Investigating Part Time Research Students in Professional Work – A Pilot Study

Robyn Barnacle
Research Training Group

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Executive summary

Research degrees are currently under scrutiny like never before. Government and particular industry groups are vocal on the need for reform, believing that higher degree by research (HDR) graduates are often inadequately prepared for employment and the needs of the national innovation system.

No detailed studies have been conducted, however, which provide evidence to support these concerns. Moreover, these concerns fail to distinguish between different categories of research students, in particular, those who are already professional workers and are undertaking their research degree in part time mode.

RMIT's Schools of Architecture and Design and Social Science and Planning have a large number of part time research students who also work full-time. These students are required to regularly make the transition between workplace and research contexts and practices. Discovering how these students make this transition provides an opportunity to test DEST's (Department of Education, Science and Technology) views on the relevance of research degrees to the workplace.

This study investigates part time research students in professional work. It has two key research questions:

a. how do part-time HDR students in professional work acquire and develop generic capabilities in the workplace? and;

b. in what ways, if any, do part-time HDR students professional work contribute research knowledge and skills to the workplace?

The study’s findings, obtained through focus groups, interviews and a questionnaire, reveal that:

- the study's participants were predominantly working full time as professionals
- professionals come to the University to do research because such opportunities are not afforded in the workplace
- the research conducted by professionals as HDR students is productively related either directly or indirectly to their work activities
- while many capabilities are identified as being developed through a combination of both work place and research experience, the attainment of certain skills, such as critical thinking, is attributed special significance and is thought to be developed primarily through the research experience.

RECOMMENDATIONS:

RECOMMENDATION 1
DEST should revise the model of the typical research student as young, full time and inexperienced, that is presented in its policy documents, and recognise the very significant presence of part time research students that are drawn from professional work in many industries and who provide ongoing strong and productive university/industry links.

RECOMMENDATION 2
That Federal Government claims regarding the poor preparedness for employment of research degree graduates and the limited role of research knowledge and capabilities
within the workplace be reviewed in light of the experience of part time research students in professional work.

RECOMMENDATION 3
That an Australia wide study, which extends the research presented in this study, be conducted into the workplace experience of research students with part time enrolment in disciplines that draw students from amongst professional workers in and expanded number of industries. This study should expand on the research presented here and report on employer perceptions of graduate research student capabilities and contribution to the workplace while they are studying. Consideration should also be given to researching the views of research students and employers two to three years after graduation.

RECOMMENDATION 4
That DEST review their practice of reporting HDR statistics primarily in terms of EFTSU and develop additional data series that report on actual student numbers so as to more accurately represent the experience of the Australian HDR population.
1. Aims and Scope of Study

RMIT's Schools of Architecture and Design and Social Science and Planning have a large number of part time research students who also work full-time. These students are required to regularly make the transition between workplace and research contexts and practices. Discovering how such students make this transition provides an opportunity to test DEST's (Department of Education, Science and Training) views on the relevance of research degrees to the workplace.

The aims of this study are to investigate part-time HDR (higher degree by research) students in professional work in relation to:

a. the development of their generic skills capabilities and

b. the value of their research and research skills to their workplace.

In doing so, this study provides:

- An assessment of the 'communication, interpersonal, presentational and leadership skills' of part time students in professional work -- what might be called their generic skills or competencies, acquired and developed in the workplace and;

- An understanding of the relationship between student HDR research and their professional work through a focus on:
  
  a. the research knowledge being generated and

  b. the research skills used in problem solving and innovation.

As a pilot, this study is limited in its scope to two broad disciplinary areas at RMIT, architecture and design, and social science and social work.

2. Research Question

This study investigates part time research students in professional work. It has two key research questions:

a. how do part-time HDR students in professional work acquire and develop generic capabilities in the workplace? and;

b. in what ways, if any, do part-time HDR students in professional work contribute research knowledge and skills to the workplace?

3. Significance

Research degrees are currently under scrutiny like never before. Government and particular industry groups are vocal on the need for reform. But what do students want, and to what extent are research degrees meeting their needs?

The view of Government and some industry groups is that research training does not prepare students for the workforce beyond academia and that therefore students lack the skills and appreciation of workplace cultures and issues to effectively integrate into the workforce upon graduation. Put briefly, the concern is that: research degree graduates are often inadequately prepared for employment. (Kemp, 1999(b))
At RMIT, however, a large proportion of research students (63%) study part time and are already in the workforce (Barnacle, 2001). The experience of these students can provide considerable insight into whether and how such students acquire and develop generic and research capabilities and whether and how the transfer of knowledge and skills occurs between the workplace and the university.

3.1 The national context

The Commonwealth Government’s program for building a national innovation system is one of the key drivers of recent higher education policy initiatives (DEST, 2000). Research and research training are key instruments of the innovation strategy as they are the primary mechanisms through which skills building and the development of new ideas occurs – both are central to the innovation system. There is also a third element to this system, however, which is not traditionally associated with the role of the University. This is that of working with industry to turn newly created ideas into commercial successes. Universities are required to successfully position research students to meet the needs of this system. This has put the research degree model in question and turned attention to the nature of the skills it promotes and the employability of its graduates.

There is broad recognition that the perception that research graduates exclusively seek – and go on to undertake – academic careers is incorrect. As Kemp states in the Green Paper: "Research students are not only academics in training. Most enter employment (or are already employed) outside the university sector" (1999(a) section 6.3). Research degree graduates have broad career paths and for many work experience is gained prior to graduation. A key implication of this, and one that is recognised in the Green Paper, is that: “research students provide a conduit for the dissemination and transfer of skill and knowledge from the university sector to the broader community” (1999(a) section 6.3). While the government is keen to promote such links between research students and the broader community their concern is that the work experience obtained by research students is "...often in positions without direct connection to their field of study." (Kemp, 1999(a) section 6.3) The issue for the Federal Government, it appears, is not so much that research student graduates cannot get work outside of academia, since, in its own estimation: "In each of the last three years, some two-thirds of recent PhD graduates surveyed through the Graduate Destination Survey have been employed in non-academic positions." (Kemp, 1999(a) section 6.3) The concern of Government is that graduate research students are not well equipped for the jobs that they take.

