54
Engineering and Related Technologies	43	25	18	13
Health	27	19	22	31
Information Technology	24	32	9	34
Management and Commerce	21	25	13	42
Natural and Physical Sciences	40	31	14	14
Society and Culture	37	19	5	38

Table 8 shows a range of 'other' scholarship sources. These include, not only government instrumentalities beyond the higher education sector in Australia, but also various industry and philanthropic agencies. A small number of respondents nominated providers not included in this table, such as, 'the World Bank, the Asian Development Bank, Smart Internet Technology, Road Traffic Authority and the Australian Institute of Sport, indicating even greater diversity than shown in Table 8.

Table 8. Providers of 'other' doctoral scholarships identified by respondents

'Other' doctoral scholarship providers	Frequency
NHMRC—National Health & Medical Research Council	102
CRC—Cooperative Research Centre	76
Overseas Government	42
Foundation	37
Industry, company (other than APAI or CRC)	35
AusAID	29
ARC—Australian Research Council	17
CSIRO—Commonwealth Scientific & Industrial Research Organisation	15
GRDC—Grains Research & Development Corporation	14
State Government	14

The variation in the value of scholarship (e.g. from small to large scale financial support) suggests that some candidates hold more than one scholarship (for example, an APA plus a 'top-up' from another provider). It is this sort of variation that may explain the surprising number of 'domestic' and 'non-citizens' (284/22) candidates holding scholarships who are also part-time, as does the number of those with scholarships who are of mixed enrolment (3% of scholarship holders), and those with scholarships who first enrolled before 2002 (344, 6%).

Citizenship and residency: defining 'international' candidates

The growth in enrolments of international doctoral candidates in Australia over the past decade or more is reflected in the different growth rates for 1998 to 2004 for international candidates (71% growth) and domestic candidates (27%). The majority of the survey respondents are citizens of Australia (80%) and a small number of the respondents are citizens of New Zealand (3%), or of other countries (20%). The apparent discrepancy in these percentages is explained by a small number (181) who are dual citizens, either of Australia and New Zealand (41), or elsewhere (140). Approximately one fifth of doctoral candidates are international and so this is a 'category' that will increasingly be of interest to universities, and other groups such as CAPA. However, as we argue here, assuming that 'international' is a significantly distinct category from 'domestic' and/or assuming that it is homogenous, is fraught with difficulty. Our research shows that in many ways being 'international' or 'domestic' makes little difference to the experience of being a doctoral candidate, although there are some differences. Again, it is the diversity within and across the categories that is important.

The categories 'international' and 'domestic' are important official government categories, especially because they influence funding. However, beyond this they become problematic. In particular, 'domestic' not only includes Australian citizens and Permanent Residents, but also New Zealand citizens. 'International', therefore, includes everyone else on the planet which, as a moment's reflection shows, is a very diverse 'category' of people. For our survey, international candidates were defined as those who were not Australian citizens or Permanent Residents. However, this means that some 'domestic' candidates are Australian citizens who are also permanent or temporary residents elsewhere. There are also, as noted above, Australian dual or multiple citizens and, in terms of their personal and cultural identities, categorizing them as Australian or international is substantially incorrect. Furthermore, some international candidates obtain Australian permanent residence during candidature and, in government terms, become 'domestic' candidates.

Complexities reside in the data, too. Table 9 shows the extent to which international and domestic candidates' expectations of their doctoral programs were being met at the time of completing the survey (that is, during candidature). It does show that for international candidates the level of satisfaction was generally (81%) as expected or better than expected, which was slightly above the levels for domestic candidates (78%). This does not mean, of course, that all expectations are similar, nor that their perceptions of what constitutes satisfaction are likewise. It does show that the categories international and domestic do not embody great disparities when data are summed and proportioned. One might pose a hypothesis that international candidates were more likely to have a mismatch between their expectations and experience, for example, the Australian PhD program might appear unexpectedly difficult for those more familiar with US-style PhDs, or Australian candidates would be more familiar with the resources and infrastructure and what to expect than their international colleagues.

Table 9. Respondents' view on expectations being met by residential status (%)

Response/%	International	Domestic	All respondents
Far better	9	8	8
Better	28	22	23
As expected	44	48	48
Worse	15	17	17
Far worse	5	5	5
Total	100	100	100

Table 10 shows the candidates' numbers of children. Again, what is notable is that there is very little difference in the proportions between international and domestic candidates. Almost three quarters of the candidates have no children, and of those who do, the greatest (almost identical for domestic and international) proportion have one child. The domestic candidates have slightly higher percentages for those with two or three children, and for those with four or more the international candidates are slightly higher. Parents would no doubt argue that there is a considerable difference in the lives of people between those who have no children and those who do; parents of four or more children would probably argue that there was a lot of difference between one child and four or more! What our data show is that being 'international' or 'domestic' is not a meaningful variable.

Table 10. Numbers of respondents' children by residential status

Number of children/residential status	International (%)	Domestic (%)	All respondents (%)
0	75	73	75
1	11	11	11
2	10	11	11
3	3	4	4
4	2	1	1
Total	100	100	100

Academic staff

Given the current interest in employment outcomes for doctoral candidates it is of interest that 30% (1609) responded that their main occupation is as an academic (full-time, part-time, or on study leave) as well as being a doctoral candidate in 2005. Although this figure seems high it is compatible with the research findings of Neumann, Kiley and Mullins (2007, p.11) that in 2005, 51% of doctoral graduates entered higher education employment (including both academic and administrative positions). It is likely too, that many of these positions are for contract and casual academic positions. Nor are all of them looking for a permanent academic career. Only 61% (see Table 24 for further detail) intend to go on to further employment in a university after completion of their doctorate.

Activities in a week and during the candidature

The survey asked for detail on candidates' activity both during the past seven days, and over the course of a candidature. Data on weekly activity, and over the candidature give an indication of the range of the activities and priorities for doctoral study and research, employment - paid and unpaid, academic employment, leisure, family responsibilities and voluntary and community activity.

Doctoral and employment activity in a week

The ranked listing of doctoral activity shown in Table 11 reflects the range of candidates from the greater number early in their candidature and those coming to completion.

Table 11. Respondents participation in doctoral activity during the past seven days

Doctoral Activity	Percent (%)
Reviewing the literature	75
Thesis writing	45
Data analysis	41
Research design	41
Data gathering	29
Laboratory work	22
Conference presentations	13
Fieldwork	11
Other	10
Generic skills courses	5
Formal coursework	4
IT coursework	1
None	4

The pre-specified items are those more usually referred to but candidates also specified 'other' doctoral activities are shown in Table 12. These include variations of activity identified in this survey item such as writing other than 'thesis' writing, which include seminar papers, journal articles, book chapters and project reports, for example, reports to industry. In addition to making conference presentations, respondents indicated that they presented to, and interacted with, people in a range of internal (departmental, disciplinary) and external settings (industry, health, education sectors).

The examples in Table 12 also reveal a set of categories extending beyond the eleven categories specified, which also include internal variation. Respondents who registered their engagement in formulating applications, for example, mentioned ethics approval, research funding, scholarships/awards and post-doctoral positions. Those undertaking placements specified work and clinical experience, as well as internship. The range of events which respondents organised included conferences, focus groups, courses and field trips. Additional activities identified by a small number of respondents, however, suggest this list might be extended to include 'guiding new candidates', 'managing a lab', 'consultancy' and 'employment'.

Table 12. Examples of 'other' doctoral activities identified by respondents

Doctoral Activity	Frequency
Writing (i.e. other than 'thesis writing')	160
Meeting and interacting with a variety of audiences	77
Formulating applications	38
Editing	31
Making presentations (i.e. other than 'conference')	27
Undertaking work placements	18
Training (i.e. other than 'formal', 'generic skills' and 'IT' coursework)	16
Undertaking administrative tasks	15
Organising (e.g. events)	12

Table 13 shows the range of doctoral and non-doctoral activities undertaken in a week with an indication of time spent. Unsurprisingly, the activity undertaken by most of the respondents (95%) was connected with their doctorate, and for the most hours, followed by family or domestic activities, and leisure, though with fewer hours. Paid non-academic employment was undertaken by 35% of the respondents, but mostly for twenty or less hours (21%), whereas 29% undertook paid academic employment (specified as tutoring, demonstrating, marking, lecturing and research assistance) but also for twenty hours or less (23%). A surprising 19% of the respondents undertook unpaid academic activity, although 75% of these candidates undertook five hours or less. These results could be related to the higher number of full-time survey respondents and/or the larger number in their first or second year of enrolment.

Table 13. Time spent on doctoral and non-doctoral activities undertaken in a week

Activities / % spending given hours	< 20	21- 40	41+	Number of respondents undertaking activity
Doctoral	34	36	24	5103
Paid non-academic employment	21	9	5	1940
Paid academic work	23	5	2	1594
Unpaid academic employment	18	1	<	976
Family and/or domestic activities	75	12	7	5078
Leisure	86	5	2	4995
Voluntary	31	<	<	1691

Academic work undertaken during a candidacy

Additional data as to the amount of academic work undertaken during the course of a candidacy show how common this is. Most candidates (4220, 78%) have undertaken at least one of the following activities: tutoring/demonstrating, marking, research assistance and lecturing, or 'other'. Of the total surveyed population, 71% of the respondents are undertaking paid academic activities, 21% are undertaking unpaid academic work, and a further 19% volunteered to

do so, during their candidature. The paid activity undertaken by most respondents is tutoring/demonstrating (58%) as shown in Table 14.

Table 14. Percentage of respondents undertaking paid academic activities

Paid academic activities undertaken	Respondents (%)
Tutoring / demonstrating	57
Marking	48
Lecturing	28
Research assistance	30
Other	8

There appears to be a limited connection between this involvement and whether the candidates are holding scholarships or not, with only lecturing being significantly more likely as an activity for non-scholarship holders (Table 15).

Table 15. Percentage of (non) scholarship holders undertaking paid academic activity

Paid academic activity undertaken	Hold scholarship (%) N = 3662	No scholarship (%) N = 1597
Tutoring / demonstrating	59	56
Marking	48	51
Lecturing	23	39
Research assistance	30	31

Examples of 'other' paid academic activities identified by respondents are shown in Table 16. These include variations of activity identified in this survey item. The pedagogy category, for example, includes supervising, clinical teaching and mentoring (i.e. as distinct from lecturing, tutoring or demonstrating). A number of respondents highlighted aspects of work undertaken in their role as full-time academics. A key characteristic is that these respondents view themselves as leaders, partners or supervisors of research, rather than merely the providers of 'research assistance'. Similarly, the assessment category identifies respondents as undertaking a broader range of tasks other than 'marking'. Examples include 'clinical examination', 'workplace assessments', and 'examination supervision'.

The examples in Table 16 also reveal a set of categories extending beyond the four categories specified in the survey which are subject to internal variation. Some respondents identified a range of curriculum-based activities, particularly the design or coordination of units, subjects and courses. Others identified a variety of activities under the rubric of administration that included departmental duties such as 'first year administration', 'entering results', and 'archiving course material'. There was also evidence of consultancy and contract work, undertaken in business, industry and other off-campus settings (for example, 'various IT consultancies'). Some respondents made reference to organisational activities in relation to conferences, workshops and 'public events'.

Table 16. Examples of 'other' academic activities (paid) identified by respondents

Academic Activity	Number of Respondents
Pedagogy (i.e. other than 'tutoring/demonstrating' or 'lecturing')	82
Curriculum	60
Authentic research (i.e. other than 'research' assistance)	31
Administration	30
Consultancy	21
Assessment (i.e. other than 'marking')	19
Organisation	10

Further information on academic involvement comes from respondent estimates of hours spent in university teaching in the past six months. Of those, 48% who reported undertaking teaching during the past six months, 65% give <70 hours as the time spent teaching. Of those who are teaching, more are scholarship holders, but non-scholarship holders are each teaching more hours (Figure 1).

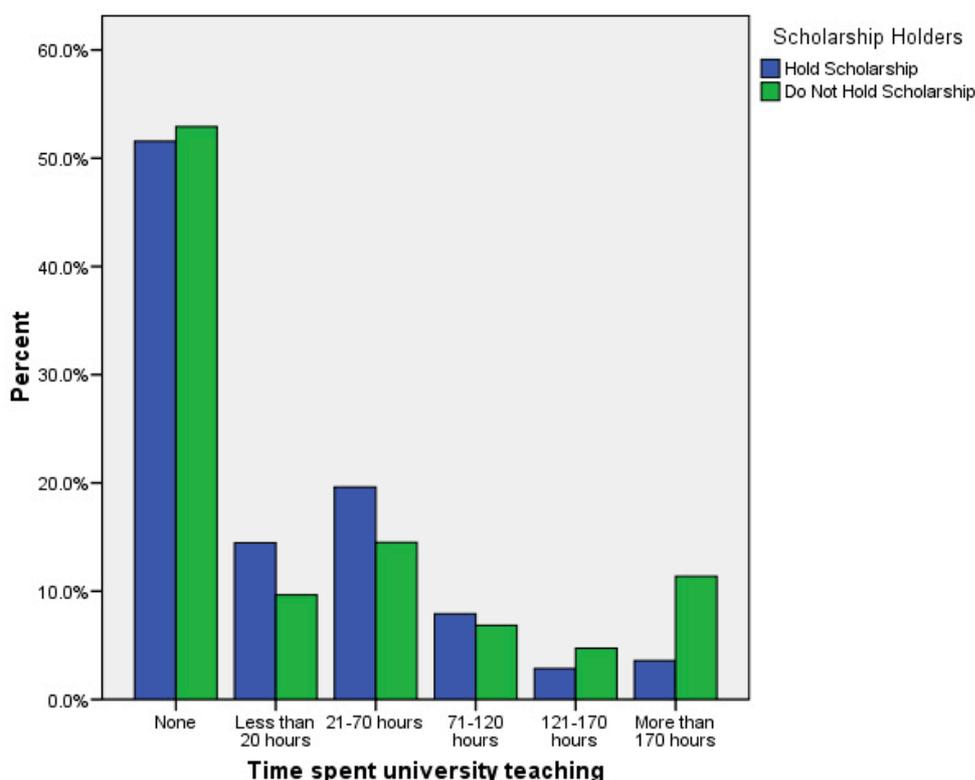


Figure 1. Time spent on university teaching

[Note: percentages are percent of each category of Scholarship status, i.e. percentages for scholarship holders sum to 100% as do the percentages for non-scholarship holders.]

Although 'university level teaching' and the academic activities of tutoring/demonstrating, marking, and lecturing, are not synonymous, aggregated, these data establish how the majority of the candidates are involved in teaching and/or academic work of some kind. It appears that most

of this work is paid, but not all. The issue of payment is complicated by the way in which it is seen as a form of income support, professional development, and participation in the academic community. Additionally, paid and unpaid academic work can be seen as exploitation by those involved, as was also found by Thompson et al (2001) among postdoctoral appointees and their supervisors.

Family and domestic work

As indicated previously, over 50% of doctoral candidates are living with partners and 27% have children. Therefore, the role of domestic work in the lives of doctoral candidates cannot be ignored. As shown before in Table 13, 94% of the candidates indicate spending time on family and/or domestic activities, with the majority spending up to 20 hours in the past week. There are variations according to enrolment status as shown in Table 17 below. It is of interest that the full-time candidates, both men and women, spend a similar amount of time, but proportionally more part-time men and women spend longer hours on such activity. This could be explained by the greater percentage part-time candidates living with partners (72%) and 42% having children. Survey data show that part-time candidates can spend a mean of eighteen hours a week on family or domestic activities with up to over 35 hours a week for part-time female candidates with three children. In general, male part-time candidates spent less time on family and domestic activities than female candidates. However, this does not necessarily mean that female part-time candidates spend less time on their doctorates than their male counterparts. Other factors also appear to play into the amount of time spent on doctoral activities such as the amount of time spent on paid-work according to Ryland (2007).

Table 17. Time spent on domestic and family activities by sex and 2005 enrolment status (n = 4978)

Hours/gender/ enrolment status	Full-time (%) (n=3623)		Part-time (%) (n=1355)	
	Female	Male	Female	Male
Did not undertake	2	6	1	3
< 20	79	82	66	78
21 to 40	12	9	18	12
41 to 60	4	1	7	5
Over 60	3	1	8	2

Doctoral support and training activity

Doctoral support and training can be identified as of at least four types: (1) the involvement, paid or not, in academic activity; (2) structured programs for teacher preparation and practice often with some tutoring practice; (3) activities such as seminars and discussion groups (79% of respondents participated in these activities, the largest group in seminars (60%); and (4) specific structured training activity usually for developing employment related skills. A small number reported undertaking generic skills courses, IT courses and internships in the previous week; whereas, more participation was reported over the whole year, although 48% indicated they had undertaken none, which may reflect the large number of those in their early candidature.

The two latter forms of support and training are provided by a mix of local, central and external agencies: departments, graduate schools, postgraduate student associations, and professional organisations (Table 18). The main providers are departments and faculties.

Table 18. Providers of doctoral support activities identified by respondents (%)

Training type/providers	Department / faculty	Graduate school	PG student association	Professional organisation	Other
Seminar series	69	13	7	6	5
Social activities	45	4	26	6	19
Discussion group	60	11	8	7	14
Electronic network	27	11	12	23	27
Writing group	33	29	16	3	19
Other doctoral group	40	11	11	7	31

Another form of training and induction into the academic and research community comes from the academic and professional activity involved in producing publications and patents, presenting at conferences, and giving interviews (Table 19).

Table 19. Outcomes for which respondents consider themselves primarily responsible during the course of their candidature (%)

Outcomes/number	1	2-9	10+	None
Presentation—in Australia	24	46	2	28
Refereed publication	23	26	1	50
Presentation—outside Australia	22	16	1	61
Non-refereed publication	15	20	1	64
Media interview	10	7	1	82
Other	5	7	1	88
Patent, commercial product	2	<1	<1	97

Capabilities

So far the focus has been on training input, as is often the case in the discourse of employability skills (Craswell 2007). The survey respondents were asked to give their view on which capabilities they perceived had transferred from their doctoral to employment and vice versa. Respondents were given the choice of eleven pre-determined capabilities, plus the options 'other' and 'none of the above'. They were able to choose as many as they wished. Table 20 gives respondents' perceptions of their capability transfer. It shows that the candidates see the traffic being both ways, but that slightly more candidates indicated transfers of capability from employment to the doctorate.

Table 20. Respondent perceptions of capability transfer from and to employment and the doctorate (%)

Capability/capability transfer	Employment to Doctorate ¹	Doctorate to Employment ²	Difference in Transfer
Critical thinking	65	54	11
Information & communication technology	63	46	17
Time management	61	43	18
Problem solving	57	53	4
Working in teams	47	23	24
Writing	47	55	-8
Project management	45	33	12
Networking	42	28	14
Library	26	51	-26
Occupational health & safety	25	12	13
Ethical	19	29	-10
Other	4	6	-2

[Note:¹ N=4,432 (82 per cent of total survey population)² N=4,632 (86 per cent of total survey population)]

The data supports the contention that candidates do bring a range of useful skills into their doctorates from their current or previous work experiences and that they cannot be considered as young, inexperienced candidates lacking in work-ready attributes, as is so often portrayed in the media—as noted above survey respondents have a median age of 31 and a mean age of 35. Of particular interest, are differences greater than 10%. i.e. areas where substantially more respondents perceive the transfer between employment and doctorate, is in critical thinking, IT, time management, working in teams, project management, networking, and Occupational Health and Safety (OHS); and where more respondents perceive the transfer is from doctorate to employment for library skills and ethical research practices. Problem solving is one skill where there is agreement both ways and could indicate the need to explore further what is being assumed this term means.

There is variation in the perception of the transfer of capabilities both within and across BFOS, but little difference between capability transfer from employment to doctorate or vice versa for those undertaking a PhD by research, PhD by research and coursework, or those undertaking a professional doctorate. However, in both doctorate to employment, and employment to doctorate transfer, those without scholarships perceived higher transfer rates, in both directions, than scholarship holders. Of the eleven options provided, non-scholarship holders perceived higher transference rates in eight cases for doctorate to employment and in nine cases for employment to doctorate. This may indicate that these candidates, more of whom are part-time and in employment, more clearly identify the multi-directional nature of the skills transfer and have had more opportunities for it to occur.

Location

Respondents were asked to indicate the locations of resources (such as, IT equipment, experimental equipment, materials and information resources) used for their doctoral research and frequency of use.