Employers, in particular, have expressed concern with the standard of communication, interpersonal, presentational and leadership skills of research degree graduates, and comment that they are commonly too narrow, too specialised and too theoretical. They point to the existence of a ‘cultural gap’ between academic researchers and staff in industry which can cause difficulties in collaborative research projects. This concern was echoed by the Wills Review, which also found that there was a need to broaden and update graduate training to produce more diverse and well-rounded PhD graduates. (Kemp, 1999(a), section 6.5)

No distinction is made in this or other similar statements, however, between different categories of research students, in particular, those who are already professional workers and are undertaking their research degree in a part-time mode.
3.2 Employer perceptions of graduate research students

To support its views on the poor preparedness of research student graduates for employment the Green Paper lists three references: the 1998 West Review of Higher Education Financing and Policy, *Learning for life: a policy discussion paper*; the 1998 paper by J Tyler: *Research training for the 21st century*; and finally the 1999 Health and Medical Research Strategic Review, *The virtuous cycle: working together for health and medical research*. An examination of these sources, however, reveals little more than anecdotal evidence for the views that the Government espouse. This is not just a shortcoming of Federal Government research efforts but points to a derth of data on employer perceptions of research student graduates generally. To the authors’ knowledge, a wide ranging study of employer perceptions of graduate research students has not been conducted in Australia to date.¹

While this situation will not be remedied by this pilot study, preliminary inquiries indicate that peak professional bodies, such as The Royal Australian Institute of Architects, while themselves supportive of research and research training believe (informally at least) that this is not shared by the architect profession at large.² It is anticipated that a survey of employer attitudes will be included in any future project.

3.3 The international context

The view that research education is in need of reform is echoed around the world. In the United States the Pew Charitable Trusts have responded to what they see as a longstanding crisis in research education by establishing two wide-ranging national projects. The Re-Envisioning the PhD³ project brings together Government, industry and professional organisations, students and academics to debate and set out an alternative model of the PhD degree. At the same time, the Trust has undertaken an interdisciplinary survey of current research students in nearly 30 American Universities; *At Cross Purposes: What the experiences of today's doctoral students reveal about doctoral education* (Golde & Dore, 2001). While there are notable differences between the Australian and American research degree models, the findings of the study reveal considerable parity with concerns expressed in this country:

- The training doctoral students receive is not what they want, nor does it prepare them for the jobs that they take and;
- Many students do not clearly understand what doctoral study entails, how the process works and how to navigate it effectively. (2001, 3)

Note, however, this conclusion was based on a sample of students in which 95% were enrolled full time.

Attention has also been given to the research degree in the United Kingdom, particularly around addressing the type of concerns expressed above. The 'New Route PhD' initiative, for example, undertaken by a consortium of 10 UK universities, offers students an alternative to the traditional PhD by combining a specific research project with targeted coursework and professional skill development.⁴ This model, however, appears to have been largely devised with full time students in mind. Focus has also been given to the skill development of research students in studies undertaken by the UK Council for Graduate Education. The Council conducted a survey of over sixty institutions in 1999 into their

¹ DEST has recently commissioned a study by Assoc Prof Rob Gilbert of James Cook University that is expected to include employer perceptions of HDR graduates.
² It is worth noting that the RAIA have just initiated the development of a research policy that it is envisaged will address the role of research within professional architectural practice.
³ See: http://www.grad.washington.edu/envision/
⁴ See: http://www.newroutePhD.ac.uk/index.html
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provision of research training programs for Humanities students (Patterson, 1999). Again, however, the focus is largely around the needs of full time students. These, and many other initiatives, demonstrate a widespread concern around the world to make research degrees more relevant to the needs of the 21st century.

4. Research Design

This study is a pilot. It examines a portion of students at RMIT who are enrolled part time in degrees that have a traditional association with professional careers, ie; tertiary teaching, the public service, and architecture. The characteristics of this group diverge from what is often treated as typical of research students: aged under 30, enrolled full-time, and lacking in work experience related to field of study. While the features of a typical research student are rarely made explicit within Federal Government policy announcements, they tend to be reflected in the policy position announced. For example, the emphasis on the need to promote student mobility in the 'Learning for Life' (West, 1998) report. This assumes students are young, unemployed, without dependents etc and therefore able to 'up stakes' and move to another state at will. Again, as discussed earlier in this report, the view that research students lack employment experience and related skills assumes that most are young, have never entered the work force, and are enrolled full-time. This study aims to test these assumptions through deliberately focusing on part time HDR students who are already in the work force. 5

4.1 Population

The study's population is all HDR students enrolled part time in the School of Architecture and Design and the disciplines of social science and social work, from the School of Social Science and Planning, in the Faculty of the Constructed Environment at RMIT, October 2001. Note, however, that while being enrolled part time was a condition for inclusion in this study, working full-time as a professional was not (indeed, while anecdotally many of these students were thought to be working as professionals, this was part of what the study aimed to discover). Demographic and other features of the study's population can be found in tables 1 – 3.

4.2 Methodology

The study employs primarily qualitative methods for both data collection and analysis, with the main data source being open-ended focus groups and interviews. A questionnaire, containing both open-ended and multiple-choice questions, compliments the focus groups and interviews by providing data obtained from a broader sample. A third layer of data was provided by a literature search. This is used to contextualize the study in relation to relevant issues and debates within higher education research and public policy generally.

The method of data analysis reflects the nature of the data obtained, whether qualitative or quantitative. Data from focus groups or interviews and the open-ended section of the questionnaire has been analysed using a broadly interpretative framework. Data obtained through multiple choice questions has been tabulated and analysed in relation to the respective sample and the population as a whole.

4.3 Ethics

The study received ethics approval from the Faculty PhD and Human Research Ethics Subcommittee, Faculty of the Constructed Environment, RMIT.

5 The case for recognising existing diversity in the HDR system has also been made elsewhere, particularly, Margot Pearson and Lys Ford (1997).
5. Data Collection

Data was collected for the study during spring – summer 2001. From a population of 182 HDR students, 22, or 12%, participated in either a focus group or interview and 68, or 37%, responded to the questionnaire (note that each sample overlaps).

Focus group and interview participants were asked questions on their work experience, their motivation for doing a research degree, how they understood the nexus between their research and work activities, and generic and research capabilities acquisition and deployment. A short survey was also conducted at the commencement of focus groups and interviews containing demographic and work related questions (see table 1).

Along with demographic questions, the questionnaire contained a series of multiple-choice type questions on work related topics, such as employment status, career stage, whether research is related to work, whether research capabilities are valued at work, and professional development. Questionnaires also contained four open-ended questions on what motivated respondents to do a research degree and whether instances of cross-fertilization had occurred between research and the work place. The last part of the questionnaire asked respondents to chart their capabilities development in relation to work and research experience (see table 6).

6. Data Analysis

The data obtained by the study, while representing two broad disciplinary areas: architecture and design and social science and social work, has largely been integrated for the purposes of analysis. This is not intended to obfuscate disciplinary differences, but rather, point to the similarities between these disciplines when it comes to being different from the way in which the typical research student is usually presented.

Analysis of the demographic characteristics of the study's samples in relation to the population of the study is located in tables 1 to 3. Table 3 shows that in all forms of data collection a greater response was obtained from architecture than social science students, reflecting the larger proportion of the latter students in the study, but that students from the social sciences are slightly over represented as a proportion of the total number of participants. Table 1 shows that focus group respondents were predominantly male (64%), aged in their 40's and enrolled in a PhD. In contrast, table 2 shows the majority of respondents to the questionnaire were female (51%), aged in their 30's, and enrolled in a Masters degree. Such differences balance out, however, when compared to the total study population and are not thought to be significant. The majority of students within the population were male (56%), aged 40-49 (39%), and doing a Masters degree (60%) – see table 3. The study response is representative of the population.

7. Findings

By way of summary, this study has found that:

- the study's participants are predominantly working full time as professionals
- professionals come to the University to do research because such opportunities are not afforded in the workplace
- the research conducted by professionals as HDR students is productively related either directly or indirectly to their work activities
while many capabilities are identified as being developed through a combination of both work place and research experience, the attainment of certain skills, such as critical thinking, is attributed special significance and is thought to be developed primarily through research experience.

Detailed findings are presented in what follows under broad subject headings: professional experience, motivation (to do a research degree), nexus between research and work, and capabilities.
7.1 Professional Experience

What is the professional experience of the participants in the study?

“I’m currently a manager of social policy at BHP Billiton, which is a policy development position around various social issues from human rights to community development to stake holder interaction. It’s a strategic role that advises globally.” (Soc Sci)

“I graduated in ’84 from the Architecture Association in London. I worked in London from ’84 till 1990, then I immigrated to Australia in 1990 and spent until 1996 in Sydney working. In 1996 I moved down to Melbourne. So from 1996 until now I’ve been with [], and I’m an Associate Director there.” (Arch & Des)

The students who participated in the study are mature, experienced professionals who are engaged in specialist careers that are significantly related to their area of research.

As table two indicates, while 18% of the study's participants felt that they were at the early stages of their career, the majority, 41%, believed that they were part-way, or mid career, and 26%, established. Another indicator of work experience is age. The majority of respondents, 43%, were aged between 30 and 39, and 31% were aged between 40 and 49. Moreover, except for a small minority (7%) who were not employed, these professionals do research in an area that they believe is either directly, 63%, or indirectly, 28%, related to their work.

The professionals who participated in focus groups and interviews provide a more distinctive picture of the characteristics of the study’s participants. Of this group, who constitute 12% of the total population (see table 1), 85% worked full-time – 30% of those as academics, 11% had part time work and 4% received family support. 60% of these students were doing PhD and 40% Masters degrees. Similarly, 60% were undertaking research in thesis mode, and 40% were doing research by project mode.

Differences, however, in research degree mode and type do not seem to impact on perceptions of the relevance of undertaking a research degree. 95% believed that their professional activities were in a similar area to their research program.

Most participants in the focus groups and interviews had between 10 and 30 years of professional experience. They work in both the public and private sectors in roles ranging from associates, senior public servants, project and case managers, to consultants and company directors. A large proportion could also boast both national and international experience – particularly in the field of architecture and design.

Those in the social science fields, for example, work in Government departments or ministerial offices, public and private welfare providers, or act as consultants.

I did a graduate program with the Commonwealth Public Service.... Then, after I completed that I worked for the Dept., of Social Security in Canberra – for 3 years I think it was. I worked in the social policy area of that department, and then I moved to Melbourne. I took leave without pay from my job and did a graduate diploma for a year. Then I got a job in the Victorian Public Service, left the Commonwealth and worked in the Department of Premier
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and Cabinet ... for 3 or 4 years, I can’t remember. Now I work in the Department of Education. (Soc Sci)

I trained as a youth worker. I’ve worked as a youth worker, pre-development worker, and manager within in-services, sat on endless committees, etc. I’ve got a very broad base of experience in all of that human service type of stuff. I’ve worked in the Department in policy as well. (Soc Sci)

[I’ve] basically been in the state public service for the past 13 years. Started with my sustainable agriculture research activities, [then] getting into more planning at a regional level, then getting involved in a state-wide environmental policy. So regional and head office experience. (Soc Sci)

I trained as a teacher when I left school and taught for a few years, did some study overseas for 18 months, worked in education for a couple of years in an office. I then took something like 8 years off to have my children. Did an arts course and a Bach’ of Social Work during that time and worked predominantly in a lot of policy and planning areas in Children and Family Services. Then I retrained my teaching [qualification] 13 years ago. I set up private practice in counselling and consultancy, which I’ve been doing ever since. (Soc Sci)

Those in the architecture and design fields work within private practice – both large and small, and as either associates or directors of their own firms. Some also combined private practice with full-time academic teaching careers.

I’ve been involved in studio as a designer since about 1983, so about 20 years, that was basically after graduating in architecture, and then at the beginning of the ’90’s I did a Masters in architecture. ...[In my current practice where I am co-director] we’ve worked in publishing, graphic design, advertising, multi media, architecture, interior design, exhibition design and industrial design. (Arch & Des)

I graduated 7 years ago ...from RMIT architecture. I worked overseas in Singapore for the government for 2 years, then I returned to Melbourne where I worked for Loren Architects for another 2 years, and for the last 3 years I’ve been working at []. (Arch & Des)

I’m a landscape architect, I graduated in 1986. I’ve always worked for myself. About a year ago my husband and I set up our own practice. He’s also a landscape architect. He’s an urban designer though, and I’ve always practiced in the area of heritage and history. All of our work is in the public realm. Public parks and gardens are really my specialty. I’ve written a book on Melbourne’s Parks and Gardens. (Arch & Des)

Oh, in Italy I started to teach basically just right after my graduation, 1985, and in 1986 I started to work as a tutor at the university. ...I have been teaching at RMIT since 1996. ... I have been practicing even before coming here, ...lots of competitions, initially when I was younger; housing commission, residential housing, some other projects. Yeah, at the moment we are working ...mainly in the housing field, residential, private. (Arch & Des)

I worked as an architect in a practice in South Africa and migrated and worked in Perth as an architect, then migrated from there to Canada, worked as an architect in Canada in Toronto. Came back to Melbourne and worked as a retail architect for a couple of years and then found an advert in a newspaper and I found myself as a teacher. I taught for five years and took up the position of academic head... (Arch & Des)
Summary

This selection of comments demonstrates both congruence and diversity in the professional experience of participants.