Table 21. Location and frequency of infrastructure used for research

Infrastructure/Frequency of use	Never (%)	Rarely/sometimes (%)	Mostly/always (%)
University	3	24	74
Home	9	43	49
Employer ¹	47	18	13
External research agency ²	45	23	10
Industry partner ³	56	15	4

[Note: 599 indicated 'other' infrastructure used, but not specified.

¹ N=4170, 77 % of survey population

² N=4196, 78% of survey population

³ N= 4065, 75 % of survey population]

The responses in Table 21 above align with the rank order of Table 4, and suggest that such a range of locations for research and study is usual, but likely to vary over time according to the nature of the activity. Moreover, the use of a range of locations holds for all BFOS, though the patterns within each BFOS vary. For example, those candidates in BFOS Health are more likely to carry out their research in a research agency. A further indicator of the location of doctoral study and research is the reported location of the principal supervisor. The majority (85%) were reported as on campus, while those off campus were 3% at another university, 4% off campus in the public sector, 2% off campus in the private sector; and a further 3% off campus in the community.

This, however, does not provide a complete picture of communications and connections. In identifying the individuals most influencing their learning and research 18% rated an academic at another university as 'most' or 'highly influential', and 11% did likewise for an industry-based researcher. Such connections are made easy by email – 83% gave this as the most effective method for keeping in contact with the individual deemed to be most influential 'always' or 'frequently' – although 79% also indicated that they engaged in 'face-to-face' meetings, 25% used the 'telephone' and 45 respondents used 'letters'. These last two media could indicate the pattern for external supervision identified in Pearson & Ford (1997, p. 39), where supervisors use a range of communication strategies and media.

Overall we can conclude that the location of a particular candidate at a given time and their use of research infrastructure is very variable. The complexity of this is demonstrated in the case narratives that form part of the thesis completed by Cumming, who argues for the significance of recognising the particularity, as well as the complexity, of the doctoral experience (Cumming 2007).

Candidates' perspectives, goals and expectations

Overall the respondents were reasonably positive about their doctoral candidature with 79% agreeing their expectations are being met to some extent. There is no significant gender difference, but those enrolled for longest are less positive, a finding consistent with previous research (Cullen et al. 1994). Across BFOS, there are also significant differences, with Education doctoral candidates being significantly less satisfied than all other BFOS with the exception of Creative Arts. Health candidates were also significantly less satisfied than respondents in the Natural and Physical Sciences (Appendix B).

Candidates viewed their candidature most commonly (44%) as 'professional development' as shown in Table 22, with those in BFOS Health ranking this

most highly (56%) and with Society and Culture least highly (32%). It is of note that there is variation within all BFOS as well as across them. Only the BFOS Health and Management and Commerce have agreement of over 50% on a view of the candidature. The range of responses raises the issue of terminology as these terms have varying meanings for doctoral candidates, their supervisors and others. The varying use of terminology reflects the differences among those involved in PhD programs as to their purposes and educational nature. Only 36 (1%) viewed their PhD as 'leisure', which some have worried might be the motivation for funded candidates in fields in less obviously employment related fields.

Table 22. Respondents' views of the candidature (%)

View of candidature	Respondents (%)
Professional development	44
Education	17
Knowledge production	16
Personal development	13
Training	6
Not entered	2
Leisure	1
Other	1
Total	100

Relevant to these responses are plans for the future. Next to university work as a destination (39%) the next largest group (23%) 'not sure' could apply to any type of candidate, those seeking their first job, or those looking to change (Table 23). There is a significant, but small, relationship between post-doctoral plans and gender. Men are over-represented in the private sector relative to females, (6% more) and women are over-represented in the non-profit sector (2.6%).

Table 23. Respondents' plans for after the doctorate

Post-doctoral plans	Respondents (%)
University	39
Not sure	23
Public sector	15
Private sector	14
Non-profit/community sector	5
Other	3
Total	100

An important additional finding, as shown in Table 24, is that 47% of those giving 'university' as their post-doctoral plan are those claiming to be an academic member staff in 2005. And conversely of the 1,609 claiming to be academics 982, (61%), planned to be employed in a university after they completed. Some however, are looking to other fields in the private and public sector, and like many others, some are 'not sure'.

Table 24. Post-doctoral plans of those who are (not) academic staff

Post-doctoral Plans	Main Occupation	
	Not academic (%) N=3765	Academic (%) N=1609
Non-profit/community sector	6	3
Not sure	27	14
Other	3	2
Private sector	16	10
Public sector	18	9
University	30	61

Discussion

Although it is now common to say that doctoral candidates form a diverse population, when it comes to discussing the characteristics of the doctoral population, and aspects of doctoral education itself, it is customary to rely on the given official demographic categories such as 'part-time/full-time', 'sex', 'age', 'mode of attendance', etc. Discussion then easily follows on the needs and expectations of 'part-time', 'on campus' and 'international' candidates, and so on. The danger of this reliance on these macro categories is that any such analyses can effectively reduce, rather than capture, any representation of the extensive variation at the level of practice. These official categories are designed primarily to assist government and universities to manage their PhD income, expenditure and resources. They do not describe defined groupings that are stable, so that assumptions as to behaviour, needs and expectations cannot be made. Often the use of 'means' and 'medians' mislead people to view the doctoral population as relatively homogenous, even if different in some respects from previously. It is understood that doctoral candidates are not predominantly, young, male and on campus; but is the view that they are in their thirties, an advance in terms of understanding the extent of diversity? The range of candidates' ages tells us more about the diversity of the doctoral population, than the means and age groups often used. Similarly, the apparent growth of external study relies on acceptance that the reporting categories for mode of study reflect the reality on the ground in a useful way.

Our data suggest that although there are patterns or clusters of characteristics that can be associated with certain groupings, for example, Education candidates are more likely to have fewer parents with university education, to be part-time, external, older and female, many in Education are not like this. That is, within group differences are as important as between group differences. This is particularly the case for the use of BFOS. Although, the ASCED code has some relationship to disciplinary divisions that relationship is not strong and varies among the BFOS. BFOS are necessarily just that, broad, and can encompass a range of specialities with associated research and professional practices. An extreme case in point could be Health.

Health is a growing field that encompasses doctors, nurses and various other health professionals, as shown in Table 25. There is limited relationship to specific research practices; rather the breakdown is more occupationally based. It is noteworthy that here too, the highest number of responses are for 'Other health' which includes Nutrition and Dietetics, Human Movement, Paramedical Studies, First Aid and the catch-all 'Health, n.e.c. (not elsewhere classified)'. A

further confounding factor is that much medical research is carried out in multidisciplinary teams in biomedical research centres.

Table 25. Distribution of respondents in narrow fields within BFOS Health

Study Field	No. of Respondents	Study Field	No. of Respondents
Medical Studies	265	Nursing	85
Pharmacy	36	Dental Studies	16
Optical Science	10	Veterinary Studies	16
Public Health	195	Radiography	11
Rehabilitation Therapies	76	Complementary Therapies	18
Other Health	328		

A feature of the survey responses is the frequent use of the category 'other' and many respondents took advantage of the opportunity to specify when offered as shown in Tables 8, 12, 16. Providing respondents with the option of 'other, please specify' for a number of survey items enabled us to gain a more nuanced view of activity and the range of practices current. The result confirms that the degree of particularity associated with doctoral activity, academic activity and scholarships is considerable. This is not surprising as many doctoral candidates are working at the 'cutting-edge' of thinking and research, and some are using their doctoral program to resource and advance specific interests that precede their enrolment.

An improvement may be to develop more robust categories, but this, too, is problematic. For example, one possibility is to use the revised RFCDC code - the Australian and New Zealand Standard Research Classification 2008 (ANZSRC), which is more closely aligned with disciplinary groups. However, as Pearson et al (2008) argue there are problems here, especially as the code does not cope well with inter-disciplinary/multi-disciplinary activity in which doctoral candidates may be engaged. Moreover, what stands out from these survey analyses is that the variation does not consist of subsets of macro-categories. Ryland (2007) and Cumming (2007) position candidates as people with multiple responsibilities, goals and expectations which reach beyond the academy. As discussed by Välimaa (1998) academics too interact with and belong to a number of reference groups which can include discipline-based communities (national and international colleagues), professional communities (institutional or national) institutional level communities (professional colleagues from other departments), and national culture (friends and relatives). On different issues Välimaa (1998) suggests academics will identify with different reference groups revealing a more open situation than that suggested by a focus on disciplinary differences. The doctoral population and their experience are complex and particular: in a sense they are not singularly categorisable beyond a basic level of utility; most practitioners in doctoral education would require complex, even fluid, categorisations in order to inform their policies and practices.

The issue remains as how best to represent the doctoral population in all its diversity, complexity and particularity. Sen (2006), in discussing the need for recognising multiple identities, argues against the reduction of people and individuals to groups, to ethnic or religious identities alone. He sees this as making them open to being persuaded to engage in sectarian and ethnic violence. Instead, he argues for an acknowledgement that we have multiple identities, and proposes an alternative perspective for this, that is we are

'diversely different'. This concept is one that recognises difference without attributing group affiliation, without seeing the particularities of difference as all encompassing and unchangeable, and without lapsing into notions of difference as 'deficit'. Most importantly, it allows people to choose how to allocate relative importance to their multiple identities, choices which may change overtime.

This approach is one that concurs with the nature of the diversity revealed by the survey data and analyses. Its appropriateness is confirmed by the further qualitative research undertaken by Ryland (2007) and Cumming (2007). The implications are not to assume anything on the basis of enrolment status, disciplinary affiliation, gender, and so on, but be open to each candidate in their particular context negotiating their particular doctoral path. Issues as to institutional quality, curriculum and research education climate then need to be addressed flexibly with due recognition of the complexities of the '...multiple small worlds of research training with their specific research and research training practices' (Enders, 2004, p. 427), and we would add the diversely different doctoral candidates within them.

Conclusions

Attempts to represent the doctoral experience within standard categories ignores the extent and nature of individual variation. Such attempts unhelpfully contribute to the trend to the bureaucratisation of doctoral education whereby Kendall (2002, p. 137) argues academics and doctoral candidates are rendered '... transparent, accountable, standardised, observable.' In part, this bureaucratisation is a response to the challenges of the massification of doctoral education, in part a response to the supposed connection to economic growth, but it also is a scaling up of management approaches from the undergraduate arena. In so doing, there is a denial of the role of the agency of those involved in doctoral research. We need statistics to monitor issues such as equity and funding, but we should not rely on them uncritically for research purposes, certainly not to understand and represent the experience of doctoral education.

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Appendix A

Table (Ai). A comparison of the 2005 doctoral national and survey profiles on key demographics

The 2005 national profile (%) N=40794		2005 Survey (%) N=5395
50	female	62
62	full time enrolment ¹	70
91	mode of attendance 'internal'	79

¹This figure is based on data analysed by Ryland (2007, p. 67).

Table (Aii). Age of candidates 2005 nationally and for survey population

Age groups	National (%) (n=40794)	Survey (%) (n=5395)
20 to 29	36	44
30 to 39	29	26
40 to 49	22	18
50 to 59	11	10
Over 60	3	2

Table (Aiii). The distribution of 2005 doctoral candidates nationally and in the survey across BFOS

Broad Fields Of Study	National (%)	Survey (%)
Agriculture, Environmental and Related Studies	4	6
Architecture and Building	1	1
Creative Arts	4	4
Education	9	8
Engineering and Related Technologies	10	6
Health	12	20
Information Technology	4	5
Management and Commerce	10	6
Natural and Physical Sciences	20	20
Society and Culture	26	24

Appendix B

Table (Bi) Extent to which expectations are being met for doctorate across BFOS

'Broad Fields Of Study'	Mean	N	Std. Deviation
Agriculture, Environmental and related studies	2.99	326	.977
Architecture and Building	2.67	36	.793
Creative Arts	2.82	190	1.004
Education	2.64	402	.921
Engineering and Related Technologies	2.91	341	.959
Health	2.84	1076	.917
Information Technology	2.91	247	.973
Management and Commerce	2.88	345	1.028
Natural and Physical Sciences	2.97	1084	.883
Society and Culture	2.89	1273	.950
All Respondents	2.88	5327	.941

[Note: Each BFOS was compared to each BFOS (e.g., A vs. B, A vs C, etc.) after an overall significant difference was found using an Analysis of Variance to ensure reliability.]

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Fostering Honours and Postgraduate Participation in University Research Communities

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Abstract

This paper addresses a problem Kiley (2005) and others have noted is endemic to Australian universities. In 2007, we took the first small practical steps to address the difficult task of drawing honours and postgraduate students of literature into the research culture of their discipline. Our focus was a conference we organised and that took place in July 2007. We chose keynotes who are not only internationally pre-eminent in their fields of literary theory and criticism, but have also participated in the recent wars that have surrounded the teaching of literature in the universities. We wanted to offer our students the opportunity to be more than awestruck listeners at the feet of Great Men; we wanted them to be conference-ready so they would engage directly with the new research that would be presented; we wanted them to experience a level of intellectual excitement that might feed into their own work. To that end, we set up a number of formal and informal enabling structures that brought groups of students and staff together in ways that included an informal reading group, a formal honours course based on the keynotes' work, and how-to-write-and-present-a-paper workshops for postgraduates. All were geared to the conference and fed into it as they fostered students' awareness that they belong to, indeed are essential to, an ongoing vital research community. Our next step is to encourage and facilitate others who might wish to adopt and adapt these strategies.

Introduction

A little over a year ago, in February 2007, Megan Hoffmann, Dr Tony Thwaites and I took the first practical steps to address a problem endemic in the arts and humanities in Australian universities. What, we asked ourselves, could we do to lessen the separation of research higher degree and honours students from the broader research cultures of our institution. In response, we began to develop a multi-layered, straightforward, easy-to-implement program that would

First draw these students into our research community, the multi-disciplinary School of English, Media Studies, and Art History (EMSAH) at the University of Queensland, and

Second not add too greatly to our already challenging workloads.

We began to map a program that would work vertically, between staff, rhd and honours students, and horizontally between student peers, in the hope that eventually it will become self-sustaining as students see working with others to be normal rather than aberrant.

By encouraging students to work with each other, and with staff members beyond the necessarily narrow circle of their advisory teams, by inviting them to "come into our (research) parlour," we hoped to mitigate the debilitating sense of estrangement reported by many student researchers, and which the research shows works against completions. If our students enjoyed the research experience, the research might go better.

And of course we envisaged benefits for us as advisors and teachers, and for the School. We wanted to tap into all that new energy; to take advantage of what King (2007) in an impassioned argument for the importance of postgraduate research to Australasia's socio-economic future, has termed the "fresh pair of eyes" a new researcher brings. We knew from experience that as we nourished our students they would in turn nourish us.

The papers my colleague Megan Hoffmann and I presented at the QPR Conference in 2008 and that are gathered in these proceedings are interlinked. I began by introducing the overall scheme; Megan and I then each focused on specific elements that meshed to make up the foundations of the program we will develop and disseminate, with our colleagues, in the months and years to come. My focus will be the postgraduate experience, and Megan, who is a enrolled in an MPhil in performance studies with EMSAH, will focus on the experience of honours students, who occupy a liminal position between our undergraduate and postgraduate programs. To distinguish between the two groups we've been working with, I will from here on refer to honours students and rhd students.

In terms of evidence, it's very early days, though we do have some qualifiable and quantifiable data. Our papers are largely descriptive—they are not the result of the kind of intensive research others have done and are doing; rather they record our on-the-ground experiences and our plans for the work we have begun. In connection with this, I'd signal here that while we recognise the problem we address is an arts and humanities one, we believe aspects of our plan might benefit other research areas.

Our literature search showed, unsurprisingly, that there is strong evidence that researchers operating in "networked environments" (Fox and Milbourne qtd in Kiley (2005) are more productive than those who work alone. Such evidence, together with the quantitative data provided by the Graduate Careers Council of Australia's (GCCA) Postgraduate Research Experience Questionnaire (PREQ) and our own more nuanced if less quantifiable experiences, supported anecdotally by staff and student colleagues, suggested to us that for rhd students in the arts and humanities, research resembles more closely the solitary vice than an interactive productive sociable activity. All this persuaded us of the pressing need for a program that would welcome and integrate rhd and honours students into EMSAH as researchers. We felt we could model a mutually enriching process of reciprocity as we made clear our appreciation of their commitment to our program. While most EMSAH advisors may, with King (2007), recognise the benefits that accrue to us personally from the intellectual stimulation and emotional satisfaction of working closely with research students, we are aware that too often we fail adequately to impart that recognition. In planning this program, we wanted students to know that their contribution to our community is important and it is valued. We hoped that in return would come a recognition of the responsibilities inherent in the role of student researcher: the kind of environment we wanted to foster would only take root and grow if our students were as committed to its success, to their community in other words, as we were. There are encouraging signs that this is happening.

The first question Tony and I asked was why our student researchers did not take advantage of the opportunities for mutual cooperation and intellectual exchange already available. Why, for example, did so few come to School seminars, join reading groups? Why had the once- strong student society collapsed? Anecdotal and other evidence with which you will be all too familiar suggests that for a range of reasons, including the need to complete the thesis before the scholarship runs out, pressures of paid work and duties to family, rhd students are wary of venturing beyond the confines of their own research. The

prospect of a commitment to a broader community is perceived to be a threat rather than a boon. Rather than an enriching relationship of give-and-take likely to result in an enhanced research experience, a more sophisticated thesis, and a speedier outcome, communal engagement is feared as a divagation, even a snare, likely to jeopardise timely completion.

However, there is another perspective on the problem: that of the students. As researchers including Conrad (2007) and Kiley (2005) have noted, the Postgraduate Research Experience Questionnaire, which is sent to all students graduating with a research higher degree, reveals that a significant number believe arts faculties don't do enough to invite students' intellectual engagement in research communities. While the arts score well overall in terms of postgraduate satisfaction, when it comes to the five questions that are geared to "research culture"—what the GCCA terms "intellectual climate"—they score considerably less well.⁴

We addressed the problem from two angles. I will now, very briefly, touch on the honours angle, before Meg discusses it in detail in the second paper.

We were in a particularly good position to respond to the sense of isolation experience by honours students: I am Director of Honours, and Meg "survived" my program in 2006. Together, we set up a multi-layered system of buddying and mentoring designed to entice these, the newest of our research students, into our research community and in so doing to facilitate the border crossing from undergraduate study to independent research. This part of the program will continue to require careful nurture, but if we can tread a delicate path between institutionalising the program and allowing it to develop organically, we believe its effects will flow on to our postgraduate program in years to come as honours students make the transition to research higher degrees.

Our welcoming of rhd students into the research culture of their discipline had as its focus an international conference Tony Thwaites and I organised for the second semester of the program's first year. We wanted students to have the opportunity to be more than awestruck listeners at the feet of Great Men and so we chose keynotes we knew would extend our students intellectually at the same time as they modelled best practice in terms of presenting their research and responding to that of others, including, of course, the postgraduates themselves. The keynotes we chose are internationally pre-eminent in their fields of literary theory and criticism, but they have also participated in the recent wars around the teaching of literature—they have a theoretical and pragmatic interest in the welfare of students and the discipline.

Our conference preparation and the conference itself were to operate as a discreet research community but one that opened out into the broader one of the international conference. We wanted our students to be ready. For this to happen they needed to be familiar with the work of the keynotes and so we set up a range of formal and informal parallel enabling structures that brought together students and staff in the lead up to the conference.

There were two formal elements that could be folded into our School-assessed teaching workload:

⁴ The five points the GCCA uses to measure "intellectual climate" are: the department provided opportunities for social contact with other postgraduate students; I was integrated into the department's community; a good seminar program for postgraduate students was provided; the department provided opportunities for me to become involved in the broader research culture; and the research ambience in the department or faculty stimulated my work (Qtd in Kiley 1).

First, Tony Thwaites and I taught, with five guest-lecturer colleagues, a one-semester honours literature seminar for 12 students in which we read canonical primary texts, including *Heart of Darkness*, *Mrs Dalloway*, and Wallace Stevens's poetry. Each text was coupled with an exemplary critical essay by one or other of the keynotes. The essays were the focus: we read them for content, and as models for argument, analysis, rhetorical strategies.

Second, because we are aware that few rhd students receive training in presenting at conferences, Tony and I, together with visiting academic Dr Felicity Plunkett planned and taught a one-semester pass/fail course to teach the process of writing and presenting papers. We enrolled ten students whose disciplines ranged across creative writing, cultural studies, film and television, and literature. They were encouraged to re-vision an aspect of their thesis from a perspective that would intersect with the conference theme. (In this we were mindful of two things: student fears of moving too far away from the thesis topic, and the opportunity to receive useful feedback for the thesis from a wider research community).