Differences are most apparent in the type, or content, of work undertaken, the degree of national and international exposure, and time spent in the work force. More significant, however, are the similarities.

The professionals involved in the study are not new to the work force, they have accumulated a breadth of knowledge and experience within the sphere of a specific career path and the careers that they have are thriving. This is not a group of people who are at a loose end or who are attempting to revive – or redeem – an otherwise lackluster professional life. For these students, a research degree compliments an already successful professional career.
7.2 Motivation

What do professionals want from a research degree?

“[We are] coming to university for the research experience and the connection with ideas. So then it’s silly to try and model the research experience more on workplace skills because that’s what we’re trying to get away from. ...The university provides something that the workplace doesn’t. So the more you make the university like the workplace, maybe the less attraction the university would have.” (Arch & Des)

What does a research degree offer professionals?

“Our particular commercial structure is very interested in ideas, and in improving one’s ability with those. It's appropriate to look to the academic area as a resource, as a domain that has preoccupied itself with disciplines of ideas.” (Arch & Des)

Professionals motivations for doing research degrees are rarely singular and involve both personal and professional factors. More subtly, however, for many professionals it is evident that personal and professional motivations are interrelated and inextricable. Personal development and fulfilment is related to, and in part informs, professional development. What is also evident is how the role of the University is perceived in providing the structure of an academic context in which such motivations can be met. These elements of what motivates professionals to commit to research degrees were confirmed through both the focus group and interviews and the questionnaire responses.

Overwhelmingly, research provides an opportunity to reflect on work related issues, to inform practice, gain expertise/confidence, improve skills, remain in the workforce, improve a current job, or, for a few, to get a new one. How does the University support these aspirations? It does so through access to people, ideas and expertise, by providing distance from workplace demands and limitations, encouragement and support, and intellectual stimulation.

The distance provided by the University from the workplace for critique and reflection was a constant theme in focus groups and interviews:

I thought it was a good time to do some further studies and have some reflection, having worked at that point, five and a half years. ...It means working on some larger projects that aren't necessarily encumbered by issues of economics and pragmatics and stripping away a lot of the variables that are there in the 9 – 5 and giving you a chance to focus on some core issues that are outside of those other issues that you find during the day. (Arch & Des)

I needed to go somewhere where I could think critically about my work and, being in a mainstream organisation - although heavily involved in developing women's programs - it's not as explicit as what I had been used to in terms of working for women's organizations. So it was difficult for me on a personal level and professional level not to be able to have explicit conversations about feminism. So I needed to go outside of the organisation. (Soc Sci)
Also prevalent was the theme of expertise and confidence building:

...I wanted to be able to say with a reasonable amount of confidence that ‘yes, I do know a little bit more about what I’m talking about’ ...and I think at the end of the day it might make the difference between being a director and having your own practice.” (Arch & Des)

I see myself very much as a practitioner. A lot of the ways I work are not exactly accepted by standard organizations and I’d often got a lot of reaction and flack saying that I was anti-intellectual or non-scientific or non-academic. So in one way I did it to explore this background to everything I was and am and the way I work... (Soc Sci)

I suppose in the large part I’m studying because I don’t find that I get sufficient satisfaction out of my work and also essentially to improve my self-confidence and my self-esteem. (Soc Sci)

While for others work-related motivations are inextricable from personal motivations:

...It's definitely about developing professionally as a designer, and it's also quite selfish in a way in that I find it’s also a recreational activity. Isn’t it fun also? Sort of to stimulate your mind in the same way that work should be enjoyable and not the kind of loathsome and mechanical activity [that it is]. (Arch & Des)

I had a number of motivations. I suppose the first of them was desiring some sense of independence in terms of my own design work. So whilst students stand all day working with another architect, it's actually quite personally satisfying to develop some independent thought and strategies. Also in terms of longevity in the industry, like, you need to be able to do something particular yourself. (Arch & Des)

Professionals’ motivations that are not directly work related tend to centre on the exploration of ideas and intellectual stimulation. Sometimes the decision to undertake study was spontaneous, or prompted by a staff member:

I had a fax actually from [] saying this is the last day you can enrol and you can do it for free. I said well I haven’t really considered doing it. He was offering a Masters, and I said I’ve got a Masters. He said well what about PhD. So I vaguely thought when I retired I might do something in a totally different field but because it was free that was the motivating force, and I thought it was a good way to structure my research. (Arch & Des)

For a few the motivation was not fully understood by the individuals themselves:

It's important to me rather than any kind of purely vocational advancement...it just seemed to be this sense that I have something inside me that says I had to do it, I’m not sure why. (Soc Sci)

While for others it couldn't be simpler:

The research is just like staying at school in order to have a better brain. It's very, very simple. (Arch & Des)

I find it intellectually very gratifying, but it has no meaning to me beyond that. (Soc Sci)

I decided that I wanted to do something which was mine and independent and a different way of learning. (Soc Sci)

Motivational factors do not appear to differ significantly along disciplinary lines. However there are some factors influencing the architecture and design academic staff included in the study that are unique – due largely to the fact that the move to Doctoral level qualifications is relatively recent for this group. Not surprisingly, the most significant of these is teaching:
There was a desire to do something ...that was trying to reconcile the things that I was doing with my students and the things that I was doing in practice. (Arch & Des)

Also evident was a perception by many architecture and design academic staff that research was something that had to be done in order to remain – or even for some become – an academic.

I also feel that there was pressure from above to actually be engaged in further research. (Arch & Des)

...[The] importance of doing a PHD if you want to continue as an academic. (Arch & Des)

...Wanting to mark out that space within my life, my academic life within the university as a place of research. (Arch & Des)

The questionnaire provided additional data on what made the professionals who participated in the study decide to study at RMIT. Of these, the perceived eminence of the institution, its programs and staff were the most significant. Often contacts had already been made at RMIT and through that a belief had been formed that RMIT's rigorous and innovative programs and staff set it apart. In this regard, the project mode of research figured significantly for architecture and design students, while social science students were attracted to the values and theoretical orientation of supervisors.

Summary

*Professionals are motivated to do research degrees in order to develop both personally and professionally, but where the personal and professional are often seen as interrelated. Professionals want to engage with ideas and they also want the added confidence that comes from increased disciplinary knowledge and research experience. The University is understood as a site in which critical distance from, and reflection on, workplace practices and issues can occur, and also, as providing a source of ideas for application within professional practice.*
7.3 Nexus Between Research & Work

What is the relationship between professionals research and work activities?