Within the larger student group, were nested three smaller ones, self-selected according to research area. The large group exchanged ideas and then drafts through an on-line discussion board and all thirteen of us were required to read all the latest drafts in preparation for each classroom meeting. In between those meetings, the small groups met online and face-to-face to offer intensive feedback. They gained transferable skills: working together, giving and receiving rigorous feedback, and the importance of encouragement.

Working with us and with each other, they began by

Developing the kind of abstract that sells an idea to a committee. (On enrolment in the course they accepted that there was no guarantee their papers would be accepted, though in the event they all were).

They then workshopped outlines and drafts, online and face-to-face, using the same process.

The course ended with a dress rehearsal at which students tried out presentation skills and they practised being an audience, learning the skills of offering useful generous feedback rather than taking the opportunity to reveal their own knowledge, and asking questions in an environment that would be more public than most of them had yet experienced. (Before the conference, students got together of their own volition for further practice runs, further feedback).

The results of this careful preparation were very professional presentations and, according to the students themselves, very little performance anxiety.

Now for two less formal elements of the project that cannot either be absorbed into an academic's normal teaching load or count for student credit:

First, an informal and shifting population of staff, RHD, and honours students met weekly and read examples of the work of each keynote that were particularly pertinent to the conference theme. We read together, word-by-word, line-by-line in a long-established EMSAH tradition that blessedly requires no pre-meeting preparation, pausing to discuss as often as seemed appropriate. Not only was this another step towards conference-readiness, it was another opportunity for students and staff to meet and to work through ideas together in an environment that broke down some of the inevitable hierarchies of the classroom.

Second, honours and rhd students from the two formal seminars were invited to help run the conference. This brought these two cohorts together in an environment far removed from that of the classroom to work towards a common goal.

As I've noted, this work is in its early stages, and it's too soon to speak of anything like results, but some things have already been seen to work well:

1. Postgraduate students have been able to receive the kind of support and training that enabled them to participate very successfully in an international conference.
2. When honours and rhd groups came together to work on the conference it became abundantly clear that the whole of the project was greater than its parts. The rhds reported they enjoyed the support and training they received in researching, writing and presenting as part of a group, and then working as a team with honours students to take on the responsibility of managing sections of the conference, and then networking with international scholars in that broader research community that blossomed around the conference itself. These are the kinds of research and transferable skill outcomes Mark Western and Alan Lawson have identified "as clear deficits" in Go8 PhD graduates' perception of their training. Evidence of the way such community and team-work might become embedded and thus self-sustaining may be seen in the fact that this year our much-mourned EMSAH postgraduate student society has been reborn and a group of students from this cohort are building on the knowledge they gained from last year's conference to plan and manage from the ground up this year's EMSAH honours/postgraduate Work-in-Progress Conference.
3. There is one quantifiable result linked to that training: five of the ten rhd course participants have found publishers for essays developed from their papers, and a sixth is reworking his at the request of a journal editor.
4. Tony and I were able to run two formal courses that were integral to the project as part of our normal teaching loads.
5. We often commented that after one of our classes, or after the reading group, we felt invigorated when experience might have suggested we'd be exhausted. Watching our students thrive together was perhaps a bit like runner's high.

Conclusion: now what?

In line with Carrick's current concerns, Tony and I want to embed the work we've been doing, and we want to disseminate it by talking to other disciplines within the University of Queensland, and more broadly. Although we have discussed our work one-on-one with colleagues at UQ and at other universities, these papers are the first formal step we have taken to disseminate our research and to receive feedback. Halsea, Deane, Hobson and Jones (2007) note how few award-winning teachers actually publish their research. We feel our experiences will add usefully to a growing body of excellent published research in this area.

If our program is not institutionalised within our own School of English, Media Studies, and Art History, it risks being lost. On the other hand, we're aware that it has worked well because it's a program we devised to suit the way we work with students. Our sense is that it would be to say the least counterproductive if the School were to require the next director of honours and each and every organiser of a conference to reproduce what we have done as we have done it.

Dissemination will need to allow for a great deal of flexibility. And if we are to persuade our colleagues, we will have to be as seductive in our approach to them as we have been in persuading students that working with others is beneficial and even fun.

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Welcoming Honours Students into a Research Community

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Abstract

This paper will discuss the practical steps we are taking to welcome honours students into the range of research communities that make up the multidisciplinary School of English, Media Studies, and Art History (EMSAH) at the University of Queensland. For a range of reasons, undergraduate students in the arts have a more fragmented university experience than do many of their peers in the sciences and professional courses, who early form stable cohorts as they move together through a structured program. Arts students, on the other hand, might enrol in first-year courses with students they won't meet again before graduation. The honours experience marks a shift, as strong intellectual friendships are formed in the hot-house environment of what is perhaps the most demanding year in any arts research program. The EMSAH experience, however, has been that while internally an honours cohort may be pleasingly cohesive, it does not see itself as part of the School's broader research community. This year Megan, as a PhD student who "survived" honours in 2006, and Jude, as director of honours, set up an informal mentoring program between interested postgraduate and honours students in response to this sense of alienation. Anecdotal evidence suggests our experiment served well to ease the transition for at least some of our students, but this year's project was necessarily a trial run and we are now in the process of assessing our data for 2008. We look forward to sharing what we've learned, and to the feedback of other delegates.

Introduction

For a range of reasons, students in the arts have a more fragmented undergraduate experience than do their peers in the sciences and professional courses, who often form stable cohorts as early as first year because of the way their programs are structured. The students in our School often comment that they may meet a student in first year, and not run across them again before graduation. Unquestionably, the honours experience does mark a shift as some students form strong intellectual bonds in the hothouse environment of what is perhaps the most demanding year in any arts research program. However, the experience in our School has been that while an honours cohort may be internally cohesive, it remains, if not ghettoized, at least aloof from the School's broader research community. Our enrolling honours students come to us *expecting* alienation—indeed they may even embrace it as a kind of romanticized suffering—and so in terms of cohort building, we found we had our work cut out to persuade them of the benefits of becoming part of a mutually supportive research culture. A second problem we wanted to address was attrition: each year a number of able students withdraw, often because they are overwhelmed by what is a "challenging" year.

As far as we're aware, studies of the postgraduate experience have tended to concentrate on research higher degree students, but it's fair to assume that honours students face similar difficulties, exacerbated by the added pressures of time, how much can hang on a good result, and the shift to the role of autonomous researcher.

The work we're doing is empirical—we haven't trawled data bases and we haven't looked at honours programs beyond our own; rather we've trialled a number of ideas based on our experiences and observations. Our project is a move towards alleviating the problems that arise from alienation, in order to improve learning and retention. We've had some successes and some failures.

In this second section of our presentation, our focus is a student-to-student mentoring and buddying program we put in place in 2007, a scheme that intersected with and fed into the conference project Jude's already discussed. We will describe the practical steps we have taken to establish, administer, and evaluate this program, and changes we've introduced in its second iteration in 2008.

The failure to integrate postgraduate students into broader institutional research communities, continues to attract higher education research funding in Australia. Over the last 15 years, researchers including Whittle (1992), Johnstone (1995), Kiley (2005) and Conrad (2007) have demonstrated that students immersed in a research community (the obvious example is a science student working as part of a laboratory team) are less likely to experience the sense of isolation prevalent in the arts and humanities, where research traditionally favours solitude.

The benefits of community range from the qualitative if rather nebulous idea of enhanced research experiences to the quantitative: higher and earlier completion rates are clearly desirable for all parties from students to advisory committees and their universities and, as Maxwell King (2007) has compellingly argued, for Australasia as a whole.

Honours students in our School have long complained that they are invisible, perhaps because while they have managed the leap from the huge undergraduate pool, they're the littlest of the little fish in the smaller pool they've just entered, populated as it is with shiny, fully finned researchers. Life's like that, but it does present a particular set of difficulties for students who are suddenly expected to adopt the role of autonomous researcher for the first time. For reasons that have to do with School budgets it's not possible to offer them work space beyond a few shared computers (and clearly physical propinquity assists the kind of community building we're advocating), but it's hard to imagine why we've only recently added honours students to the email list that invites all EMSAH researchers to upcoming seminars. Virtual space is, after all, virtually free and infinite.

The peer buddy system

Our honours students undertake an intensive "research methods and project management" course at the start of the program, designed to help them to shape and develop their projects. They must arrive at the first class of the first week with a three-sentence research proposal that advises their peers of their topic: why they chose it, why it is important, what gap in the knowledge it will fill. Based on this, students choose a buddy, who agrees to read drafts, listen to ideas, and have a coffee now and then. These relationships can develop into important intellectual friendships. It's simple to set up, and it works.

The mentoring programme

This is more complex. In an effort to draw honours students into our research community and thus facilitate the transition to postgraduate research, Jude and I, as Director and survivor of the program respectively, set up a plan of action through which MPhils and PhDs would mentor honours students. During my honours year, I had benefited enormously from informal mentoring by a close

friend completing an EMSAH PhD. We talked mostly by email, but occasionally face-to-face. He advised me on the skills of academic research and writing and I was able to ask questions about the honours experience – from how to navigate EMSAH's, and the University's, Byzantine administration systems, to applying for an APA. What was best about the relationship was that my mentor had only just completed honours himself and the experience was raw enough that he could both empathise and advise on what he was able to assure me were perfectly normal—even healthy—anxieties, insecurities and obsessions. I had excellent supervision, but my mentor was an important source of support within the broader framework and turned my induction into our School's research culture into a more positive experience.

When I enrolled as an RHD student in 2007, I approached Jude to discuss the possibility of building into honours the kind of mentoring I had experienced. After her first year as Director, Jude was evaluating the curriculum and the delivery of the program and was planning strategies to reduce the academic and social isolation of the honours year through the peer buddying system we've outlined. She agreed postgraduate mentoring would offer a further layer of support. The verticality and horizontality of it all appealed to our fine sense of balance!

Aims of the Mentoring Program

Our overall objective was to offer an informal and non-threatening entry into the research and social communities within EMSAH. Conrad and Ramsden's very useful recent study of Australian RHD students' perceptions of effective supervision reveals that students understand effective supervision to extend beyond the parameters of their relationship with their supervisor to departmental efforts to draw them into the research culture by bringing them together with other students (Conrad, 2003, p. 114).

Further, bringing rhds and honours students together linked into the objectives discussed in our first paper: to enrich postgraduates' experience of the research culture of the school.

Design of the Mentoring Program

What is a mentor? Recent research points to what Jacobi (1991) has termed a "definitional vagueness" (p. 505), but Kram's (1985) definition works for our purposes. He defines mentoring's psychosocial functions as "those aspects of a relationship that enhance an individual's sense of competence, identity and effectiveness" (p. 31). Within the context of our program, we envisaged the mentor as a role model who would facilitate the social and institutional aspects of the mentee's scholarly development. Mentors are not advisors.

Our design of the mentorship program was guided by the University of Queensland's Policy. Mentors and mentees signed an informal contract that recognised their relationship would:

- disturb none of the existing organisational structures,
- enable developments in knowledge, work or thinking,
- involve a non-directive dialogue rather than instructing and coaching, and
- complement assistance provided by the advisor and honours director.

We planned to match each honours student with a mentor in their discipline, and preferably in their subject area. Participation was to be voluntary and we imagined that following our formal launch the program would operate informally. We would delicately facilitate a very loosely structured partnership.

Implementation

After getting feedback from the rest of the School we canvassed the 2007 honours cohort, our potential **mentees**, to gauge their interest. Over two-thirds⁵ signed up. We then began the process of recruiting postgraduate mentors.

Our first invitation to potential **mentors**, which detailed the program, was sent to postgraduates recommended by staff. Once we had enough postgraduates, we began matchmaking.

Things went well, but matching little fish with bigger fish wasn't entirely straightforward:

- a number of postgraduates resisted a program that might cost research time;
- some discipline areas did not have enough willing or available postgraduates to go around so good matches proved more difficult;
- one area chose not to participate as they already had strategies in place. (We consider it a small victory that they want to be involved next year).

Recruiting took six very long weeks but at the end of the process we had 18 partnerships, and with the help of a number of members of staff, we launched the program with some fanfare (and good wine and food) six weeks into the semester. We outlined the program and our hopes for it, and mentors and mentees met and negotiated the terms of their "contract."

Evaluation

Aims of Evaluation

Our main aim in evaluating the program was to:

- Assess its effectiveness for both parties in terms of their sense of belonging to and identifying with our research community

And we wanted to:

- Ascertain the benefits each party felt they had gained
- Determine problems with design and delivery
- Respond to suggestions for improvement
- Begin to collect data for dissemination, beginning with our own School, then our Arts Faculty, then more widely.

Conduct of Evaluation

We picked up useful anecdotal information from the beginning, but we began our formal evaluation at the end of November. We emailed three-page questionnaires to each participant – one designed for mentors, the other for mentees. We were too late, and the response was disheartening: we received 11 responses from 18 mentors but only five from as many mentees – by the end of November, our sensible honours students were nowhere near UQ email.

To supplement that data, we organised a small focus group made up of participants who had been in contact several times during the course of the candidature. We wanted:

- To ascertain what (if any) benefits mentees and mentors who met regularly had gained, and

⁵ 22 students out of a cohort of 31.

- To get a better feel for what a good partnership looked like.

Findings/Results

Use of the program

The evaluation questionnaire:

Mentors were asked how often they had contact with their mentee (face-to-face, email, phone, text or internet social networking sites). 30% of respondents reported contact 5 times or more throughout the year, 50% had contact 2-5 times and 20% drank our wine and ate our food and did not meet again.

Of the mentees who responded, 40% had contact with their mentor 5 times or more, 20% had contact 2-5 times and, distressingly, 40% did not meet after the launch.

In terms of participants' means of contact throughout the relationship, of those respondents (both mentors and mentees) who had contact more than once in the year (75% of the total responses), 100% reported using both face-to-face and email contact, while 17% each reported using text messaging and or internet networking sites as well as email and face-to-face.

It is interesting to note that 80% of both mentors and mentees who had reported having contact with their partner 5 times or more throughout the year also reported having met their partner prior to the mentoring relationship, either socially or through a shared supervisor or subject.

Participants' Experiences of the Program

We received very positive feedback regarding participants' experiences of the program from the focus group. **Mentees** reported finding the extra level of institutional support provided by their mentors particularly helpful:

"Honours is quite an isolating experience and it's nice to feel that there is someone else (other than your supervisor) that you can discuss things with."

In terms of **what** was discussed, **mentees** valued talking to "someone who's done it before" about general aspects of scholarly life, such as applying for scholarships and coping with a heavy academic workload. One student commented that his mentor helped "demystify" postgraduate life and the transition from honours to rhd.

One **mentor** valued the experience from the perspective it gave her as an educator, saying:

"it made me think of pedagogical alternatives to deal with scenarios that were quite different from the ones that I encounter within a teaching class"

and another mentor commented on how she benefited from reading her honours student's drafts, saying:

"The honours student can teach you a lot... Because her work was so good... it was inspiring to see that so early into her academic life".

Another commented that his engagement with his mentee was valuable just because it made him "get out of the office".

Some participants that came to the launch but did not have contact with their partner after that commented that they were confused as to who was meant to

contact whom, and that they then felt they “left it too late” to get in contact when they really wanted to. To attempt to safeguard against this confusion, this year mentors agreed to make the first move.

Participants’ Perceptions of the Program (as a means of integrating them into the broader research community).

In response to the question “Has your involvement in the mentoring programme influenced the way that you see yourself as a member of EMSAH’s research and or social community” one mentor replied:

Yes! It’s provided a means by which I can feel more collegial and involved with other students. It has boosted my confidence to feel that I can be of assistance to another student. It was also an excellent means by which I learned more about a project that I otherwise probably wouldn’t have engaged with and this has expanded my knowledge which I have found most therapeutic at a time when I’m so entrenched in my own research.”

Another mentor commented on the benefit to rhds:

“It’s really nice as a PhD student... You feel like your community’s a bit bigger now that the honours students are involved.”

Mentees who made considerable use of the program all felt that the mentoring program drew them into the wider school community. One commented that:

“You don’t feel so much like the honours students, over there.[pointing over to an isolated point in the distance]”, it brings you in a bit more.”

Our response to feedback

A number of respondents commented the program began too late, and this year, we were able to have partnerships in place in the first week, and every honours student understood it to be a given they would have a mentor. The launch was held at the end of the first week, so that it served as a welcome for our newest researchers at the same time as the parameters of the mentoring program were reiterated. Importantly, the Head of School and other members of staff made formal speeches of welcome, emphasizing honours researchers’ importance to the School.

Because of our difficulties last year in finding enough willing postgraduates in some disciplines to go around all the honours students, this year we are trialling group mentoring relationships alongside one-on-ones.

In the first iteration, we had asked mentors and buddies, along with advisors and other interested parties, to attend sessions in Week 5 at which honours students formally presented their planned research to the School. It worked well, but this year we moved the day-and-a-half program from EMSAH’s building a hundred yards along the colonnade to a formal seminar room in one of the research centres—the location, as a number of staff commented, helped turn the occasion into a “mini-conference”. At some sessions there were twenty enthusiastic and supportive mentors, buddies, and members of staff (and a couple of mums and dads) in the audience.

Conclusion

It’s too early to draw solid conclusions about community or retention rates, but our honours program *feels* a healthier place. It is still a competitive environment, but it’s more generous.

We said there were failures. Attrition last year was the worst Jude can recall! This does not look good. Two gave up for financial reasons, but four left for stress-related reasons. However, there's an upside. Three were persuaded to extend their candidature, and two have now graduated with first-class honours. Another is set to complete in May. We consider immeasurable the role of mentor and buddy support in giving these students the courage to continue.

We began by noting that when we first introduced the program, we had some difficulty persuading honours students of its potential value. The buddying system, however, and again due to propinquity, worked well from the start, with buddies reading and commenting on each other's work, helping with technology problems, providing a safe place to offload about the program, their advisor, the honours coordinator, life...

But more broadly, it wasn't easy to persuade students that being part of our research culture was desirable or that our welcome was genuine. This year we presented the mentorship scheme as a normal part of the program—everyone is in, no ifs or buts. Suddenly honours students simply *are* part of the research community, and the large attendances and audience response at the presentations convinced our new researchers that they *are* valued.

A questionnaire distributed to mentees last week (21 out of 26 have responded) suggests the changes we've made have resulted in a better program. *All* mentors and mentees have met up, and the majority are meeting at least once a week. Buddies and mentors and mentees report meeting socially for coffee, for a pizza, to see the Andy Warhol exhibition at GOMA. Following a witty, light-hearted but very serious guest lecture on stress management, every Monday evening after class, a group of mentors and mentees take a stress-reducing "scholars' walk" through our beautiful campus, and others are "getting out of the office" to do this during the day.

We would suggest that the strategies we've trialled could be adapted and adopted by other institutions and by other disciplines in the arts and humanities. Indeed, we expect there are all manner of similar innovations being tested out there we don't know about.

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Self Regulated Learning in Doctoral Education: A Pragmatic Analysis of Examiners' Reports

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Abstract

An expected outcome of a PhD is that a candidate is trained to become a member of an academic community. Supervisors play the most important role in scaffolding a candidate into a community of practice. Besides the supervisors, examiners of a PhD thesis also play an important role by providing developmental experiences to the candidate. The scaffolding by the supervisors and developmental experiences provided by the examiners are usually in the form of written feedback. Both supervisor and examiner feedback form the pinnacle of a gate-keeping process which postulates self-regulated learning for doctoral candidates.

In this paper, we present our linguistic, pragmatic analysis of a set of examination reports and discuss the results in the context of self-regulated learning (SRL). First we briefly describe what pragmatics is (1) before providing insights into self regulated learning and feedback practices in doctoral education (2). We then present and discuss details of our analysis based on a set of examiner reports focusing on three types of feedback: referential, directive and expressive (3). Finally, we put forth an argument on the importance of expressive feedback in the doctoral examination process (4).

(1) Pragmatics "is the study of how language is used to communicate within its situational context" (Parker & Riley, 2000, p. 10). In this research, we study the language used in feedback on a PhD draft. Language serves a range of functions – we greet, we express surprise, sometimes we lie, we command, we regret, etc., – and in this paper we look at the specific function(s) of examiners' feedback.

(2) SRL refers to the development of knowledge, skills and attitudes. It also refers to the ability to transfer the knowledge, skills and attitudes from one learning context to another. Boekaerts (1999) points out that SRL is indeed "a series of reciprocally related cognitive and affective processes" (p. 447).

For doctoral education, we find a close link between SRL and pragmatics. Applying the concept of SRL in doctoral education means that the candidate develops discipline specific knowledge to gain membership into a scholarly academic community. Besides this, SRL also includes the mastery of skills like goal setting, monitoring and research management. In addition, the candidate is expected to have attitudes such as openness and receptiveness to criticism and ethical standards. Feedback lies at the heart of the self-regulated learning experience of a PhD student. The examiner's feedback plays a crucial role in scaffolding the candidate into the academic community. SRL is associated with effective self-directed learning for which feedback is "an inherent catalyst" (Butler & Winne, 1995, p. 246) and depends on the fundamental role of interaction in the examination process (Kember & Leung, 2005).

(3) In this study, the feedback provided in three examiner reports was analysed from a pragmatics perspective (see Holmes, 2001 for a good overview), based

on the taxonomy of feedback developed by Kumar and Stracke (2007). It was found that the examiners provided all three types of feedback: referential (providing editorial, organization and content information), directive (trying to get the candidate to do something by means of suggestions, questions and instructions), and expressive (expressing praise, criticism and opinion). While examiners varied in their types of feedback, the candidate's self-reflection clearly indicated that expressive feedback was the most valuable because it allowed for the candidate's SRL in regards to the development of knowledge, skills and attitudes.

(4) We would claim that expressive feedback – when the examiners comment on the issues by offering their understanding, asking for reflection, encouraging discussion and further exploration of ideas – deserves special attention, as our study points to the importance of interpersonal aspects in the self-regulated learning process.

This study paves the way for the development of a taxonomy of good practices by providing both feedback and developmental experiences to nurture self-regulated learning among doctoral candidates.

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Experienced Research Supervisors': Views on Good Supervision

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Abstract

The supervision doctoral students get nowadays differs from what was available when today's supervisors were doctoral students. A study with experienced research supervisors from all faculties at one university in Sweden demonstrates how research supervisors' views on research supervision can vary.

At a cultural, group level certain parallels can be drawn with previous studies in regard to concordance between the area of research and the type of thesis. At an individual level, however, three different styles of supervision emerge, called *researcher*, *leader* and *official* which differ mainly in: their relationships to the doctoral student, their reasons for becoming supervisors, their outlook on power and, to a certain degree, their views on who is responsible for the doctoral students' success in finalizing their projects. No parallels with for instance disciplines can be drawn.

The supervisors' views on whether and how supervision may be developed varies, in areas such as education, feedback, motivation and role models. The supervisors under study have previously not reflected that much on the question of supervision. Most of them have neither received nor requested feedback and do not expect to get honest verdicts from their students. They profess themselves to have developed a mode of supervision on their own, without assistance or any form of training. Most of them have never attended any organized supervision education and would never have attended if offered. Most of them mean that being a researcher is enough, by doing research you become a good supervisor.

Keywords: research supervision and supervisors, styles of supervision, variation theory

Background

There are a number of governing factors that are necessary to ensure good quality research supervision. On the one hand, there are the public demands, and on the other hand, demands raised by the supervisors themselves i.e. through the Trade Union and The Swedish Society of Professors.

Today, supervision training is requested in Sweden, particularly if someone wants to be approved as a so called docent, were a PhD or equivalent competence is required as well as scientific and pedagogical skills. More experienced professors have not previous had the same opportunity.

In some of the official documents, the information about supervision is uniform, as if all supervisors belong to a homogeneous group (for instance in Doktorandhandboken/The Doctoral Manual). That is not the case. According to the rules, a postgraduate student is nowadays entitled to have at least two supervisors. These circumstances have increased the amount of supervisors, but also the need for supervisor courses. Even if it has become more common for postgraduate students to have more than one supervisor, one of them has

more responsibility, and a great part of the supervision still takes place in privacy.

The supervision postgraduate students get nowadays differs from what was available when supervisors of today were doctoral students. The present paper relates to a dissertation (Lönn Svensson 2007). The study includes interviews with experienced research supervisors from all faculties at one university in Sweden, where certain perspectives of supervision appear.

Student's opinion

In Sweden as well as in other countries, several studies of the *student's* opinions about supervision are made, and in many of them severe critique emerges. In Sweden, the Swedish National Agency for Higher Education is responsible for and evaluates the higher education institutions. In 2003 the agency undertook a major investigation, called the International Postgraduate Students Mirror, a questionnaire answered by 7 074 (out of 9.816 randomly selected postgraduate students, the response rate was 72%). It attempted to shed light on research studies from the perspective of the postgraduate students. A similar survey was conducted in 2005: in Catalonia, 1,001 postgraduate students answered, in Finland 3,826, and in Ireland 1,390 students.

The Swedish survey showed some negative results, for instance a large proportion of students were unsatisfied concerning their supervisors interest in their studies or how much constructive criticism or discussions they had received. Only 60% of the postgraduate students said they had received as much supervision as they desired. Every fourth student had experienced shortcomings in their supervision that had affected their research results and one out of ten had considered replacing the supervisor.

According to the criticism in the Postgraduate Students Mirror, different issues were dealt with and some studies were initiated. One study shows that supervisors have different conceptions of what is expected of them, what they want to do and what they think they can contribute. In 2008 the Swedish National Agency for Higher Education repeated the survey, and the results will be official within some months. Some data have been available in advance for the purpose of this paper. The response rate this time was 66 %. So far, one can find some differences mostly in positive direction, but many students are still unsatisfied.

A study of the supervisors view on supervision

Thirty-one supervisors have been selected through the criteria of being viewed as experienced supervisors by people within the academy in question. All in all, over 90 percent have supervised at least five students up to the completion of their dissertations and the same number have supervised for over ten years. They represent all (nine) faculties at one of the largest universities in Sweden.

Of the interviewed supervisors, seven were women and twenty-four were men. At the time of the interviews, they were between 41-65 years old. All but two were professors. The representation of the sexes was more even than in the case of the collective of professors employed at the university.

The interviewed supervisors have been divided into two groups coded as S and T, where S stands for the research areas of Social Science, Humanities and other, and T stands for Technology, Natural Science and Medicine/Dentistry.

In the study, certain parallels can be drawn with previous studies in only one case; regarding to concordance between the area of research and the type of thesis. Twelve out of fifteen of the supervisors from the T-group state that their doctoral students write theses consisting of previously published articles and in the S-group the completely opposite case was observed; thirteen out of sixteen supervisors consider the monograph as the most common form of dissertation.

No clear connection could be found between different areas of research and different supervision outlooks or strategies. The different ways of looking at supervision that have been identified in the results are represented in both groups to an equal degree.

The interviews began in an identical fashion, with the same question: "What do you think is the most important task for a supervisor?" In almost all cases, the ensuing question would be how the interviewed person would proceed with his/her task. The first follow-up question might be:

What do you do to stimulate and encourage and how?

What do you do to keep the right balance?

How do you tackle the situation when you have confused your students in some way?

All those interviewed explained why they were supervisors and related moments of gratification during performances of the task. Furthermore, they provided data about themselves and about what they consider to be successful supervision. The interviewed people were very outspoken, trustful and open-minded. My intrusive comments were few, and, in comparison to that of the interviewees, my speech time was minimal.

Previous Swedish studies show that supervisors are unaware of what is really expected of them, and the same thing is reflected in this study. On several occasions the supervisors stated that they had not reflected over certain questions before, but that they reached their own conclusions during the course of the interviews.

Three styles

In the interviews, three different outlooks or strategies appear, called *styles of supervision*. The styles differ from each other mainly in the attitude to the research students and in their outlook on the question of power and responsibility. They are called the *researcher*, the *leader* and the *official*.

No clear connection could be found between different areas of research and different supervision styles. The different ways of looking at supervision that have been identified in the results are represented in the S-group and the T-group to an equal extent.

When considering the thesis tradition and style, there is also variation and all styles are represented in both groups. Other data concerning the supervisors, their age and experience (e.g. number of supervised doctoral students) manifest no connections between the different styles.

Out of the thirty-one supervisors, twenty-nine could be connected to one of the three styles: ten to the researcher, eleven to the leader and eight to the official.

The supervisors show, just as former studies in Sweden, different focus. That means they describe the supervision in terms of a result like a dissertation or

research, or in terms of personal development. But, the different focus varies according to the different styles.

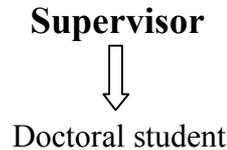
S-group		
	Product focus	Personal focus
Researcher	5	2
Leader		3
Official	2	3

T-group		
	Product focus	Personal focus
Researcher	2	1
Leader	2	6
Official	2	1

Nine out of eleven supervisors, who describe supervision as leaders, have a personal focus. Most supervisors who have a researcher style, seven out of ten, have a product focus. According to the official style, there is no difference between the two focuses.

Researcher

In the first style, the supervisor looks at supervision as a *researcher*. This style of supervision places the power and responsibility for the result with the supervisor.



A researcher will always carry out research; it is impossible for a supervisor to be a good supervisor without being involved in research work. Research is described as a way of living; it has a great affect on many aspects of the researcher's life. What is important is being scientifically knowledgeable. In this case, supervisor competence equals research competence.

The relationship between the researcher and the supervised doctoral student is professional and often quite formal. It can be personal and fairly relaxed, but in that case the supervisor sets the norms. The relationship rarely becomes really personal.

A researcher often assigns the doctoral student the role of a pupil, a journeyman or an apprentice and takes on the role of an expert, a teacher or a master. He would like to prove a worthy forerunner to the doctoral student and function as an intellectual role model.

Also, the act of supervision entails an element of control, clearly emphasising the power structure. It is often expressed in terms of power i e that the supervisor should function as a devil's advocate or that acting the part of supervisor implies being a critical scrutinizer reader or corrector. A researcher takes command and shows responsibility through concern and involvement.

Leader

In the second style the supervisor looks upon supervising from the point of view of a *leader*. The power is distributed and the responsibility for the result is the doctoral student's. The relationship is early in the process founded on an understanding of equality.

Supervisor ↔ Doctoral student

Rather than supervising within a private area of expertise, a leader will provide guidance in the art of doing research work. A leader often has a multi-disciplinary view on how to carry out research work, as opposed to the researcher, who has a more narrow and deep focus on a specific subject or area.

A leader is deeply involved in the procedures of enrolling doctoral students. He will gladly enrol competent doctoral students and views them as future colleagues.

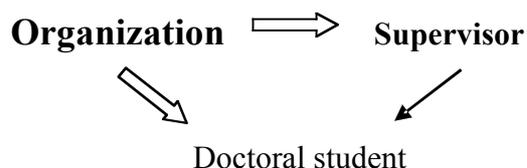
Talented, potential doctoral students are sometimes allowed to jump the queue and start their postgraduate studies ahead of time. A supervision relationship may begin with a leader giving the doctoral student simple exercises to carry out without difficulty. If there is a research group it will share the communal responsibilities for the supervision. One leader often lets another be in charge of a large portion of the supervision and can, in certain cases, abdicate from the supervision responsibilities under the assumption that the doctoral student should take the initiative and be in charge of the supervision. Handing over responsibilities to the group is also an important component in a leader's method of supervising.

A leader is governed by the belief that the whole groups should be empowered. His/her role is to develop an optimal research team and desires to promote development at an organizational level rather than controlling at an individual level. The role of being a leader is often described in egalitarian terms i.e. as teamwork or as a relationship between colleagues.

The contact with the doctoral students does not only have to do with research. The leader often has a close personal relationship with the doctoral students, that is, if they wish it. He/she will work at creating a good atmosphere in the group, and will often arrange social gatherings for the students, at home or at a restaurant. At times, the relationship may turn into a personal friendship.

Official

In the third style, supervision is seen as a duty performed by an *official*. The responsibility and power over the result and over the relationship is kept outside the relationship. The organization is more influential than the supervisor is.



An official has a strong belief in rules and will refer to regulations as ways of describing different methods of work. Even so, he/she may disregard certain rules during the enrolment process. When new doctoral students are to be enrolled, the official likes to be able to guarantee full security. He/she considers that someone at the department ought to be familiar with the students in

advance and know them before they are taken on. An official prefers not having to take risks. For this reason, when a new doctoral student is enrolled, the choice of supervisor has often not yet been made. The match between supervisor and doctoral student will have to take time to prevent either of them from getting caught up in a non-working relationship.

An official has no pronounced urge to supervise but views it as a duty he/she has to perform. The system requires that a professor supervises. Sometimes he/she would rather not do so and would prefer to work together with established researchers or conduct his own research even though supervision can, at times, be rewarding.

An official is critical of certain things, such as the enrolment system and certain supporting functions within the organization. He/she is also displeased with the supervision he/she received as a doctoral student; he/she has had no proper supervision him-/herself and has had difficulty finding role models. Sometimes he/she is even doubtful of his own capacity to establish the quality of the dissertation.

Structure and organization within, among other things postgraduate education, occurs with all styles of supervision, but an official will talk more about the importance of structure than a researcher or leader will. The formalities are important and an official will often express himself in terms that formalize and organize the supervision.

Supervision is carefully structured, and an official will have distinct rules for carrying out seminars, balancing meetings and checkpoints. He/she will endeavour to be outspoken about his expectations and will start making the rules clear to the doctoral students at an early stage.

The supervision is performed out of habit; it is something you just have to do. A certain fatigue is discernable, particularly among the older officials.

An official sometimes states that a supervisor should be concerned about working relationships, but this is rarely the case. More often than others he/she will claim that a supervisor should keep a certain distance to the doctoral students and he/she is not inclined to have a more personal acquaintance with them. They will often hold the doctoral students at an arm's length.

Supervisors development

The supervisors under study have not previously reflected too much on the question of supervising. Their views on whether and how supervision may be developed varies, in areas such as education, feedback, motivation and role models. As most of them have been supervisors for quite a long time, just a few of them have undertaken any courses in supervision. They claim they do not need it, they do not think it is necessary. One expresses his opinion about education as follows (all examples are translated into English):

I think it is good for younger persons at the post-doc level, to get some kind of supervisor education, but I am very much afraid of what I call the eunuch-syndrome; to be educated by someone who knows everything about anything, but who never has done it

According to other forms of support, for instance network or meetings for supervisors, some find it meaningful, other do not. There is a difference in needs between younger and older supervisors:

Well, we have that, (meetings), but I find them quite meaningless. Because, there are so many new supervisors and I think the questions are so trivial.

We've got supervisor meetings; they are a much protected activity. People don't want to have too much insight, but they keep up their face.

Feedback could sometimes be a source for development, but not in this case. Most of the supervisors have neither received nor requested feedback and do not expect to get honest verdicts from their students. It is not trustworthy:

We don't get that. We don't care about it, I could almost say.

But most of them are so full of respect, so they won't say anything

Feedback is possibly given through the students results. Feedback according to the supervision situation or the students' expectations is not something most supervisors' even imagine. Sometimes they can get feedback after a while:

You don't get it at once, that is something you notice after quite a while. I think so, even sometimes after the dissertation and a long time after that.

Many of the supervisors profess themselves to have developed a mode of supervision on their own, without assistance or any form of training. Most of them have never attended any organized supervision education and would never have attended if offered. A great deal of them claim, that being a researcher is enough, by doing research you become a good supervisor:

Always when it concerns teachers in higher education and so, people stress the pedagogical part, they do, don't they. That's totally absurd. There is nothing but one thing that matters, and that's what your knowledge is.

You must be a good researcher. You may be as pedagogical as possible, but if you don't have the capability to identify what is modern research, interesting questions and so on, then you don't get anywhere as a supervisor.

As postgraduate students, some of them got help from other students. In the past, there were no courses and they had to develop a strategy by themselves:

In a way I dare to say, I never had any supervision

I think I got my Ph D in spite of my supervisor

I think I found my way of working all by myself

I haven't got any influences at all how to supervise, it is homemade.

Developing supervision

In several courses with less experienced supervisors and in different meetings with other academic staff developers, the question about sharing experiences between supervisors has been frequently discussed in the past years. The more experienced supervisors do not attend courses together with the less experienced and supervision very often still takes place in privacy. Different kinds of networks for supervisors exist. In the supervisors' opinion, the best are those organized by the supervisors themselves, not by the organization.

One way of developing supervision in Sweden is the common use of individual plans for studies, a kind of contract where the progression in research and

education should be noted. In some places, the contract also includes the progression of the supervision relationship, demands from both sides and their fulfilment. However, the needs and solutions are, and have to be, different. "It depends", both on an individual and an organizational level. If supervisors are made aware of and understand how they act, they will hopefully be able make necessary adjustments themselves. One have to conduct ones own supervision.

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Should Publication be a Compulsory Component of Australian HDR Programs?

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The character and aims of postgraduate research are the subjects of much debate (Johnstone 1997); in particular, whether the value of the PhD is: the outcome - the new knowledge contributed to a research field; or the process - the research training afforded to postgraduate students. Scientific research typically aims to address a specific knowledge gap or industry problem; as such, publication completes the research act by disseminating the research findings. Sadler (1984) described the need to communicate, to share insights and to learn from others as an indispensable element of scholarship. The extent to which the knowledge and expertise gained through the doctorate is disseminated is a key issue for postgraduate students, their supervisors and academic institutions (Dinham and Scott 2001). Dinham and Scott (2001) have questioned whether the personal and social investments in postgraduate research translate into greater knowledge, or whether doctorates simply gather dust on shelves. There is also the financial investment to consider; both the funding and resources provided to postgraduate research programs by the Australian Research Council, National Health and Medical Research Council, industry research and development corporations and Universities, as well as in-kind contributions made by industry partners (through access to field sites or unique experimental samples, for example). These organisations and partners typically expect financial investment to translate into tangible research outcomes, to be disseminated through publication.

Publications and grants are Universities' benchmarks for successful research. Publications in particular can be considered the currency of research, both directly (as research income) and indirectly (through increased grant competitiveness). Since postgraduate students account for a significant proportion of University research, perhaps as much as 70% according to Siddle (1997), an increase in HDR publication rates should equate to an increase in University publication rates, and ultimately research funding potential.

Table 1. Higher Education Research Data Collection (HERDC 2007) compiled for the School of Agriculture, Food and Wine, University of Adelaide, between 2002 and 2006.

Year of Publication	Number of Publications	Author Type ¹		
		Internal	Student	Both
2002	129	259	20	1
2003	170	371	18	37
2004	150	291	7	0
2005	116	226	9	0
2006	185	361	39	5

¹Internal = employed by the University of Adelaide or with a University of Adelaide by-line; Student = University of Adelaide student; Both = employed and studying at the University of Adelaide.

The School of Agriculture, Food and Wine provides a world-class concentration of scientific research, education and infrastructure across the Waite and

Roseworthy Campuses of the University of Adelaide. The School fosters a strong, productive research program and its research outputs between 2002 and 2006 included, on average, 150 refereed publications per year (**Table 1**). However, consideration of the authorship of these publications suggests a relatively small proportion actually involved HDR research. A pilot study was therefore undertaken to investigate the role of publication in the HDR program, with the aim of improving HDR publication rates within the School of Agriculture, Food and Wine.

The publication experiences and expectations of HDR students and supervisors from the School of Agriculture, Food and Wine were explored through structured questionnaires. Participants were asked to rate their responses (using Likert scales) to a series of statements relating to postgraduate research and supervision, and writing perspectives, barriers and difficulties. Responses were obtained from 20 HDR students and 13 supervisors working within agriculture based science disciplines. The student cohort largely comprised fulltime, internal students, with: 13 females and 7 males; 6 students in their first year of candidature, 7 in their second year of candidature and 7 in their third year of candidature (or later); half the students were aged between 20 and 29 and likely commenced their PhD following on from their undergraduate studies, whereas half were aged 30 or over and are likely to have returned to University to undertake a PhD following employment. The supervisor cohort comprised: 9 males and 4 females; with 5 lecturers, 6 senior lecturers and 2 associate professors, and a broad range of supervisory experience (**Figure 1**).