“Sometimes I think of it in terms of a parallel text, that the two are in a way telling the same story but in a different language. There are a lot of similarities in terms of the methodologies and strategies that I employ in the Masters as well as those that I use during the day. But they’re not exactly the same and it’s very hard for you to say, I did ‘X’ in my Masters on the weekend and then I was able to do the same thing again at work. It’s actually really very hard to find a direct link. But I guess I know intuitively that there are very strong linkages, because the problems are the same and I guess you are exploring a very similar solution set.” (Arch & Des)

“The cross fertilization or the direct linkage is not with the public sector even though I was working in the public sector and the thesis was about environmental policy. The connection was with the community activist groups. ...They were trying to change government policy. ...No, there's been no connection with my workplace, in fact, if work were aware of what I was doing they would be really pissed off.” (Soc Sci)

Professionals engaged in research degrees experience a strong relationship between their work and research activities, with few exceptions. Indeed, the relationship is so strong that this point was largely treated as a given in the discussions. What did occupy the attention of focus group and interview participants was the question of how the nature of this relationship might be better understood. Searching for the appropriate language, untangling intermeshing elements into distinct parts, and giving air to the nuance, featured in many of the discussions. Not just telling the story, but getting it right, mattered to those who participated. The reason for this was obvious: professionals are committed to research. They see their research as an integral part of what it means to be a professional, or even more, of being a good professional. Research, and what it implies: critical thinking and engaging with ideas, is good professional practice. It gives professionals the opportunity, the distance, to reflect on what they do professionally as well as a critical framework that enables them to assess and talk about their practice. The fact that these professionals have persisted with their research, juggling their work and family commitments, is probably testimony enough that research is believed to be important. But the findings of this study give voice to why this might be the case and how professionals engaged in research degrees understand what they do.

The nature of the relationship between research and work varies. It may be direct, indirect, constant, variable, accidental or deliberate.

The relationship between the two is intimate, it's totally intimate because everything in a sense is all connected: ...your whole life becomes a research project. (Soc Sci)
...It's not the case of there being a difference between my professional work and my research. It's the same thing. (Arch-academic)

I tend to jump between disciplines, between projects, between research and projects. I don't really make boundaries. (Arch & Des)

Unsurprisingly, the links between research and professional life were strongest for academic staff for which research was understood as feeding directly into teaching and vice versa. The connection with architectural practice also provided a third layer of interaction for many academics in architecture and design.

If I link the research activity with my teaching activity as an academic it's quite direct. I teach what I research and vice versa. I don't see any separation between the two. (Arch – academic)

I have to say it's directly related, the professional work I do at the moment is all academic. If it's not research assistant work it's my own teaching in subjects that are directly related to much of what I'm studying, collaborative papers that I write and the ones that I write on my own, directly relate to my experience and research. ...At this point in time the professional work comes directly from my research experience, my writing experience and teaching experience. (Soc Sci)

However, even for those professionals who do not teach, the majority were still able to identify ways in which their workplace practice is informed by their research. As reported in section 7.1, the questionnaire and focus group and interview response indicates that over 90% of professionals felt that their research was either directly or indirectly related to their work. Focus groups and interviews show that this can happen directly, or at the level of content, or more indirectly in the form of an alternative approach to how workplace issues and practices are understood.

I'd argue that one of the biggest things that's occurred for me is I've now got an extra set of valuable tools which I didn't have. ...The way you'd analyse things and think about things is very different. (Arch & Des)

...Increasing an understanding of something and saying there's another way of dealing with it. (Soc Sci)

I'm a very intuitive designer and through my research, through my Masters course, I've actually had to slow down and have had to be able to rationalize or justify every single skip along the way. I find that really, really difficult to do and that transfers directly across to my architecture or design at work because I can come up with four or five ideas and have a vehicle to explain them. (Arch & Des)

[Doing research provides] a sense of context about why this thing might be happening or why this might be on the agenda at a particular point in time: the bigger picture. ...Unless you actually appreciate that context ...it's going to be very difficult to develop a valid response because you're kind of very limited in your view, or very limited in your understanding of how the thing actually works and what the drivers are and what are the influences on it. (Soc Sci)

About 6 months ago I think it was, I was asked to work on a paper on problems with the job network. I was asked to do that in very quick time and the fact that I had already read a number of papers about the job network as part of my degree I could do that much more quickly and was aware of various literature that may otherwise have taken me a while to collate. So that helped me to be more wide ranging in the paper that I was doing and to do it more quickly than I could have done it otherwise. (Soc Sci)

I think that the body of architecture or the knowledge of architecture is fundamentally problematic, and the harder and harder that you work at it, in a way the more problematic it becomes. So when you're looking at doing a Masters of architecture or a study of architecture, you actually question a whole lot more things, so it's harder then to speak of a
concrete outcome. You just say well I've actually been successful in describing this little pocket of uncertainty and I've managed to capture the question or the problem in one sentence. Here then is my answer, but the answer itself is never really very succinct, it's more complicated again. (Arch & Des)

There's elements of the research (because I'm working in schools and studying schools) I had an opportunity to go back and look at issues of education and equality from a historical perspective and also look at a range of different political positions, so that's been very, very helpful. I don't think I would have had the same rigour if I had to do that without the same academic support. I actually think that's one of the reasons why our work actually works so well. (Soc Sci)

...It's about a process of moving from idea to a drawn thing, or a built thing. You do that just as much at work and also rigour is important there but for a whole different reason. If you can say 'I've drawn this' and commercially it makes sense in this and this and this way, that's the argument that they want to hear and that is how you get your design through - and that is a very useful method. It's quite a rare skill. (Arch & Des)

...It allows one within the framework of the Masters degree, connected with one's work, to start spending time being reflective about it. Trying to really question your work and your methods: be critical about it, away from the general pressures of the day to day work and stepping back from it, look at the work that you produce. (Arch & Des)

Workplace tensions were evident across the disciplines. While all respondents felt that their research was good for them professionally, not all felt that their employer, colleagues or clients would agree. While it was rarely felt that an employer would be openly hostile if they were to learn of the content of the research, such cases do indicate the tensions of undertaking research related to one's area of work. What participants' comments also indicate is a considerable lack of understanding of research degrees beyond the university.