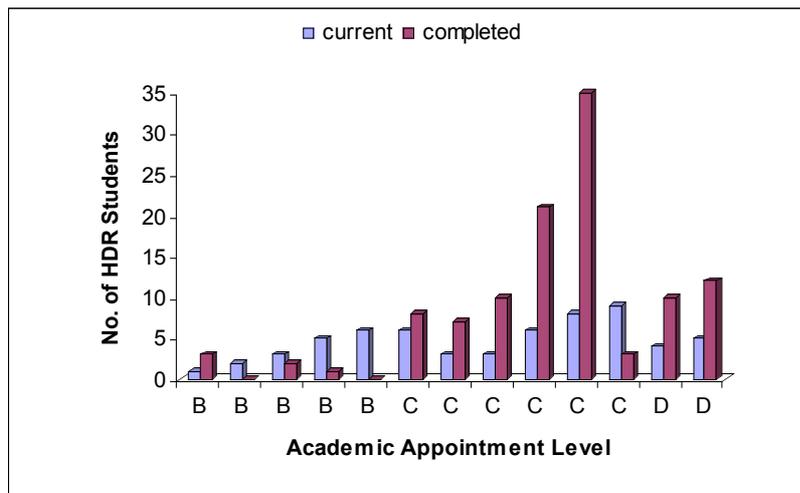


Figure 1. HDR Supervision by Academic Level.

Student responses to perspectives on postgraduate research suggested experimentation and data collection are valued more highly than completion of the thesis and publication of research findings. Supervisors considered experimentation and data collection to be equally as important as publication, and interestingly, of higher value than completion of the thesis. Students and supervisors indicated a greater confidence in students' laboratory and technical skills, than in students' writing skills. Surprisingly, no correlations with age, gender or PhD progression were observed with regards to students' perspectives on writing. In general, students agreed that it was useful to obtain feedback from others, that they sometimes experienced writer's block, that they usually completed several drafts of their writing, but were usually pleased with the final version. As would be expected, some students indicated they experienced difficulties with particular aspects of writing; content, structure,

referencing or formatting, for example. However, no specific writing barriers or difficulties were highlighted as particular issues by either students or supervisors. Although there was agreement that students needed to write regularly and throughout their candidature. With regards to writing development, students considered their supervisors and the scientific literature to be the most valuable resources available to them. Supervisors were in agreement, but also considered other academics, theses from previous students and the University's Graduate Centre to be useful resources. Students and supervisors largely agreed that the role of supervisors should include mentoring writing development, providing encouragement to write regularly, reading and editing students' drafts and providing constructive feedback. In the current study, students believed supervisors met these responsibilities, within reasonable timeframes and without being overly critical.

Of the 20 students surveyed, 19 indicated that they had discussed publication with their supervisors. All 13 supervisors surveyed indicated that they had discussed publication with their students: 12 from the start or continually throughout candidature; and 1 during their students' final year of candidature. Interestingly, 7 of the participating students had already published aspects of their doctoral research. As might be expected, the published student group included 4 students in their third year of candidature and 5 students from the 30+ age group. The majority of students (16 of 20) indicated that they expected to publish their research findings prior to submission of their thesis. The majority of supervisors (12 of 13) had similar publication expectations of their students. Indeed, most supervisors not only expected their students to publish prior to thesis submission, but also targeted a specific publication output per student: 1 supervisor targeted a single publication; 4 supervisors targeted two publications; and 5 supervisors targeted three or more publications.

When questioned about the role of publication, student responses indicated a clear awareness that publication was both expected and highly valued, particularly as an indicator of the quality of their research. Furthermore, students recognised and appreciated the personal and career benefits associated with publication. However, both students and supervisors agreed that students lacked the academic writing skills with which to meet publication expectations. This is in agreement with Mullen (2001) who suggests students are not typically taught how to acquire academic writing skills. When asked to indicate whether or not publication should be a PhD completion requirement, more than 55% of students and 60% of supervisors agreed or strongly agreed that it should be a doctoral requirement (**Figure 2**). This was in contrast to the anticipated response, that supervisors would likely support a publication requirement, but not students. Understandably, the arguments against such a requirement largely concerned existing time constraints on HDR students, the unpublishable nature of some research and the potential implication of embargoes.

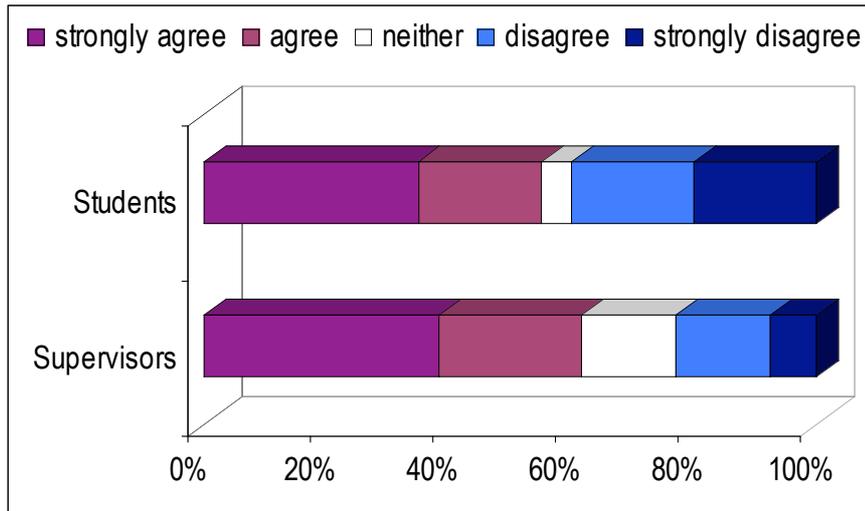


Figure 2. HDR student and supervisor responses to the statement: Publication should be a PhD completion requirement.

In Australia, science based disciplines typically exhibit the highest HDR completion rates (NBEET 1989). This is likely to be attributable to more highly structured research projects within science fields, as compared with humanities, arts and social sciences fields. However, since scientific research typically involves field and/or laboratory based experiments, there is likely a greater focus on development of laboratory and technical skills, with less emphasis placed on writing development. As such, many science based HDR students may need additional support to improve their writing skills to a level appropriate to achieve publication. James and Baldwin (2006) suggest the practices of effective supervisors include taking an interest in students’ careers and that as such, the supervisory role should include: developing technical and writing skills; assisting students assemble a publication record; introducing students to academic networks; and developing and maintaining a research culture. Therefore, irrespective of whether the value of a PhD lies in the outcome or the process, publication represents an important attribute of scientific research. Supervisors and Universities could facilitate HDR publication by providing greater support and mentoring to students; particularly since both would stand to benefit from increased publication rates, both financially and through improved research track records. Dinham and Scott (2001) have clearly demonstrated a link between publication success and supervisor/institutional support. Where supervisors provided support to students and institutions had specific policy relating to publication, improved student publication rates were observed both prior to and following graduation (**Table 2**).

Table 2. Association between publication and supervisor and institutional support (Dinham and Scott 2001)

		Published	
		As a student	As a graduate
Supervisor support	Yes	77%	91%
	No	44%	50%
Institutional policy on publication		91%	100%

Most literature relating to publication concerns the issues of authorship eligibility and order (Murray 1998, Sandler and Russell 2005) and these issues are similarly reflected in most Australian Universities' publication guidelines and policy. To date, University policy does not include publication as a PhD requirement. However, the importance of publication has been recognised and incentive schemes have been initiated by some Universities to encourage postgraduate students to publish their doctoral research findings. These include: financial contributions towards the expenses associated with attending national or international conferences; stipends to pursue manuscript preparation during the thesis examination period; and publication and grant writing fellowships where Universities want to retain promising early career researchers. While there is clearly a financial burden associated with such schemes, presumably this is compensated through increased research income (either directly or indirectly) and research profile.

A definitive answer to the question "Should publication be a compulsory component of Australian HDR programs?" is not offered at this time, given the limited scope of the pilot study; specifically the focus on a single, science oriented School and participation rates. However, the responses obtained clearly indicate that both HDR students and supervisors acknowledge the importance and value of publication. On this basis, while it may be too early for University policy recommendations, there are certainly actions that could be applied at a School level to encourage and support HDR publication. The inclusion of publication as a doctoral requirement warrants further consideration, at this time.

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Encouraging Postgraduate Students of Education to Cross Conceptual Thresholds and Achieve Threshold Concepts in Their Research

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Abstract

Most research into threshold concepts (Meyer & Land 2006) concentrates on undergraduates learning in the disciplines. Our work (Wisker et al, 2003, Wisker & Robinson 2007) concentrates on postgraduate student learning, and to date has considered research design, supervisory interactions, research development programme support, writing, communities of practice and examinations. Early work which underpins a large cross-university NTFS project (2007) reported here focuses on the learning and supervisory support for that learning of postgraduates researching in the field of education and relates to considering research carried out with PhD students and their supervisors. Like the larger projects, this research with students and supervisors in education builds on the underpinning theories of threshold concepts and the crossing of conceptual thresholds (Meyer & Land 2006, Wisker, Kiley & Aiston 2006, Wisker & Robinson 2006).

Students of education are frequently concerned with exploring notions and practices of student learning, their own practice, and on development or improvement of practice in context. In the process of conceptualising, designing, undertaking, interpreting data and drawing conclusions from their research, they are quite likely to meet challenges to received opinions and established working behaviours, and to experience moments of fundamental challenge to their ways of thinking and being in the world, as educational practitioners. This paper considers the ways in which several postgraduate students of higher education, as practitioners, have, with their supervisors identified such challenging moments, engaged or attempted to engage their work at a more conceptual level, and have experienced both epistemological and ontological challenge and change as a result.

Context

There is now a large body of work on the ways in which threshold concepts can be seen as markers for the transition of undergraduate students in specific discipline areas into conceptual, critical and complex thinking and working in their discipline. The arguments about threshold concepts in students' development suggest that there are moments of liminality when students pass through stages of understanding and learning to reach a transformed more conceptual state of learning. This transition can be troublesome, and it leads to transformation. The student does not then return to a less complex way of thinking about and working in the discipline since the transformation is permanent and affects ontology - their sense of identity and being in the world, and epistemology—their understanding about, and contributions to, knowledge construction. Earlier and ongoing work focuses on conceptual threshold crossing, moments in the doctoral learning journey when students begin to work at a conceptual rather than a merely busy level. A large scale UK Higher Education Academy, National Teaching Fellowship Project funded research study is underway in the UK-based at the University of Brighton and Anglia Ruskin

University, which seeks to explore conceptual threshold crossing in four discipline areas. This early work, reported here Involved supervision of, and research carried out with, students of Education at PhD and EdD level has indicated that there could be some issues to do with the perceptions they have of the reasons for and nature of their research, and issue to do with their approaches which might hinder some students from crossing conceptual thresholds in their work.

Education students tend to mix research work with professional practice. Some work on their own professional practice and so need to juggle and balance the professional practice element (often continued as the day job) and researching that practice. They are often researching change in practice- and need organisational buy in for that to occur and be supported.

Of those some engaged in professional practice research could find that their identity as professional practitioner can be confused with that of the researcher, that they are too close to the work being studied ie often their own practice, or practice in their own work context and ownership. The political context of the workplace can affect both the research project and its conduct and can throw up powerful ethical issues.

Methods

This is early work and we intend to build a larger and more robust data base. Interviews were conducted face to face or by email with 15 Education research postgraduates in the UK, Australia and the Caribbean (PhD or EdD). Data collected from a large sample of PhD students studying on an international PhD in a cohort, where action research accompanied the supervision and research development programme over the period 1997-2008 was re analysed to focus on the concerns and experiences of those undertaking Education PhDs. For the purpose of this early research study the information was analysed and interpreted and turned into **case studies** to represent students whose work might be cause for concern, so that ways of working with these students could be considered. Considerations of ways to work with the students will form the basis of future interviews with supervisors. The case studies formed part of the presentation at the QPR conference but are not included here.

What has emerged so far, however, provides some fascinating information and ideas about some of the difficulties, identity and contextual clashes faced by postgraduate students of Education, and some of the issues of conceptual enough levels of work which are perceived as achievable.

Potential problems for level of the work which have emerged:

- Too close to the problem/project/question and the population
- In researching own practice and own context, difficulties of separating experience and theory arise
- Practical solutions emerge too early – even before the research questions are formed and can take over from conceptualisation of problems, conceptual conclusions
- Desire to produce recommendations and practical outcomes
- Desire to proselytise about success-celebrate rather than conceptualise
- Politics at work
- Time pressure juggling the two
- Rhythms of research, writing it, professional practice

In considering the research of Education postgraduates we could ask what kinds of issues do these EdD and Phds experience that relate to:

- Ontology?
- Epistemology?
- Professional practice versus, or in relation to, research
- How do they exhibit e.g. irreversible, transformative?
- Experiences an expression of their work?
- What concerns might we have about their work and their processes, from research questions to design to data collection, analysis and interpretation of findings?
- How can we help enable this work to become: conceptual, critical, creative?

Some things which might hinder students from getting across the conceptual thresholds

These were classified under three main classifications, which have emerged from earlier work as reported at the QPR conference in 2002. Learning, Personal, and Institutional. The issues often cut across more than one of these classifications:

- **(Learning)** Intellectual challenge - Avoiding contradictory or negative results – although the challenge they present can encourage a more conceptualised approach
- **(Personal and institutional)** Human interactions and game playing - Breakdowns in communications with supervisors or in the work – ‘I never understood a word she said’; repeatedly returning ‘rewritten’ work without taking feedback on board; playing one supervisor off against another
- **(Personal)** An overload of change and family life work pressure which prevent higher level conceptual engagement
- **(Institutional)** An over ‘course’-based or bureaucratic approach which forces stages of work, completion, too quickly or at the wrong pace for the individual
- The ‘Casaubon’ effect (avoiding engagement with other researchers, critics and published work so as to confirm rather than possibly query own results)

Questions by way of conclusion

Readers might consider further questions which we asked about the nature and scope of the research undertaken by education postgraduates, their engagement with their own practice and context, and ways in which we might identify their crossing of conceptual thresholds and so working at a conceptual, critical, creative postgraduate level, and how we might also determine the things we as supervisors or research programme facilitators can do to help them make this transition. We asked:

- What is the evidence of conceptual threshold crossing and the articulation and actioning of threshold concepts in relation to education oriented research in practice?
- What could be done to enable postgraduate students to engage with theoretical perspectives, methodology, ideology, ontology development and epistemological knowledge creation so that their own work can emerge at a conceptualised level, engaged and original enough? Especially when this relates to professional practice?
- What do you do? What can we do? What can the student do? What can the institution do? To enable conceptual critical and creative enough postgraduate

research work and thesis completion - and the development of competent enlightened enough researchers?

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Challenging Boundaries – Linking Research Education to Industry and Academic Innovation

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Introduction

Research education in the last decade has been marked by an increasing commitment to the place of generic capabilities in its offerings. Higher education policy continues to fuel this commitment, reflecting developments in the national economic area including the emerging skills shortage and the consequent urgent need for workplace-ready research graduates who can readily apply their knowledge and who have the breadth of skills to lead innovation in the knowledge economy.

The level of commitment to the inclusion of generic capabilities has improved over the period but inconsistencies still remain in the degree of uptake within Australian universities. Generic capabilities and their position in the research education agenda are but one of questions demanding resolution as universities grapple to shape the 21st century PhD.

This question is part of the larger one: the range of knowledge and attributes that research graduates need to acquire so that they can fulfil their requirements at a personal level and in the wider social sphere of the workplace. In considering this question, research educators and policy makers almost universally acknowledge generic capabilities in their responses but increasingly add a rider; generic capabilities are best developed as embedded aspects within the candidate's research project and integral to it.

Underlying this discussion is a widening recognition of the value of collaboration and networking in providing the resources necessary to support the range of knowledge and attributes to be made available to this 21st century graduate.

ATN LEAP to the e-Grad School

Within the five universities of the Australian Technology Network (ATN), the consensus from 1999 onwards is to address two domains, based on a set of shared principles (See Appendix A):

1. Supervision and support in the skills that each research student needs for thesis completion (whatever the type of thesis, crossing the range from highly specialised and discipline based to interdisciplinary), and
2. Preparation for careers, including acquisition of additional skills.

The Learning Employment Aptitudes Program (LEAP) initiated in 1999 has been a trailblazer in the provision of career preparation, with generic capabilities embedded within the research experience. It provides an exemplar of a resource attuned to demands from students, universities, government and industry, as evidenced in DEST support for its analysis and enhancement and a 2007 Carrick Institute award for Postgraduate Education. From its inception, the modules in the online program have been designed to make strong links between generic capabilities and the research student's prime concern: completion of the research project.

The success and sustainability of the LEAP program caused the five ATN Deans of Graduate Studies to develop further online modules on research design and methodology, addressing the skills that research students need for successful thesis completion. The Modules Online for Research Education (MORE) program commenced in 2003.

Interest in ATN LEAP led to the Department of Education Science and Training DEST funding a study which included a report on ATN LEAP development and implementation, using ATN LEAP as the basis for models of (1) a generic capabilities program (2) collaborative development and (3) online offerings. (See Borthwick and Wissler, 2003).

The track records of ATN LEAP and ATN MORE and the other research education resources being developed by the ATN partners provided a foundation for the construction of a virtual graduate school where postgraduates, supervisors and universities within and outside the Network might have online access to resources and activities relevant to their needs. In 2005 the Collaboration and Structural Reform Fund awarded funding for a pilot project for the development and trialling of the e-Grad School (eGSA); online access to these resources is now available to universities in Australia and globally through <http://www.egradschool.edu.au/>. These resources are built around the continuing commitment to the development of research students' capabilities and their future employability.

2007 saw the introduction of the e-Grad School's first award course, the Graduate Certificate in Research Commercialisation; students from 12 Australian universities have enrolled in the course, with 30 graduating already. In 2008, the Cooperative Research Centre Association has endorsed the Graduate Certificate for CRC research students. The Masters of Research Management will commence in 2009.

The full current range of e-Grad School resources comes online throughout 2008 with others to be added in future, further linking research education and industry and academic innovation.

Appendices

Appendix A. The principles supporting the ATN Deans and Directors of Graduate Studies' design of a program that covers the two domains are:

- Shared identification of areas of collaboration; forward planning
- Commitment to sustained collaboration in these areas; pooling resources and expertise to produce quality resources
- Use of e-learning to provide equity in access to all research students
- Structured programs are essential
- Link to the research student' project
- Support for supervisors
- National networks to enhance peer learning
- Continuous improvement and expansion of resources to broaden support to research students

Appendix B. e-Grad School available to Australian and International Universities and institutions

Award Courses:

Graduate Certificate in Research Commercialisation

Other components:

- **ATN LEAP – Learning Employment Aptitudes Program**

- Entrepreneurship
- Leadership and communication
- Research Commercialisation
- Project Management
- Public Policy
- Global Sustainability

- **ATN MORE - Modules Online for Research Education**

- Ethics
- Risk Management
- Critical writing
- Critical and creative thinking
- Practice-led research in Arts, Media and Design

- **Info-Scholar**

The modules in this course guide postgraduate students (and also staff) in their development of the advanced information literacy skills required for research activity in the changing information environment.

- **Teaching @ University**

These modules are expressly designed for research students who are starting out as tutors; they provide an introduction to the basic skills needed to fulfil that teaching role.

- **Maximising Your Career**

The modules are created by an experienced team led by Australia's first careers advisor dedicated solely to providing postgraduate research students with career planning and preparation appropriate to their needs.

- **Supervisor Solutions**

The modules in this program offer supervisors support in key aspects of supervision practice. They can be used for self-directed professional development or where universities require supervisor accreditation; this program offers a means to demonstrate evidence of achievement.

Each of these components extends the boundaries of the traditional model of research education.

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Abstracts

Constructing an HDR Curriculum

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Abstract

Research degrees are an example of what Donald Schon calls 'learning by doing' in that one learns about research through actually undertaking research. One implication of this is that both what is learnt about research and how such learning occurs can remain implicit and unrecognized within the research process. Such learning is rarely made explicit except in those instances where something goes wrong or a deficit in knowledge becomes evident.

This paper will report on a project underway at RMIT aimed at improving research degree candidates' understanding of what and how they are learning. The project takes the position that doing a research degree insofar as it is about learning and knowledge is to be understood as a research education. The first phase of the project involved the creation of a research curriculum aimed at providing a framework for understanding the process of learning and knowledge generation and the development of research and generic capabilities involved in undertaking a research degree. This paper will explore the paradox of attempting to construct a curriculum for research activity and discuss how this and other issues have been addressed.

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Towards Becoming a Research Writer: Conversation as Doctoral Pedagogy

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Abstract

With writing increasingly positioned at the heart of conceptions of doctoral 'becoming' and knowledge production, we see it as important to find out more about supervisory practices that inspire and facilitate writing by doctoral students, especially writing that occurs throughout the candidature and contributes to the thinking involved in developing a research thesis.