['Is your research recognised in the workplace?'] No. Really it's a disadvantage, because they would marginalize you saying, oh you know, what about the real world. This 'high-falutin' stuff, doesn't work in the real world. (Soc Sci)

[Research is] really strongly supported in the workplace as a valuable thing to do ...because it allows people to be challenged and stretch their minds, rather than being able to do a limited amount of work. (Arch & Des)

They're supportive, well they say they support my study but it was difficult to negotiate any arrangement. (Soc Sci)

I find that there's a marked lack of interest in the research I'm doing in my current work area. In other words, I'm rarely asked anything about my studies. To me it's quite noticeable. (Soc Sci)

God no, most of my clients have no idea that I have any qualifications whatsoever, nor would it be a good idea for me to tell them. Often when you're talking to someone who's running a very large - who's in his or her mid 50's - who's running a multi million dollar industry, they might be impressed by the suits you wear or the car you drive, but if you tell them you've got three degrees, they'll, like, get a bit edgy. (Arch & Des)

The organization has been tremendous, really, at a practical level. I've had study leave all the way through....They only have a policy up to 5 hours a week, and for a research student it doesn't really get you anywhere, but it's handy. (Soc Sci)

...I can't see a Masters would benefit me financially in my work at all. I mean I'm not going to be able to charge any more money because I've got a Masters, and I don't think anybody would say; 'we'll get her to do it because she's got a Masters'. (Arch & Des)

Cultural tensions can also occur between the workplace and university, but this was largely restricted to professionals in the area of social science.
...wanted to workshop my thesis. What my thesis is about basically is developing a process with people in professions doing theory and practice. So then I wanted to develop workshops in which I could help professionals to do that. Now my preferred choice would be to write the type of thesis that would actually do that. So I wanted to be able to do a multi-dimensional type of thesis. I would have liked to have produced a thesis that was partly written, partly multi-media, partly presentation, I would have like to have been assessed on running workshops, and on the basis of the preliminary part of my thesis. If I’d been able to do it that way it would have been intimately connected with my work. Instead, I produced a thesis, this is my hypothesis for the thesis, and now I have to spend all this time writing it up in some academic tone that I find completely, enormously frustrating, anxiety producing, and time consuming and I can’t get on to do what I really wanted to do this thesis for. (Soc Sci)

But I do have a similar problem in that it’s two totally different mindsets in that while the research and the readings are relevant the way of writing is totally different. When you’re studying part-time and working full-time and you have to work in an area where you have to do one page briefing papers and it has to be to the point and in brief so that someone who doesn’t know a lot about the subject can consume that information very quickly ...to then coming in the afternoon and talking to your supervisor who wants you to unpack everything and talk about it. I find that transition particularly difficult, although it’s still a relevant skill because it helps me in another way. So it’s quite complex. (Soc Sci)

It is perhaps surprising that despite some of the workplace tensions experienced by professionals they reported an overwhelming sense of legitimacy and confidence from doing a research degree. In the context of the previous statements, it seems that for many this confidence is not derived from their colleagues, employers or clients but is rather something that is nurtured from within. Some of the following comments also begin to suggest a link between confidence and innovative workplace practice – or risk taking.

I mean my stuff has a really critical edge to it [but]...I don't feel uncomfortable when I go back into the school. Whereas I think if I hadn't had that academic support all that time then I wouldn't have been as comfortable, I would have been uneasy... So it's certainly increased my level of confidence. (Soc Sci)

...When a client says; ‘can’t we do it this way’, you know directly OK no you can’t because and you’ve got some kind of research backing for it. (Arch & Des)

It’s a credibility thing. To have it [the program] endorsed by the faculty as a legitimate exercise in research, where you are taking risks. In the normal area of social work practice I mean these things don’t happen, it doesn’t happen. Unless it’s something that is publicly endorsed. (Soc Sci)

Yeah, certainly my confidence has grown substantially since my Masters project has started. (Arch & Des)

I have more confidence than I would otherwise. If I hadn’t done research myself I may feel a little like, when contracting researchers I can’t really assess what they’re telling me. I know that I can’t really question what they’re saying because I don’t have the experience. So I might have to take what they say on face value. (Soc Sci)

PhD gives you acumen, people listen when you say something. (Arch-academic)

Also at odds with how professionals perceive the way that others value their research is the view that they have of it themselves.

It's good professional practice to actually engage with the issues and the ideas and be capable of doing that. (Soc Sci)

Well it's highly symbiotic. I don’t think design as a discipline is worth anything without being a discipline that’s very preoccupied by research. (Arch & Des)
...Getting a broader appreciation of what the role and responsibility or a perspective on the role and responsibilities of the public service and how it operates in the policy process are really important insights, compared to people who – yep I’m a public servant, I do what my boss tells me. There’s no kind of sense of the responsibility to the public on their accountability or anything like that. They just, yep I’ll do what my boss tells me. (Soc Sci)

It's building a sensibility ...You could say that in a way because it's quite thoughtful and self-conscious building of the sensibility rather than just saying I have good taste, or I know how to design a building. In fact you say, I know how to design a building, but one thing I’m sure of is that it's never quite right. I suppose doing the Masters gives you a structured way of peeling away a lot of other concerns and focussing on what that not quite right could be. (Arch & Des)

...I think by having addressed the issues that I’m addressing in my project. I’ve thought more deeply about the operation of government and it's relation to society in the relation to politics and the role that the industrial relations commission of bodies are likely to play. So at the end it's another direct link. (Soc Sci)

...It just makes you a better practitioner because you are looking deeper into things… (Soc Sci)

Some of the tensions identified above in the disjunction between professionals’ views of their research and those of their colleagues are reflected in data obtained from the questionnaire – see table 2. Participants were asked whether they believe that their research degree would significantly contribute to their professional development or future job prospects. While 59% responded in the affirmative and only 9% in the negative, a significant proportion: 24%, were unsure. If the above comments are indicative, it is the view that others might have of research degrees that professional are unsure about.

**Summary**

_The relationship between professionals’ research and work activities is strong. For some professionals the two are symbiotic with the content and issues of one being fed directly through to the other and vice versa. For others, however, the strength of the relationship lies in the bigger picture, background or broader context, which the research topic provides to workplace practice._

Research and workplace practice, however, are not the same – and nor would they want to be. Research activities often exceed those that are possible within the constraints of the workplace. Sometimes the constraints of the workplace are political, but more commonly, they are the everyday pragmatics of running a business, working in a busy architectural or Government office, or running a course. Doing research provides the distance through which it is possible to scrutinize, reflect on or go beyond such constraints.

Overall, professionals believe that doing research makes them better professionals. It informs their work through disciplinary expertise and research knowledge and gives them confidence in, and a critical perspective on, what they do.
7.4 Capabilities

What is the role of research in building workplace capabilities?

“It seems to me that post graduate research degree people are treated a little bit cautiously if they've done it. Are they too specialized, are they not applied enough, not practical enough? I mean I haven't experienced that because I was already in a job. But if I was applying for a job and I didn't previously have public service work experience I think that there would be those questions asked perhaps. So it's not necessarily all a positive thing to have a post graduate research degree. You have to prove that you also have practical workplace skills etc. Also the most important thing is you are judged on workplace performance, not on academic credentials.”

(Soc Sci)

“One of the main things about research is the research itself, knowing how to do it, knowing where to go: becoming a real ferret for information and maintaining your curiosity. So one of the main attributes that research brings is being able to do it. The methodology.”  (Arch-academic)

John Bowden (etal, 2000) describes capabilities as qualities, skills, and understandings. They can take the form of, or go beyond, disciplinary expertise or technical knowledge. The capabilities referred to here are largely transferable, generic and research related.

Focus groups and interviews reveal that professionals acquire and develop capabilities from both their research and workplace experiences and are able to transfer them between the two. But, of course, separating the two can be difficult:

I suppose I was just sitting here thinking also that a lot of the difficulty with trying to find discrete things that move from your private study to your professional life is also the nature of the work that you do in your professional life. It's not for instance location specific. Your work doesn't just happen at your desk, it happens in the kitchen, it happens at home, it happens on the weekend when you're doing crossword puzzles. It's the same with your Masters. Your Masters is not just happening at that particular time that you have to write your 5,000 word essay due tomorrow. (Arch & Des)

...Project management decision making, self reliance, self motivation, those are obvious kind of things but again I'm not sure if they're unique to professional life and absent from academic life. (Soc Sci)

Nevertheless, while recognising that research and workplace related capabilities are not always distinguishable, most professionals were able to identify a specific range of capabilities that, while being developed primarily within the workplace, are transferable into the research context. The workplace has a productive role to play in developing research capabilities, particularly organisational, communication and written.
Oral communication skills in particular and liaising with other organizations. Because of my work experience I think I have more confidence in doing that, than I would, I'd definitely have more than if I didn't have my work background and was for example going straight from under graduate to post graduate. Probably organizational skills, time management, prioritising. (Soc Sci)

Well, principally, if you're talking about the kind of impact of a professional career on anything else [it] would simply be notions of economy. How fast can you do it, and with how few people. It breeds an extraordinary intolerance of anything that you believe is true time wasting. (Arch & Des)

...Understanding how research is used by government...How to make research relevant to policy makers. ...It makes me think about when I get certain findings how they are likely to be used by people in the policy division. What are the possible interpretations...I think doing my research even if I didn't work in government I'd be aware of some of those issues. I just think it [work] increases my awareness of it. (Soc Sci)

Teaching and selling, and being very aware that it is important to make ideas seductive if you want other people to spend a moment of their time actually contemplating them. (Arch & Des)

The major thing is sticking at it. Because it's really hard. The doggedness. Persistence. (Soc Sci)

One particular set of capabilities that professionals felt were usefully transferable from the workplace to their research is networking – not just in terms of having networks but also in understanding the importance of building and maintaining relationships.

In fact most of my research is done through people, contacts. ...Having run across the tracks before you meet people you know who are the experts in what. You keep a diary of the names and addresses, these days email. (Arch-academic)

The number of people who I know in the public sector through work is really useful for the study. (Soc Sci)

It means I have more contacts than I would've had if I wasn't doing the degree, and how to make academic contacts. (Soc Sci)

Some participants, more commonly from social science, identified tensions involved in transferring capabilities from one domain to another.

The other thing would be some of the capabilities, professional skills, may not actually be that useful for academia. If you write in a particular way in your professional life that's actually a different style of writing that's not engaging the nuances of the argument, you're writing a particular way but not actually teasing out the implications. So that's something I think I'll have to unlearn in some ways. (Soc Sci)

[Critical thinking] can be a liability if you can’t accept that certain things are given parameters in the public service. In a given set of policy settings by government, there are certain things which you need to more or less accept that those are in place. If you aren’t willing to accept those things then it wouldn’t be suitable employment for you. (Soc Sci)

But not all of the workplace-derived capabilities identified are what one might expect. For a number of professionals practices that more typically belong in a university environment have always had their place within professional life.

One thing I've encouraged my team to do is professional development, I've always taken time out to read and to seek out others to support my evaluations, there's never been a job where I haven't had a critical phase. So for me to go into that world of academia is just another way of formalizing something that has always been part of my workplace practice. (Soc Sci)
...There is the reference to things that one comes across within the office and that comes through in a number of ways. One is just discussion and reflection in one group if you were sitting down and talking about things and allowing yourself to also listen to other views and then, trying to judge whether those views are something that you feel, irrespective of whether you agree or disagree, something that you should follow up and try to understand their viewpoint or the argument. (Arch & Des)

Just as workplace capabilities were seen as relevant within a research setting so the reverse is true of research-derived capabilities. Of these, analytic capabilities were paramount: critical thinking, focusing outcomes, constructing and defending an argument. Professionals also gain from the general research capabilities that are derived from doing a research degree, such as being able to secure and access a range of materials, draw on a body of knowledge, and effectively communicate the outcome. Writing skills are thought of as being particularly valuable, for while such skills are also developed through workplace experience, doing research adds the ability to sustain a larger more complex body of work.

Writing ability definitely, because normally I write small things. It's quite different to write a large piece of work, and to write it in a readable, integrated way. (Soc Sci)

...There have been cases where I’ve been assessing tenders and I can look at the different methodologies and comment on which ones are more sound in my view than others. (Soc Sci)

Being able to have ...aggressive critical thoughts ...just being able to think through [things] confidently. ...That’s why I reckon you get paid more money or you’d be a director because you could make them think; ‘oh that’s a really bad idea to buy that site’, or ‘that’s a really good idea’: to be able to think through those things. Again, you have to develop your analytical skills. I think that’s directly linked [to my research]. (Arch & Des)

Definitely writing and definitely the research skills. I mean just being able to access the libraries, hunt out something on the internet. (Soc Sci)

I think it would be a strategic thinking. I guess it's seeing - it's almost like a spatial potential - when you are presented with a whole range of problems and interests. It's I guess being able to juggle those larger interests. (Arch & Des)

It's confidence. I think more than anything for me, always having this business of 'I don't really know what I’m talking about'; it’s a family thing. So that’s [the research] given me another confidence, that now I do actually know what I’m talking about…. (Soc Sci)

...Being critical I suppose means focussing the outcomes a bit. Being clear about what the stuff means. It's not just 'stuff', it can be interpreted in different ways. Getting past stuff to the level of intelligent interpretation. (Arch & Des)