This paper presents supervisors' and candidates' accounts of conversation as a pedagogical practice that can generate both research thinking and research writing. These accounts are drawn from transcripts of interviews conducted with supervisors and doctoral candidates both separately and together, individually and in groups. Where possible illustration or elaboration is provided through reference to actual supervisor-candidate dialogue.

The data are taken from an ongoing study of support for research writing in the Division of Education, Arts and Social Sciences in the University of South Australia. The candidates are at various stages of the doctoral process, and are diverse in age, gender, nationality and research field. The analysis brings together constructs from Vygotsky and Bakhtin in an attempt to uncover the characteristics of conversation as doctoral pedagogy across such diversity. It shows how such conversations facilitate both knowledge production and academic identity formation.

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Research Training Agendas: Policies, Practises & Experiences of Key Stakeholders

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Abstract

Research has become core 'business' of the university sector in New Zealand as central government allocates public funding to tertiary institutions according to the Performance Based Research Fund (PBRF). The quantity, quality and relevance of knowledge production, measured by research output, is a strategic attempt by the government to achieve its aim that "...New Zealand is a high income, knowledge-based economy, which is innovative, creative, and which provides a unique quality of life to all New Zealanders." (Tertiary Education Commission, 2007, p. 8). Government research training or postgraduate research policies have been reformulated in an attempt to ensure this aim is achieved and sustained through the work of future researchers. Consequently, 25 percent of the PBRF is dependant on the quantity of masters and doctoral research completions.

This funding model has generated tensions among institutional strategies, policies and procedures designed to simultaneously increase the quantity of research completed by both academic staff and postgraduate students; reduce the time taken to complete research; and maintain desirable qualities in terms of research processes, research outputs and researchers. These expectations have placed increasing pressures on faculties, schools, departments, disciplines, supervisors, postgraduate researchers, academic advisors and support staff.

This paper briefly discusses some of the government and institutional policies, procedures and funding models driving the landscape of postgraduate research in New Zealand. It then considers the practises and experiences of supervisors, postgraduate researchers, academic support staff and employers operating within this 'business' model of knowledge production.

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The PhD Oral Examination – the New Zealand Experience

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Abstract

The doctoral oral examination represents the culmination of the examination process which not only provides the ultimate test of quality assurance but also is educationally rewarding and personally satisfying. Although the work embodied in the thesis is normally the major basis for determining the award of the degree, the oral examination provides greater transparency to the overall examination process. The major objectives of the oral examination include:

- To provide the opportunity for the candidate to clarify points of principle or of detail in the thesis
- To assess the contribution made by the candidate to the content and presentation of the thesis
- To test the candidate's comprehension of the broader context of the research

There is huge variation in the nature of the thesis oral examination process - ranging from pre-submission to post-evaluation oral examination. In all New Zealand universities, the oral examination is conducted after obtaining the written reports from the examiners. The oral examination is moderated by an independent convenor who is having extensive experience in the supervision of doctoral students and examination of thesis. This paper covers the senior author's experiences as a doctoral oral examination convenor, and the issues addressed include: the composition of oral examination panel and the roles of individual examiners; the purpose and nature of the oral examination, the post-oral examination discussion and decision. The paper illustrates the value of the oral examination as an integral part of the examination process in relation to quality assurance.

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Skills for a global environment: collaboration, content and compulsion in a university doctoral skills programme

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Abstract

In 1998 Meaghan Morris called for universities to admit that “practical skills are required to negotiate the world of competitive research, and that most of these skills can be taught and learned” (p.499). Specifically, Morris referred to emerging academics and doctoral students: high-level researchers who need to acquire certain skills in order to successfully compete in the global environment. The issue of graduate skills acquisition has lately been at the forefront of discussion around doctorates: in Australia (Manathunga and Wissler, 2003; Gilbert et al., 2004), in the United States (Austin, 2002), the United Kingdom (Park, 2007) and in New Zealand (Coster 2006). In March 2007 the University of Auckland launched a ‘Doctoral Skills Programme’ (DSP): a collaborative venture by the School of Graduate Studies, the Centre for Academic Development, Postgraduate Careers and the Library. The programme is open to all doctoral students and has a compulsory element: a one day induction into the doctoral programme for incoming doctoral students. The DSP followed 18 months’ internal discussion around the theme of ‘generic capabilities’ and was established within the context of the institution’s stated desire to increase the number of doctoral completions to 500 per year by 2012; part of this growth is achieved through targeted recruitment of PhD students from beyond New Zealand. This paper aims to give some background to the Doctoral Skills Programme’s establishment and governance, and outlines the content of the compulsory induction day, finishing with an overview of the students’ comments on their experience of the day.

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Relationships Between Doctoral Students' Metacognitive Beliefs and Their Experiences During Candidature

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Abstract

Two hundred and sixty-three currently enrolled PhD students from two universities completed a series of online questionnaires relating to a number of aspects of their candidature as well as self-reported metacognitive beliefs. Included among the metacognitive beliefs measured were those relating to affect (coping, efficacy), disposition (metacognitive awareness, epistemology and need for cognition), and process (volitional control, acceptance of responsibility and procrastination). Among the experiential measures were elements such as candidature status, length of enrolment and broad field of study. Analysis of the responses to the metacognitive questionnaires indicated that as a cohort, the students presented as sophisticated learners. Subsequent cluster analysis indicated that within this broad profile, two clusters could be identified. These clusters could be discriminated on the basis of component scale scores rather than other independent factors. Cluster 1 presented as holding the more sophisticated array of metacognitive beliefs. Experiential measures (candidature status (F/T cf. P/T), length of candidature and broad field of study) were then related to individual scale scores within the three areas of affect, disposition and process. The analyses are discussed in relation to both the relative independence and stability of the metacognitive profile reported by doctoral students, and the implications of this for supervisory practices.

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Developing Publication Capacity: An Integrated Model for an Inclusive Academy

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Abstract

The importance of publishing research articles in internationally refereed academic journals is well-recognised, and recent worldwide emphasis on the assessment of research outcomes has added new significance to this practice. The pressure to publish can be viewed both as a driver of action, and as a focus of academic investigation in its own right. There is a growing literature on the topic, much of it focussing on helping those outside the international academy, especially in periphery contexts, to gain access to it – for the benefit of both individual scholars and the academy itself. However, given that what any researcher sees is necessarily determined by where they stand, we argue that the picture as currently presented lacks appropriate complexity and sufficient acknowledgement of the role of the viewer.

In the interest of promoting an inclusive academy, one that seeks not to exclude but to encourage participation from diverse locations and perspectives, we propose a multi-faceted model for developing publication capacity that takes into account three diverse sets of participants: a) the academic gatekeepers and commercial interests which control the practice of academic publishing; b) the authors of submitted manuscripts, in all their variety, and c) those supporting the authors, as mentors, teachers, supervisors or other providers of advice. We explicitly acknowledge our own point of entry for analysis as located within a collaborative and language-based approach, while also suggesting a range of other possible entry points. The paper concludes with recommendations for advancing inclusive publication practices, through policy making, professional development and research.

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Managing the Quality of Research Education in Different Environments

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Abstract

Universally universities are striving for more research output, and to this purpose are energetically erecting support for doctoral students (Carter, 2006; Denholm, 2007). At this institution we train supervisors to supervise (Grant, 2005), and doctoral students to manage supervisors. We also have developed a good generic support for doctoral students through a coordinated Doctoral Skills Programme (DSP). Thus supervision's individual support has been firmed up and so has across-campus support. But what of the middle tier: departmental support, not quite individual but discipline-specific? Currently this occurs in an ad hoc manner with some departments doing extremely well and others being less active. Departmental Graduate Advisors (DGAs) are given training but are variously busy and may find it hard to establish a departmental research community. This paper investigates the ways that the institution might strengthen the role of Departmental Graduate Advisors (DGAs), specifically how the Student Learning Centre tertiary advisors might develop material to facilitate better departmental support of doctoral students. What sort of material would DGAs find most useful? What are their prime needs? How can learning advisors best design material for some one else to use for teaching purposes? Where are the lines drawn between what can be taught generically by tertiary learning advisors and what can best be taught within departments by DGAs?

Keywords: quality of doctoral support, departmental versus generic support

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Opening New Spaces for Research Education

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Abstract

The traditional practice of 'supervisor meeting with student' has become a standard model for research mentoring of doctoral students. Performance-based changes in the research education environment have resulted in new expectations of supervisors who simultaneously work with increasingly diverse student groups (Pearson 1999). This has contributed to new tensions in supervisor-student relationships. Alongside an increase in the quantity, complexity and variety of academic work (Tierney 2003) there is now an increased surveillance of the traditionally 'private' space of supervision via a range of administrative, reporting and 'professional development' obligations (Manathunga 2005, 20).

Supervisors are increasingly responsible for promoting discourses of commercialisation and performativity (Holligan 2005) and for integrating practical and professional knowledge with scholarly writing. Yet the quality of supervision continues to be seen as the 'critical factor' for student satisfaction, research completions and attrition rates (Hasrati 2005; see for example Ives & Rowley 2005).

This forum seeks to open new 'research territory' (Malfroy 2005) for doctoral work, by exploring the different spaces in which research education might occur, such as audio (radio), geographical (beach walking group), social (writing groups, interdisciplinary curriculum, peer support) and virtual (online) spaces.

The exposure to multiple research communities should complement the traditional supervisor-student relationship but may equally create new complexities and tensions for doctoral students and supervisors. As students are introduced to the research paradigms, methods and experiences of others, interpretations of their research may change. What counts as expertise and who has authority can be contested. This forum will engage with these questions among others, through café conversations.

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Polarity in Research-based Postgraduate Students' Persistence and Withdrawal Behaviour.

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Abstract

The aim of the study was to do an institution-wide survey of the state of research-based postgraduate education at the University of Pretoria as seen by its senior postgraduate students (research-based masters and doctorate candidates). This paper reports on research completed during 2006.

The research was completed in two phases and targeted both current research-based masters and doctorate candidates, as well as those candidates who opted to cancel their postgraduate studies. The first phase made provision for an exploratory survey of current research-based students' satisfaction regarding their current postgraduate experience. Some 2850 students were targeted, eliciting a total of 482 responses (17%). A customised student satisfaction approach (Student Satisfaction Manual, Open University Press, 1997), covering nine key areas in postgraduate study was used. The approach is unique in combining student-determined questions, satisfaction and importance ratings, and management information for action. The questionnaire was piloted before its launch among academics and postgraduate students. The trends emerging from this survey were cross-validated using a range of focus group discussions in each faculty.

The second phase was associated with telephonic interviews with candidates who chose to permanently withdraw from postgraduate studies. A list of all research-based postgraduate withdrawals (between January 2003 and 31 May 2006; N = 197) was retrieved from the UP database. Interviews were conducted with 79 students (sample size: 40%). Interviews were audio-taped for purposes of recordkeeping and moderating during and after data capturing. A semi-structured instrument was used.

The findings from the two phases were consistent and highlighted a number of key needs, including general information needs (programme, facilities, funding, access); key academic information services (electronic information resources, subjects specialist support, selection of reference material, loan periods); clarification of roles and responsibilities of role-players associated with the postgraduate episode; inclusion of postgraduate students into the research community; structured supervision and support (especially during proposal development and approval stage); the revisiting of current training and development programmes in research methodology skills, academic writing, and editorial support; smaller postgraduate supervisor; student-ratios; improved connectivity for postgraduate students; acknowledgement of the personal circumstances of postgraduate students; and accommodation and parking arrangements for postgraduate students on campus.

The research highlighted a relationship between three key variables. Students that have not developed the ability to manage their time, as well as their personal circumstances and other responsibilities properly, find it difficult to focus on the selected research topic, which leads to either their not completing their studies in the prescribed time, or eventual withdrawal. These students tend to transfer the responsibility to supervisors by demanding a more structured approach in supervision. Students' experiences of their postgraduate

exposure are determined by two drivers, namely students' level of satisfaction with their postgraduate experience, and their ability to cope with the collective realities associated with postgraduate studies. A number of events/causes trigger four typical categories of persistence behaviour. These causes determine whether students withdraw, continue, complete and return to UP to further their higher education. A model is proposed to explain these behavioural patterns.

Keywords: Research-based; postgraduate; persistence; withdrawal; student satisfaction approach.

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Student Profiling Module ORBIT System – The University of Adelaide

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Abstract

The proliferation of data across multiple computer systems in a Tertiary Institution presents many challenges to decision makers wanting to integrate data sets into meaningful information. Core information systems across an institution tend to provide faculties and business units with good operational capacity in the functional area for which the system was designed. However, this tends to deliver data silos that contribute to duplication of data and barriers to information sharing. The University of Adelaide has embarked on a major project to improve the access and value of Research data held across its various core information systems. The Operational Research Business Information Tool (ORBIT) amalgamates Research data from the University's core systems and presents it in an integrated view through an intuitive browser based system. This presentation demonstrates the functionality of the first module of ORBIT (Student Profiles Module) and the various information that can be accessed.

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Carrick Showcase: Enhancing Doctoral Students' Graduate Attribute and Career Development

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Abstract

Providing doctoral students with structured opportunities that enhance their graduate attribute and career development during their candidature is a relatively recent activity in countries where coursework has not traditionally been part of research higher degree programs (Borthwick & Wissler, 2003; Cryer, 1998; Gilbert, et al., 2004). This showcase, sponsored by the Carrick Institute, will outline two innovative programs that are designed to enhance doctoral students' graduate attribute and career development. The UWA Postgraduate Teaching Internship Scheme and the Research Student Virtual Portfolio (RSVP™) won Carrick Awards for Programs that Enhance Student Learning in the Postgraduate Education category.

The UWA Postgraduate Teaching Internship Scheme is a year long program designed to prepare doctoral students (24 interns annually) to teach in higher education and compliments their research training. Interns participate in a comprehensive professional development program (paid) that introduces them to teaching and learning while concurrently engaging in a planned program of teaching experiences. RSVP™ is an educational, career development package designed to develop research students' graduate attributes (Manathunga et al., 2007). Through this package, students have access to systematic career development tools that go beyond a focus on the PhD project itself. It provides a flexible, time-effective process for students and advisors to implement plans for a research student's acquisition of key interdisciplinary graduate attributes highly sought after by employers. In this showcase, the programs will be described and illustrated with feedback presented from multiple sources that are evidence of their success.

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The New Global is Also Local: The Supervision of Indigenous Doctoral Students

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Abstract

We describe research that investigates theoretical, cultural and practical questions about the supervision of indigenous doctoral students in Aotearoa New Zealand (ANZ). For some time and in various forums, Māori doctoral students have consistently reported significant concerns related to supervision. Responding to these concerns, as well as to a national imperative to increase the number of Māori doctoral graduates, we have asked current and recently graduated students to talk their experience of supervision. We particularly asked them to describe teaching and learning practices within that experience. This paper shares preliminary findings from carrying out interviews and focus groups with about 40 Māori doctoral students from several institutions and across a wide range of disciplines.

Our research team represents a partnership between Māori and non-Māori researchers who are also doctoral supervisors from two universities and one *whare wānanga* (Māori tertiary institution). Another partner is the national Māori doctoral programme, MAI Te Kupenga (www.mai.ac.nz) coordinated by one of ANZ's centres of research excellence, Ngā Pae o te Māramatanga. In undertaking this research, we want to understand the distinctive issues that may arise in the supervision of indigenous students within a post-colonial context, including how cultural matters and contested social relations intersect with research methodologies and practices. While supervision is in many senses a global practice, especially because of a preference for 'travelling away' for doctoral education, it is also at times deeply local.

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Supervision and Cultural Difference: Unhomeliness, Transculturation and Assimilation

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Abstract

Supervision across cultures is a feature of new and older forms of globalised higher education. Our symposium brings related theoretical lenses to bear upon issues of identity and cultural difference within postgraduate supervision and doctoral education. Using theories of negotiating cultural difference (Bhabha, 1994; Hall, 1996; Pratt, 1992), moments of unhomeliness, transculturation and assimilation are explored in an effort to deepen our understanding of what counts as effective and ethical supervision across cultures. The overall intention within such supervision is to facilitate an enabling interaction which allows the Other space to speak and be heard. Our symposium seeks to throw light on intriguing and sometimes challenging dimensions of intercultural supervision, where the Other may be the supervisor, the student or the voice of the discipline, by exploring a range of particular cases of supervision and cultural difference.

Catherine Manathunga's presentation investigates the experiences of Asian students and supervisors in Australia (Manathunga, 2007). Gina Wisker and Gill Robinson's presentation explores the experiences of Israeli doctoral students working at a distance in the British system. Sally Knowles' presentation investigates writing pedagogy, especially feedback, language and identity in relation to themes of mystery and transparency as experienced by newly arrived postgraduates from developing countries. Terry Evans and Iris Liou's presentation investigates the social, economic, and educational features of Taiwanese candidates' experiences studying in Australia. Lastly, Barbara Grant presents her reading of the current literature about the supervision of indigenous research students in Aotearoa New Zealand and Australia in relation to what it can teach us about supervision and cultural difference more generally.

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Interactive Teaching Methods for Non-actors – Drama for Developing Supervisors

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Abstract

In our courses for university teachers and supervisors we have tried different forms of drama and interpretations to illustrate and understand complex issues in our context of teaching and learning. Engaging in performance can bring forward questions, experiences and issues that sometimes are difficult to express in words. With an inspiration in Augusto Boal's work around forum theatre, we have developed a special method of illustrating and solving complex problems in human relations, and in our context of teaching and learning – a method that we also use successfully for developing our supervisors in our 2 weeks course Postgraduate supervision in practice.

Boal developed a form of theatre from traditional monologues at stage into a form based on a dialogue between audience and stage. In our model, all course participants are engaged in a role play or a form of forum theatre. The choice of activity is based on the specified learning outcomes for each course. Common themes are gender, diversity, and balance of power. Our model becomes an extraordinary tool for transforming difficult questions and issues to a training ground for action and understanding of human behaviour in our specific environment as a University. We also become actively engaged with our participants, developing relationships and trust, and having a very good time. We want to discuss and share our model, the games and exercises, with the participants in a 60 minute Showcase/workshop.

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The 'Professional Supervisor': (Re)describing the Work of Supervision

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Abstract

In doctoral education literature, scholars have endeavoured to capture and describe the diverse intellectual, physical and emotional elements of doctoral supervision. Arguably, the current context for doctoral education in Australia, with its focus on completions, its more diverse student cohorts, and new accountability and quality assurance measures for supervisors and universities, has intensified the imperative to clearly articulate exactly what supervision involves. In this paper, we address the question: What *do* contemporary supervisors *do* and what does this mean for universities? Our response is based on empirical evidence drawn from our larger cross-disciplinary, qualitative study on the impact of the doctorate on students, supervisors and external stakeholders in a large, metropolitan university in Australia. Extended interviews with 26 supervisors across three broad Fields of Study (i.e., Social Sciences, Arts and Humanities, Health and Science, and Business and Economics) were conducted and analysed using systematic, inductive coding and constant comparison. Informed by conceptual frameworks from fields like medicine, our research indicates that contemporary supervisors have adopted a 'professional' identity in their approach to doctoral supervision and engage with supervision a particular form of 'professional' practice. We outline the key domains of the 'professional supervisor' and argue that this identity offers a more all-embracing yet precise notion of supervision that has particular value for training, managing and improving supervision in contemporary universities.

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Building Research Supervision and Training Across Australian Universities

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Abstract

In this paper we report on progress to date on a project designed to investigate supervision and training needs in Australian Universities.

In 2007, the Carrick Institute provided funding for a project to investigate current practices and future needs in research supervision and training across Australian universities. The significance of the project lies in the fact that it will provide, for the first time, a coordinated and systematic overview of current practices, needs and priorities for higher degree research supervision in Australian Universities. It will also provide recommendations for future directions in higher degree research supervision training, and thus, hopefully, will assist universities in their future planning in this area.

The project is being conducted in two stages: a symposium of key academics in the field of higher education, and a wider scoping exercise where information is sought from individuals and groups across Australian universities about existing practices and perceived needs. To date we have completed the symposium and we are about to begin the scoping exercise.

The symposium brought together key academics to address current and future needs of research supervisor training, as well as the broader contexts of research education and supervision. The symposium also addressed the impact of increasing accountability of universities on doctoral education. In this paper, we report on outcomes from the symposium of key academics. We also seek feedback on ways in which we have drawn on symposium outcomes in our design of the scoping exercise (Stage 2) of the project.

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Supervising Practice Based Research

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Abstract

Practice based research appears to have emerged alongside the popularity of the professional doctorates. One way of thinking about this methodological approach is to consider its research paradigm – a practice based epistemology, and from this perspective to consider whether the paradigm invites different approaches to research supervision.

This paper draws on the author's own experience of completing both Master's and Doctoral practice based research, and now supervising students who similarly are drawing on their practices as the basis for doctoral investigations. It takes a view that research supervision is pedagogy and draws on two of the elements – Background Knowledge and Explicit Assessment Criteria - from the 'Productive Pedagogy' (Education Queensland, 2001) framework to explore some of the variations in supervision that are invited by a practice based epistemology. As Richardson (1998) points out, research and the production of knowledge are 'profoundly textual' and the pedagogy in this model is focused on developing writing skills by initiating discussions with the student to draw out their background knowledge and providing feedback on that writing based on an identified criteria of 'good' practice based research (Hill, 2007)

The model involves an initial meeting in which the supervisor and student

- Clarify what the student understands as research and university based research.
- Recognise that all research makes contributions to knowledge and explore
 - What the student knows about the practice being investigated (epistemology)?
 - What is known about the practice being investigated (literature review)?
- Explore any thoughts about the way in which you intend to investigate

Following this meeting the student undertakes a two page writing task addressing the following questions

- What do you intend to investigate?
- What is the context of the investigation?
 - Practice based context and
 - Literature context And
- What role do you play in the practice based context?
- Why is it important to investigate this issue?
- First thoughts on how you think you might investigate this topic.

This is read by the supervisor who provides extensive feedback against a context of criteria of 'good' practice based research (Hill, 2007) which creates the substance for a second meeting. These meetings and writing tasks continue over a period of six months with each writing task becoming progressively longer. A two page document becomes a four page document and continues growing until it is a thirty two page document. At the end of the six months the student has been exposed to writing agendas for university based research and has also completed a research proposal.

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Problematizing “Good” HDR Supervision: Developing a Framework for a Research Supervision Curriculum

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Abstract

There has been considerable discussion in higher degree research (HDR) literature about what constitutes ‘good’ HDR Supervision. The discussion, consciously or unconsciously explores other questions such as ‘What is Research?’ and ‘What is Supervision?’ and in doing so reveals multiple constructs and dissonance across the terrain.

Working through the real problem of developing a research supervision professional development program for a New South Wales university, this author identified a curriculum philosophy that incorporated:

- Reflective Practitioner (Dewey, 1933; Schon, 1983)
- Communities of practice (Wenger, 1998; Wenger and Snyder, 2000)
- Practitioner Investigation (Anderson and Herr, 1999; McNiff, 2002)

and arranged the array of resources that are now available for research supervisors into a constructivist (Kelly, 1955) curriculum that drew on four different constructs for research supervision:

- Supervision as Pedagogy (Connell, 1985; Pearson and Brew, 2002)
- Supervision as Administration (Vilkinas, 2002)
- Supervision as Epistemology (McWilliam and Singh, 2002)
- and Supervision as Relationship

Finally the curriculum drew on the FIRST case studies as vehicles to have participants reflect on the literature and contemplate their own styles of supervision as a means to moderating engagement with the program.

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The PhD Examination in Balance and Imbalance

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Abstract

This paper draws on the findings of a national study of PhD examination (comprising the text analysis of 2121 PhD examination reports and examiner recommendations) in conjunction with three bodies of literature (on doctoral supervision, academic scholarship and doctoral examination) to elaborate a model of doctoral examination 'in balance'. The model represents the interaction of examiner roles (stewardship, membership and relationship), examiner focus (duty, territory and empathy) and conditions that determine quality (standards, disciplinary experience and supervisory experience). The examination process in Australia has been shown to be particularly robust, insofar as examiner expectations are strongly aligned to the same standards, and this is also evident in examiner reports on the same thesis, but there are situations where an examiner is an outlier. Typically in such cases the situation is out of balance. This paper explores how this occurs and provides data from examiner reports to illustrate balance and imbalance.

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Helping PhD Students Overcome Writers Block

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Abstract

The process of writing about one's research is a private, self-mastered activity, and is often not discussed, and thus it is difficult for PhD candidates to solve the problems they face in overcoming writers block. Students need to generate momentum in writing in candidature to ensure long term success and thesis submission. There is a need to teach the skills of writing which are described by Boice (1994) as tacit, by describing and discussing what is known to lead to fluent and stress free writing.

Searching the literature reveals that there is no 'cure' for writers block, however, a new workshop series at Flinders University, addresses the causes of writers block such as;

- Fear of failure/success
- Perfectionism
- Procrastination
- Depression

Turbo-Charging your Writing is a 7 part workshop series held over 6 months which teaches students in the 'write-up' stage of candidature how to maximise their writing output and overcome common obstacles that reduce productivity by:

- Using techniques such as accurate self-talk
- Challenging internal beliefs that hinder progress
- Establishing a steady and productive writing plan
- Setting achievable goals
- Raising consciousness about resistance
- Making writing a group activity which generates peer support.

Evaluation of the program has shown that participants claim to have submitted an average of 6 months earlier than expected and that anxiety levels are significantly decreased.

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The Use and Role of Experiential Learning in the Doctoral Study

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Abstract

Experiential learning, for example, outdoor education, problem-solving challenge activities has long been used in the corporate sector. The rationale is that participants develop generic skills, like teamwork, problem-solving and confidence that can then be translated back into their work context.

With growing interest in generic skills in universities, what are the lessons to be learned? What role does this form of experiential learning play in doctoral study? Is this a valid way to develop generic transferable skills? How well can it be applied to doctoral and post-doctoral life?

This symposium provides an opportunity for research education developers, students and supervisors to discuss their experiences of experiential learning and consider its application in doctoral study. A brief experiential (non-threatening!) learning activity will be incorporated to assist with participant engagement.

In England, UK GRAD, a body funded by the UK Research Council makes extensive use of experiential learning. These range from short workshops through to five-day national GRAD schools. One of the panel members will describe how these operated and their outcomes.

Another panel member will describe their involvement with a program called the 'PhD Experience' that used outdoor exercises as a metaphor for PhD study, for example, traversing a maze blindfolded, and problem-solving with inadequate resources.

The third panel member will describe their experience with a program called the 'PhD Challenge'. This is a two-day program aimed at developing skills that can contribute directly to doctoral study, for example, overcoming obstacles, getting unstuck, and maintaining a relationship with supervisors.

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Representing Research Education: Subject Formation and Supervision in Three Fictional Narratives

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Abstract

Recent researchers in higher education have explored significant issues relating to the PhD through examining narratives of doctoral education: Margot Pearson (2005) discusses the dominant narratives of the PhD in an Australian context, while Bill Green (2005) compares four narrative accounts of individual experiences of postgraduate study. In this paper I compare three narratives of doctoral education from an international context: two recently published novels and one ongoing online comic strip. I argue that cultural representations of postgraduate study like these do impact on doctoral candidates and on their supervisors. To put it another way, stories about supervision have an affect on supervisory relationships, and representations of doctoral students impact on PhD candidates' conception of their 'self'. The extent to which individual subjectivities *are* textual (or discursive) has long been argued in cultural and critical theory; Lacan's (1966) work, for example, has contributed much to our understanding of the complex relationship between discourse and identity, and Foucault (1994) has emphasised that aesthetic practices such as literature contribute to 'technologies of the self'. We experience things through a variety of mediums and our 'experience' is intricately bound up with 'representations'. This analysis will consider three related questions: what kind of self or individual subject characterises the PhD student in these representations? What kind of relationship between supervisor and student is portrayed, and how does this relate to our understanding of supervision as pedagogy? What do these narratives reveal about the ways in which postgraduate study in general, and supervision in particular, is represented in cultural practices, in the West, at this time?

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Building a Third Space in the Research Higher Degree

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Abstract

Although academic disciplines have moved beyond the simple dichotomy of the Two Cultures espoused by C. P. Snow in 1959, communication among disciplines remains limited. Divides that may be perpetuated in universities by administrative entities, research practices and geography also have the potential to isolate research higher degree students academically, psychologically and socially. The cultures inhabited by "academic tribes" and the disciplines patrolled as their "territories" have been well documented by Becher and Trowler (2001), however they concluded following their enquiry of the disciplines that "[t]he problem remains of how to bridge the evident divisions...". Using Bhabha's (1994) "third space" among cultures as a metaphor, we seek to build a zone for research students where disciplinary borders can be interrogated and transcended, "[t]o construct some sort of vocabulary in which they [the differences] can be publicly formulated" (Geertz, 1983). By bringing together students from disparate disciplines into groups for discussion, we hope to facilitate students' understandings of disciplinary discourses and boundaries and the potential for transcending them, make knowledge structures explicit as a precursor to effective collaboration, and elicit students' experiences of studying across boundaries and the challenges involved. In this forum we will facilitate a discussion of how academic disciplines shape postgraduate research, and explore the capacity for building a 'third space' in the research higher degree.

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Australian Honours Programs: Roles and Practices

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Abstract

Honours degrees are the Cinderella programs of Australian higher education. They fall between undergraduate and research degrees. They do not fit readily in quality assurance processes for coursework or research programs and are mostly ignored by research in higher education (AVCC, 1990, 1991, 1992; Kiley et al., in press). These problems might not be significant if it were not for the fact that the First Class Honours degree is the gold standard of undergraduate education. It is the most commonly cited entry requirement into the PhD and essential for most postgraduate scholarships (Bourke et al., 2006). Whilst holding the status of a gold standard it is not fully understood and the extraordinarily diverse range of practices covered by Honours programmes are generally unacknowledged. This 90 minute symposium explored the initial scoping of Honours programs across Australia covering:

- an overview of the research questions to be investigated in this Australian Learning and Teaching Council (ALTC) project on the scope and purpose of Australian Honours programs
- the difficulties encountered in using DEST data to gain an accurate statistical picture of Honours
- exploration of recent policy developments in Honours programs, using the University of Queensland as a case study, and
- some implications of our initial findings for policy, particularly with regard to the use of Honours as research training and as a selection measure for entry into the doctorate.

Summary

The Honours symposium at the 2006 QPR conference uncovered a timely need to undertake further research into Honours. Just what is Honours exactly? It appears that there are two broad divisions between an 'Embedded' or 'On-course' Honours program, where Honours is usually awarded for high quality work within the time frame of a pass degree, and 'End-On' or 'Add-On' Honours, where Honours is an extra year of study after a three year Bachelor's degree. However, the development of Honours in Australia shows that it is not a matter of a simple binary.

The aim of this Carrick funded project is to inquire deeper into the Australian Honours landscape. Some of the questions that have emerged about Honours pertain to the increasing globalisation of the higher education sector and, in particular, its relevancy in the 21st Century. For instance, given its uniqueness to the Australian context, how does Honours fit in a globalised higher education

system; can Honours translate to the Bologna environment? Other concerns emerge from the institutional structure in which Honours is located, such as who owns Honours; is it the responsibility of particular disciplines, programmes or a centralised unit within universities? What is the literal and conceptual positioning of Honours; is it within the research environment or the teaching and learning environment? What priority is given to Honours? Why does it appear that Honours enrolments are dropping and the percentage of PhD candidates entering directly from Honours also seems to be declining? Other concerns address the pathways and skills attributes obtained from Honours: where does Honours fit in the research training environment; is Honours a reasonable indicator of Higher Degree Research capacity and is it still a reasonable entry criterion for allocation of Higher Degree Research scholarships; how does Honours translate in a vocational context; how is Honours bound up in disciplinary identity and ways of thinking about and inducting students into the discipline; what do employers think of Honours? Further questions pertain to the teaching and learning dimensions of Honours: how do students experience Honours? Does Honours act as a training ground for supervision and for examining? What support and training exists for Honours supervision? What criteria are used in the appointment of supervisors for Honours dissertations? How do students experience Honours?

This project will address these questions through two core aims to:

- map the range and diversity of Honours programs in different types of universities and disciplines across Australia
- identify significant factors, policies and practices impacting upon quality learning and teaching in these programs.

In particular, the project will address issues related to variations of Honours programs in five domains. First it will study variations in context, for example, how is the term 'Honours' used across different sites; how is Honours managed across different universities. Second it will review variations in structure and curricula including the practices and structures of different Honours programs; identified learning outcomes; the role of the Honours thesis and assessment. Third it will examine variations in enrolments, progression rates and student demographics. Fourth it will study variations in outcomes including graduate destinations upon the completion of Honours; articulation into postgraduate degrees and anticipated learning outcomes for students beyond those identified in assessment criteria. Finally it will survey variations in evaluation processes including student expectations and effective models of Honours courses.

Over the last five years, many Australian universities have conducted reviews of Honours programs in response to some of the questions outlined earlier. The University of Queensland case study provides an example of Honours as an area of policy change. Some of the issues raised at the 2003 UQ Honours review included the attempt to clarify the 'purpose and intent' of Honours programs; whether Honours provided fair and equitable treatment of students in Australian Postgraduate Award (APA) scholarship selection; transparency of entry and exit requirements and consistency across Honours practices. In 2004 a new Honours policy was introduced implementing a standardised model for Honours that included advanced and intensive study in the chosen discipline, research training and a research component and a standardised grading system using GPA cut-offs. However, at the 2006 and 2007 evaluations of the new policy, concerns were raised that the changes disadvantaged On-course (Embedded) Honours programs, particularly in specific disciplines which had used Honours to recognise student achievement in the overall undergraduate degree. Subsequently, a set of further issues emerged including the need to clarify the

meaning of the 'Degree with Honours'; whether Honours should be offered in all degrees as 'On-course' rather than requiring an additional year and whether Honours should be offered only to recognise achievement across undergraduate degrees with research preparation restricted to a two year Masters programs along the Bologna model lines.

As Honours is increasingly becoming an area of policy review in Australian universities, it is worth addressing some factors that have a bearing on policy decisions. Although concerns have been raised about a decline in Honours enrolments, the early stages of our research has encountered difficulties in obtaining an accurate statistical picture of Honours in Australian universities. The statistics on Honours are demonstrably inaccurate given that the figures reported by the Department of Education Science and Training (DEST) predominantly do not correspond with the figures held by the reported institutions. Furthermore we have found deficits in the very collecting of Honours statistics. Universities often do not have a centralised system for the collection of Honours figures. Honours tends to be invisible and student enrolments and completions, if counted, are usually absorbed into the statistics pertaining to the overall undergraduate population.

The implication for policy is that it needs to be attuned to the potential for confusion and ambiguity that can arise from opaque data. Policy needs to build on a secure base of evidence about practice; it needs to build on a clear understanding about what is being referred to and it needs to build on an assumption about what it is for. The extent which it does is questionable in the context of using Honours as a selection measure for entry into the doctorate and scholarships. The 'first class' Honours has been the most important factor in selection for the latter. However, many selection processes do not acknowledge different types of Honours and treat them as equivalent.

Further policy debates circulating in the field are directing towards the question of whether we still need Honours. In the UK, Honours classifications have been under threat and, as (outside Scotland) there is effectively no non-Honours Bachelors degree now, Honours as such has become meaningless. Few other countries have accepted Honours as an additional qualification. In Australia, even though Honours, unlike Masters, has counted as an undergraduate degree for HECS purposes, this does not appear to have lead to a revival. A significant issue is whether Honours fits the framework of qualifications in the Bologna agreement. In one of the first national analyses of their Honours degrees, Scotland (closest internationally to the Australian End-on Honours year) identified it as a first cycle qualification, that is, as in the same category as a non-Honours Bachelors, not as an equivalent to a Masters Degree.

The picture that is emerging in our initial research findings is that Honours is under threat. It is under threat by the increasing use of Masters as an entry and selection qualification for doctorates; by its unattractiveness to some students; by its lack of equivalence to overseas qualifications and lack of differentiation internationally from a Bachelors; by an ambiguity about what it stands for and produces. It could be reformed to address some of its limitations. But should it? This project will map the complexities and intricacies of the Australian Honours landscape, an appreciation for which will be of value to the policy arena.

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The Straw that Broke the Camel's Back: Reducing Attrition in Higher Degree by Research Candidature

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Abstract

A quantitative and qualitative investigation across disciplines at a large research university sought to identify patterns and facilitate a richer appreciation of issues in students' decisions to withdraw from candidature. Strategies are proposed to address some of the identified institutional issues and thereby reduce attrition

This paper discusses the qualitative phase of the study which comprised semi-structured interviews with a sample of PhD candidates who had withdrawn. Additionally a consultation process was conducted with the postgraduate association president and advocates, student services staff, international officers, research graduate studies officers, and departmental administrative staff, who liaise with research degree students.

Considerable commonality of themes emerged from the data sets. Interview data may be appreciated within the framework of attribution theory and also adult learning theory.

Findings indicate that in general and consistent with the literature students' premature departure from candidature occurred as a result of the convergence of factors, often both personal and institutional. The present study highlights the notion that generally some particular factor made the process suddenly untenable.

The underlying critical determinant appeared to be the students' realization that the research project was poorly structured and unpromising. This reflected a student's partial acceptance of responsibility and partial attribution of blame to inadequate project direction.

Financial difficulties, limited scholarships, and the need for full time work outside of the university seemed to jeopardise the completion of an extended project.

Life factors extraneous to the university were apparent major disruptions to an individual's ability and desire to pursue serious study.

Strategies are suggested to increase students' satisfaction with research candidature, to feel more included within the department, more immersed in the disciplinary culture and thereby reduce attrition.

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Investigating Learning in the Doctorate: Notes Towards a Transnational Research Agenda

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Abstract

This paper takes as its point of departure two questions: How can the place of learning as a key element of doctoral education be better understood? How does it fit in relation to research and to supervision? The authors' aims are to develop empirical 'country' studies of the environments for doctoral learning. While there is now a great deal of work on doctoral supervision, there is relatively little research on student learning. Work referring to students is often couched in terms of the 'doctoral student experience', which may or may not provide a useful lens on the questions of learning that concern this group (eg Leonard et al 2006). As noted by Green (2005), what remains largely uncharted territory in conceptual terms is the set of questions in the space opened by Burton Clark's (1994) idea of the 'unity' among research, teaching and study, which lies at the academic 'heartland' of the modern research university.

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Writing Group as an On-going Supporting Tool for International Research Students

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Abstract

Writing a thesis in English poses tremendous demands and challenges for international research students from non-English speaking backgrounds (NESB). Findings from research on postgraduate supervision have drawn attention to the particular needs of NESB international research students for additional support in their research and thesis writing process. This paper reports the development of an on-going writing group for NESB international research students at an Australian university. One pivotal point in this report is the two facilitators' self reflections regarding their practice in developing, promoting and facilitating the writing group. The self reflections are grounded on an extensive review of the literature on the development of writing groups in different contexts, particularly as a supporting tool for postgraduate research students. Cooperative learning and writing theories emphasising the social dimensions of writing are also drawn upon as theoretical support for implementing the writing group. The facilitators' personal observations and reflections, student writing samples, and student feedback constituted the data for this study. We argue that as an on-going support tool for international research students, the writing group also creates a cooperative learning environment, offers a venue for social and emotional support, and could be used as "a threat free test" (as one student put it) for helping NESB international research students to build up confidence and competence for successful thesis writing in a second language.

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'Students Think I'm One of Them but I'm Not': The Complexities of Intercultural Supervision

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Abstract

Intercultural supervision is a complex pedagogy. There has been a lot of research about Western supervisors supervising culturally and linguistically diverse students, especially international students (Aspland, 1999; Ryan & Zuber-Skerritt, 1999). Few researchers, however, have sought to explore intercultural supervision from the perspective of culturally and linguistically diverse supervisors working in Western universities (Manathunga, 2007). This paper explores the experiences of a Chinese supervisor based in Australia supervising Chinese international and Australian-based students who automatically assume his/her cultural allegiance. This positions him/her in a liminal space as a supervisor where 'students think I'm one of them, but I'm not'. Drawing on post-colonial theory and several case studies, this paper investigates the complexities and deconstructive possibilities of intercultural supervision to challenge stereotypes about Western and Eastern supervisory approaches.

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Research Training for Academic Integrity: When, What, How?

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Abstract

Academic integrity is required of students even before they have any clear idea of the culture of research and what this entails. In this paper I examine recent literature on academic integrity and plagiarism for examples of scaffolded approaches to research training and raise the question as to when this training should begin, what it might consist of and how it could be implemented. I examine the concepts of academic integrity and academic misconduct and the application of these concepts in dealing with student plagiarism. I will contrast the attitude of writers whose approach is to inform students of plagiarism policies and punish 'transgressions', with those who support the notion of a period of apprenticeship into the culture of research. I draw the conclusion that to reduce the incidence of inadvertent student plagiarism, research training needs to be an integral component of all university learning and that apprentice researchers require a period of induction into the norms and values of research without exposure to the fear of being accused of misconduct.

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Exploring Industry Supervision from a Students' Perspective

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Abstract

The supervision of Research Higher Degree (RHD) students by both academic and industry supervisors is likely to increase as the number of university-industry collaborations expand. Research students may become involved in these collaborative arrangements for a variety of reasons and, excited by their prospects, may launch into their RHD without considering how they will serve two masters and how this complex relationship will affect their RHD experience. Moreover, little research has been conducted to assess the impact of these arrangements on current RHD students' experiences.

Industry-linked RHD projects can also be quite highly defined and at times, offer little scope for a student's exploration of "serendipitous discoveries" (Marsh, 2006, p.63). Moreover, with many industry supervisors being driven by organisational demands, it is becoming increasingly important to explore whether these supervisors are playing an appropriate role to develop students' independence. Additionally, the placement of industry-linked RHD students within industry locations and away from the traditional academic setting where procedures exist to manage large cohorts of RHD students may also impact upon their RHD experience and outcomes.

The experiences of students with academic and industry supervisors were, therefore, explored in a survey of 2,300 confirmed RHD students at The University of Queensland. This paper investigates differences between the two types of supervisors and indicates how students perceive they are being groomed as independent researchers.

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Roles and Responsibilities of Research Centre Postgraduate Facilitators

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Abstract

Many universities have Graduate Schools which, under the leadership of a Dean or Director, are responsible for policy and operational matters pertaining to the Research Higher Degree (RHD) programs, offer professional skills training to both students and supervisors, and take an active role in grievance conciliation and resolution (DDOGS, 2002). Some universities also engage Department, School or Faculty postgraduate coordinators to act as intermediaries between the student/supervisor team and the Dean/Director of the Graduate School, and these coordinators oversee the work of all RHD students within their respective unit. Cooperative Research Centres (CRC) and other large research centres employ Education Managers or Officers who have roles and responsibilities within their centre that overlap with those of the Dean/Director and postgraduate coordinator, but often oversee RHD students from multiple universities. Education Managers/Officers have an important role to play within their centre, but usually fall outside of the official university's postgraduate management structure so have little or no ability to remedy the slow progress or poor performance of students or supervisors. This paper will explore some of the roles and responsibilities of research centre postgraduate facilitators, specifically those of the CRC Education Manager/Officer, and discuss whether these CRC postgraduate facilitators should have a more formal role in a university's management of its RHD students.

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Impacts of Doctoral Education: Recognising the Value of Different Types of Learning

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Abstract

In Australia doctoral education has been criticized as “too narrow, too specialized and too theoretical, leading to graduates whose communication, interpersonal and communication skills require further development” (Kemp, 1999, p.17). Such criticisms have increased pressure on doctoral education to demonstrate its relevance and value to the knowledge society. This has led to a valuing of the outcomes after the doctorate is completed, which is often understood as marketable knowledge, rather than the outcomes of the learning acquired *during* the doctorate. This paper seeks to re-adjust the focus. We discuss the different forms of learning that a group of full-time PhD candidates consistently identified as positive impacts of their doctoral education. These types of learning are described as self learning, social learning and cultural learning. Links are made between the impacts of the types of learning and contemporary issues and debates in doctoral education in the current knowledge society. These links illuminate the synergistic relationship between learning processes and outcomes of doctoral education. They prompt broader understandings of the impacts of doctoral education that ameliorate, it is argued, the raft of impacts doctoral education facilitates and contributes to a knowledge society.

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Involving Students in Research in Mathematics Education: a Case Study of Realistic Mathematics Education (RME) in Indonesia

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Abstract

Realistic Mathematics Education (RME) has become a new model of innovation in teaching and learning approaches for most of Indonesian teachers. It was initiated in the Netherlands and has gained success after several years of research.

Although it still in an ongoing process of introduction, this method has become popular and is expected to be the best solution for better results in mathematics education in Indonesia.

The State University of Jakarta, within the Mathematics Education Program, has been involved in a pilot project to introduce the RME to the educational practitioners and society for several years. As an institution that focuses on preparing future qualified mathematics teachers, introducing and involving the students in the RME could benefit both the students and the researchers.

Inspired by my experience, I argue that involving student teachers in educational research is important to make this project more acceptable and applicable. From the poster that I will present, I'll explain how this cooperation between the lectures conducting researches in RME and the student's teachers could gain advantages. Moreover, this cooperation might be implemented in other area of research that could stimulate research quality because it includes both practitioners and academics. Involving student teachers in the RME will widen its acceptability and improve research in education both for the researchers and for the students as skill for the future.

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Case study of satisfaction and completion of part time research students

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Introduction and Context

Internationally the past decade has witnessed a stronger policy focus on research students. With the numbers of students undertaking research degrees continuing to increase, government and community interest in doctorates has grown. In 2006 more than 45,000 students were enrolled in a higher degree by research (HDR) in Australia (DEST, 2007). It is unclear how many of these HDR students are enrolled part time since the federal Department of Education, Science and Training's preference for reporting statistics in terms of Equivalent Full-time Student Units (EFTSU) makes it impossible to study trends in actual numbers of part-time enrolments, obscuring the significance of part-time research students as a distinctive category. Part-time research students were estimated at around 38% of research students in 2003 (Cumming and Ryland, 2004; Cervini, 2007). Part-time research students have been referred to as the "reserve army" for universities and as "invisible" and the "forgotten cohort" for government policy (Evans, 2002; Barnacle and Usher, 2003). It is however becoming clear that there is a specific category of research student that has been overlooked to the point that they are 'invisible', in both policy and research terms - part-time students. This paper reports on research on part-time research students and examines completion times relative to full-time candidates as well as satisfaction with their research experience on completion. The study utilises two national data sources from Graduate Careers Australia (GCA). Detailed discussion of the datasets, research approach and analysis has been reported in Rodwell and Neumann (2008).

Overview of Key Findings

In terms of satisfaction with their student experience (for full details see Neumann and Rodwell, in press) part-time research graduates are less satisfied with the infrastructure support provided and have a less favourable perception of the research climate of their department, than full-time research students. The level of satisfaction with other important aspects of research study, such as supervision, realisation of goals, skill development and the thesis examination process indicate little difference in satisfaction levels between full- and part-time students. Within the institutional case study this trend also holds although there is some fluctuation in the supervision scale in some years (2005, 2001, 2000) with part-time graduates more satisfied with their supervision than full-time graduates. Given the confidentiality surrounding individual institutional data the examination of potential institutional effects on full- and part-time graduate satisfaction remains speculative.

In terms of completion, part-time doctoral students were found to have faster completion times than full-time doctoral students, in equivalent-time terms. For the full-time students the key predictors of timely completion were residency, field of study and English-speaking background (NESB faster) (Rodwell and Neumann, 2008). Part-time students were more likely to complete in the standard target FTE time if they were 'younger' and/or had an honours degree. Importantly, 'younger' is an average of 43 years while 'older', slower completers had an average age of 47 years. One specific category represented the fastest completers: part time students who were non-resident and from an English

speaking background. Further investigation is needed to fully understand this group.

Implications

The analyses in the case study highlight the varying issues that are the best predictors of time to completion by mode of study for doctoral students. It is suggested that universities and departments can employ a two-stage approach where they (i) improve the contextual foundations that underpin the research student experience and then (ii) develop processes for student-tailored support. Improving the contextual foundations of research study at the institution includes tackling the research climate and infrastructure issues. For example, a minimum step is to make part-time research students a 'visible' category of study in the consideration of resource provision.

The second stage of intervention would concentrate on improving students' rates of timely completion by providing student-tailored support. In this case study institution there could be a focus on tailoring support activities to slower-completing students, whether the students are full-time or part-time. The demographic variables have been highlighted by the research and are known at the time of acceptance and commencement of research students.

Importantly, this study's findings substantiate challenges to the stereotypical view of research candidates as young, full-time and with few work or other commitments.

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Quality Assurance and Assessment for Research Supervision

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Abstract

Quality assurance and enhancement are topics of intense interest for universities given the current climate of national evaluation and accountability. The focus of this discussion session will be the ways in which institutions can plan for and enact quality assurance processes for research supervision that take account of the character and history of the institution, disciplinary research attitudes and practices, HDR candidate engagement with learning for research, accountability processes and enhancement activities. We will look at a cycle for quality assurance that includes the impetus for evaluation, the means of evaluation, the reporting / policy / strategic imperatives for evaluation, and the important targeted development activities. These evaluation actions will be critiqued against the notion of assurance and assessment. A general assumption is that quality assurance for research supervision measures something, and that the act of measuring will naturally engender a reflective developmental response. However, the pressures associated with assurance and evaluation activities often leave research supervisors bewildered and pressed for time. The overall outcome for this discussion then will be a pooling of ideas and resources that are effective for universities of different character and history.

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Gaining Knowledge – Creating Art: Examination of Theses at an Art University and Quality Assessment Through Examination Reports

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Abstract

The presentation focuses on the examination procedures of doctoral dissertations at the University of Art and Design Helsinki, the increasing diversity of forms of dissertations and the criteria chosen for assessing them.

As a process, the examination of doctoral dissertations in an art university differs somewhat from that in other universities. Even the latter, however, increasingly need to deal with visual or practice-based argumentation. By way of introduction, the emergence of doctoral education in Finnish art universities is discussed briefly, as are the degree requirements for both traditional and artistically oriented doctoral projects. The pre-examination process including artistic or design projects differs from the process of a written thesis. The examination process may for example take many years, because the art or design productions are often exhibited before the written thesis is completed. Finally, all dissertations in Finland have to be published as a book or in an electronic form, which also means different procedures in the final examination process.

The introductory paper is based on an analysis of 62 examination reports during 1991-2006. The analysis brings forth the criteria the examiners use when they assess the dissertations. The University only gives general guidelines to the evaluators. The multiplicity of research areas, the inclusion of artistic projects and argumentation with visual material also pose special problems to the examiners. According to the degree requirements, the artistic works have to be of high quality, and art productions or design projects must be meaningfully connected to each other. The written thesis, where the targets, methods and results are presented, has to be in a dialogic and analytic relation to the productions or projects.

The following parameters were chosen and their occurrence in the data was calculated: 1) the methodology used (93 %), 2) the level of conceptualisation (62 %), 3) originality, new knowledge, new perspective (54 %), 4) experience, personal or professional (38 %), 5) the relationship between the theoretical written part and practice (19 %). In addition, oral examination was mentioned in 38 reports (61 %). The preliminary assumption on the importance of the research process or transparency of research and the use of visual material in argumentation proved to be of minor importance to the examiners. This requires further investigation and will be one of the central topics in future research.

The authors wished to discuss with the audience 1) the diminished importance of the division between theoretical and empirical parts, 2) the dual ability to judge both a creative work and a written text, 3) the constructive and collegial nature of reports and 4) the prominence of the research process in reports.

The research continues with a more thorough textual analysis of the reports by using qualitative software analysis and testing the coding categories. In addition, a sample of examiners from the five fields of study (design, art

education, visual culture, film and scenography and new media) will be interviewed in depth.

The most relevant prior studies are the research by Dally, Holbrook, Graham and Lawry *The processes and parameters of Fine Art PhD examination* (2004) and the more general investigation by Holbrook, Bourke, Lovat and Dally *Qualities and Characteristics in the Written Reports of Doctoral Thesis Examiners* (2004). The research on the assessment practices of experienced and inexperienced researchers by Kiley & Mullins (2002, 2004) is also important.

Keywords: examination of dissertation, Art University, assessment criteria

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‘The Quicksilver Flash of Insight May Make One Rich or Poor in an Instant’ Palmer 2001: Encouraging Postgraduate Students of Literature and Art to Cross Conceptual Thresholds and Achieve Threshold Concepts in Their Research

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Abstract

Most research into postgraduate student learning, including our own, (Wisker, et al, 2003, 2006, 2007) has focused on generic issues of research design, supervisory interactions, research development programme support, writing, communities of practice and examinations. Early work reported here focuses on the learning and supervisory support for that learning of postgraduates researching in the fields of literature and art. Students of literature and art are frequently involved in a dynamic mixture of reflective, creative, and analytic work which involves data gathering from a range of sources including collections, archives, the public, writers or artists alongside the more traditional development of literature reviewing and analysing and interpreting text/or art artefacts. Such work is often socially and culturally contextualised and engaged, cross disciplinary, and can involve the production of creative work as part of the PhD product. This research (Wisker & Robinson, EARLI 2007) grows from an individual (UK) National Teaching Fellowship Scheme (NTFS) project and relates to a large cross-university NTFS project (2007-) considering research carried out with PhD students and their supervisors. Like the larger projects, this research with students and supervisors in the fields of literature and art builds on the underpinning theories of threshold concepts and the crossing of conceptual thresholds (Meyer & Land 2006, Kiley and Wisker 2006, Wisker and Robinson 2006), taking threshold concept research from its base in undergraduate learning into the study of postgraduate learning.

Aims

For research for PhD and beyond, students’ work needs to move beyond fact finding to conceptual levels. There are many ways in which we might support students in crossing this threshold, making this leap. This paper focuses in particular on students working in literature and in art as specific examples of postgraduate research.

Research design and methodology

The paper is underpinned by Meyer, Land and Cousin’s work on notions of conceptual thresholds and troublesome knowledge and builds on previous work (Wisker et al 2003, Kiley & Wisker, 2006, Wisker, Kiley & Aiston 2006) on postgraduate student learning and the roles played by research development programmes, peer groups, supervisory dialogues and relationships in encouraging meta-learning, and the development of understanding of threshold concepts as well as the crossing of conceptual thresholds, the one related to the discipline area, the other to the postgraduate level and stages of the student’s work (Kiley & Wisker, 2006).

In reporting on this early work on postgraduates, this paper focuses on research carried out with PhD students and their supervisors into the crossing of the conceptual threshold. In particular it looks at the development of conceptual level research in relation to literature and art.

In terms of the study of literature students are expected to engage with, understand and embed in their research, threshold concepts which include those of representation, and an engagement with the implications of context and culture. In terms of art, engagement with metaphor and the 'making of informed choices about imaginative and intellectual approaches' (Sullivan 2005) enabled through the use of sketchbooks and journals (Robinson 2006, 2007), goes some way towards the development of threshold concepts, while an ability to theorise and articulate at a critical and conceptual level is evidence of the crossing of conceptual thresholds. This small scale study begins by looking at the work of postgraduate students and focuses on that of PhD students in particular who have each deployed rather different interpretations of either research into and involving literature or research into and involving art.

Findings and Educational and Theoretical significance

Some of the definitions and expectations of the threshold concepts involved in a literature PhD include the recognition that characterisation, event and image are functions of an argument which itself engages with contextual and cultural changes, while literature more related to the fantastic might deliberately use images which defy straightforward analogy and interpretation through representation and instead engage with the creative and dream space of the inner self as it interfaces with the world through creative expression. Some of the definitions of threshold concepts can be sought more indirectly from the benchmarking statements produced English Subject centre at www.heacademy.ac.uk, and in books produced on the teaching of the subject and the postgraduate endeavour including *Teaching the Gothic* (Smith, 2006) and *Teaching African American Women's Writing* (Wisker 2009, forthcoming).

Definitions and expectations of the research towards work involving the achievement of threshold concepts in art take a number of forms. The use of metaphor in context is described by Hockney as : 'a more vivid depiction of the experience of reality' or 'multiple simultaneous perspectives' (Hockney 1989). In Diog's work it is explained 'as if an abstract painting has split open to reveal an interior world.' (2005) Some art related research explores ways in which artists have used dreams and imagination to convey something beyond the representational image. Artwork involving images from dreams and imagination are often associated with 'Outsider Art', 'Art Brut' and the 'Surrealist Movement'.

Some of the questions underpinning the work are:

How far does the theory of threshold concepts and the crossing of thresholds describe and appreciate the kinds of developments students can/must make in their work for it to achieve PhD level in the context of research related to literature and art? If so, what might generic threshold concepts and the crossing of generic PhD thresholds look like when articulated in their work and their comments in the context of research related to literature and art?

Does the theory of threshold concepts describe and appreciate the kind of learning students achieve make in subject related terms for literature and art and, if so, how might this be articulated in their work and their comments?

What elements of our work with postgraduate students can support and empower them to cross such thresholds and to work at the necessary conceptual level for PhD achievement?

What are the kinds of statements students make and the work they produce that can be used to indicate their awareness of working conceptually and what is the kind of work they produce which is proof of this level of thinking and working in the context of research related to literature and art?

This paper looks at how we might encourage students to identify the threshold concepts of both subject areas in the broad interpretations of the disciplines and inter-disciplines studied at PhD level in particular. It considers effective practices in the support of postgraduate students and through exploration of experience, textual examples, interviews and dialogues determines some of the characteristics in practice of both bringing threshold concepts into play in students' research, and evidencing working at a conceptually complex manner, is evidencing the crossing of conceptual thresholds.

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The Journeys of Fourth Year Undergraduate Research Students: Trialling a Quantifiable Measure

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Abstract

There is a growing body of literature on fourth year degrees which focuses on the provision of a positive research experience for graduates in a range of professional fields. Programs differ across faculties depending on the structure of the undergraduate programs, particularly in professional fields such as Education, Engineering and Health Sciences. Some of the perceived benefits of this initial research experience lies in preparing students for the workplace, giving students an opportunity to study an area they have a specific interest in, and ultimately in grooming potential students for entry into a research higher degree. The notion of the journey is one which is emerging in current research practice. Simple visual representations are being used as tools for students to identify the highs and lows of their research experience. Drawing on quantitative analysis, the paper identifies different paths and factors which positively influence the students' journeys. A method is trialled to quantify the journey across the different terrains, exploring research understandings and feelings towards research. The authors report research that suggests that students in different disciplines do typically experience different trajectories in completing a fourth year research thesis.

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New to the Publication Game: Practice in the Publication of Student Research

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Abstract

Background: Despite clear guidelines, authorship remains a problematic issue for both postgraduate students and their supervisors. Attribution of authorship can be a vague and confusing area for postgraduate research students.

Methods: We interviewed 7 postdoctoral students, 7 academic staff Level A-E and 3 student advocates about experience, beliefs and norms of behaviour in the publication of papers resulting from student research. Participants were selected using stratified sampling in biomedical, clinical and social science research at two Australian universities.

Results: Participants reported widely divergent norms of behaviour in publication across disciplines both in criteria for inclusion as an author and in the value attributed to the order of authors. Authorship may reflect contribution to research but also may be based on other criteria such as seniority in the research team or contribution of key materials. Guidelines were rarely used and students usually deduced the 'rules of engagement' through example. Extreme cases of 'theft of students' work' were rare but confusion and distress around blurred ethical standards was common sometimes leading to non-publication of work and breakdown in the supervisory relationship. Participants indicated aspects of individual and institutional support leading to good practice in publication of research.

Implications of research: Our research suggests that norms of behaviour run counter to Australian guidelines for responsible conduct in research publication. Improved understanding of accepted practices in authorship and supervision will provide a firm basis from which to build institutional support for good practice in publication of research.

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What can be learned from blogging the PhD?

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Abstract

As Richardson (1998) points out, research and the production of knowledge are 'profoundly textual'. PhD students, like all researchers, keep notebooks, lab books, fields note to record the development of the disciplinary project that is the subject of the thesis. However, they generally do not record the process of the PhD itself, the project of the self. In the last few years increasing numbers of PhD students have created blogs to record their own process, and they have the potential to influence in new ways their development as academics. Jill Walker describes blogs as having "...no whole; they are not objects. They are processes, actions, sites of exchanges" (2006, p. 137), a description that closely mirrors constructivist understandings of PhD candidature, such as those of Boud and Lee (2005).

Blogging can foreground the pedagogical relationship implicit in the PhD process by making the relationship between supervisor and candidate transparent. It can be a tangible record of their 'becoming', of the project of the self that candidates are undertaking in their journey. It can also form a part of that journey, as a place for recording, reflecting and redeveloping understandings of the self as candidates grow through the process of undertaking a PhD.

This presentation will explore what PhD candidates learned by blogging their experiences of academic performances and sharing them with other candidates.

Note: The Powerpoint file with sound and comments is available by contacting the corresponding author

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