...What it (the research) gives me in the seminar teaching that I do, or the history teaching that I do, is ...a framework for understanding things that you can apply to the materials. So OK guys this is the sort of stuff that we have to cover, because that’s what the syllabus says we’re going to cover. Now we can look at it from this point of view, we can look at it from that point of view and we’ll learn different things by looking at it from different points of view. (Arch-academic)

...In a broader sense, I think there’s a lot of connection because part of the task that we do, part of my daily work is to provide advice papers to members of the commission in relation to questions of work which arise in relation to the consideration of the matters that they have before them. So many of the skills that I think I’m developing through my research project, straightforward research skills and hopefully honing my writing skills, I think they will be bought to bear in relation to development of those sort of research background papers from members of the commission and the like. (Soc Sci)
Questionnaire responses provide a broad overview of the kinds of generic research capabilities that professionals engaged in research degrees feel that they are developing and where that development principally occurs – see table 6. It shows that most capabilities are developed through a combination of research and work experience, that the next greatest developer of capabilities is work experience, followed by research experience. Work experience is particularly strong in developing skills in leadership, teamwork, adaptability and strategic thinking. Research experience, on the other hand, is significant in developing critical thinking, project initiation, public presentation, and communication capabilities.

Summary

Professionals develop generic and research related capabilities through both their research and workplace experience and many are transferred between the two.

Doing a research degree is particularly good at improving analytical skills, such as critical thinking, as well as written skills, and professionals think of these as being of particular value within the work place. Such capabilities, however, are also developed within the workplace and many professionals bring them with them from their work experience into their research.
8. Reflection on Research Question

Part time research students in professional work experience strong synergies between their workplace activities and practices and their research.

In relation to the two key questions of this study the following has been found. The findings reveal that it is through a conjunction of work place and research experience that part time research students acquire and develop generic skills and capabilities. These capabilities are brought to bear on workplace practices, issues and relationships, particularly those related to critical thinking, project initiation and communication. Moreover, the reverse is also true. The workplace provides team work, leadership, task management and networking skills and capabilities that professionals productively draw on in their research activity.

This study also reveals that part-time HDR students in professional work do contribute research knowledge and skills to the workplace and that this contribution is attributed great value by professionals themselves. Research knowledge, or disciplinary specific knowledges and practices, provide professionals with ideas, rigour, and insight. This adds an additional perspective on workplace practices and issues, whether historical, theoretical, or critical, and that can be used to inform new ways of doing things or, alternatively, of not doing things. It is also evident that the development of research knowledge makes professionals more confident in what they do and more receptive to doing things differently – both essential to the innovation process. Overall, the research knowledge acquired through doing a research degree enables professionals to more fully realise their potential as professionals.

While the value of research knowledge and skills and generic capabilities to the workplace is recognised by professionals, this study reveals that a number of professionals do not feel that this contribution is appreciated or recognised by their colleagues and clients. On this point, the findings of this study do – in part – find agreement with DEST's claims about poor employer perceptions of research graduates. What this study demonstrates about this issue, however, is that the purported views of employers are at odds with those of professionals themselves. This points to the need for further research into this disjunction, how extensive it is, and how and why it is occurring.

Overall however the findings of this study challenge the veracity of DEST's statements about graduate capabilities and preparedness for employment when it comes to part time research students in disciplinary areas traditionally associated with professional work. In light of these findings, DEST's failure to discriminate between part time and full time research students in such claims is flawed because it fails to recognise such students' considerable professional experience and the strong linkages that exist between their field of study and area of work.

The failure to differentiate the part time research student experience might in part be understood as a symptom of the tendency of the Federal Government to treat full time research students as typical. The part time student experience is often neglected. Indeed, this neglect extends into – and is perhaps also an effect of – the way that DEST report higher education statistics. A hiatus exists in DEST's reporting of HDR data when it comes to part time enrolments. In the main, the unit of analysis used by DEST is EFTSU (effective full time student unit). While this is a meaningful measure for allocating funding, the dominance of data reported by EFTSU has the effect of distorting the true numbers of part time students within the system. The total number of research students in this country increases by a third when calculated in terms of total full time and part time numbers, rather than EFTSU, to constitute 49% of the entire HDR population – see table 4. Moreover, when it comes to issues such as graduate capabilities and employability, an EFTSU calculation of student numbers is meaningless (there is no such thing as a .5
individual). The experience of part time students should not in any way be diminished in line with their funding status, as it is only whole people who enter the work force and acquire and deploy research knowledge and skills. It is only by looking at the real number of individuals enrolled part time in research degrees that the significance of their experience becomes apparent.

8.1 The significance of the part time research student experience

This study suggests that part time research students in disciplines that have a traditional association with professional work perceive a strong and productive relationship between their work and research activities. But how significant are the experiences of these students in relation to the population of HDR students in Australia as a whole? Moreover, to what extent can the findings of this study be extrapolated beyond the sample?

DEST only publish data on the number of research students enrolled in particular disciplinary areas by EFTSU. It is possible, however, to request customized data on actual student numbers by field of study, which I have done. A look at the fields of study in which part time students are predominantly located reveals interesting results – see table 5. Unfortunately, it is not possible to extract social sciences data from that of the arts and humanities as a whole. Nevertheless, this data shows that there were over 5000 part time students in these areas, constituting 48% of the total, with the majority being over 40 years old. Data is available on social studies enrolments by EFTSU – see table 5b. This shows that social studies enrolments in the year 2000 accounted for 1351 EFTSU, and 41% of total enrolments. Table 5 shows that the majority of enrolments in architecture and building were part time in the year 2000, at 52%, constituting around 300 individual students who were largely in their thirties. The proportion of part time enrolments was even higher, however, in the fields of education and business, administration, economics and law, with the majority being aged over forty. It is interesting to note that these disciplines also have a traditional association with professional work. In the year 2000, 75% of education HDR students in this country were part time and 56% of those in business (etal), constituting around 4500 individual students. Combined, the fields of arts, humanities and social sciences, architecture, education, and business/law accounted for around 10,000 part time HDR students in the year 2000.

Whilst data is not available on how many of these part time students are actually engaged in professional careers while studying, the findings of this study suggest that it could be considerable. As the majority are over forty years old it would be safe to assume that they possess some degree of work place experience, and if they share any similarity with the RMIT cohort of this study, for many it will be related to their area of study. Further research needs to be done in this area, but these preliminary figures indicate the importance of taking account of the experience of part time research students enrolled in disciplines that have a traditional association with professional work when examining graduate research student capabilities and employability.

8.2 Conclusions

The findings of this study reveal the depth of work place professional experience possessed by what could be a significant proportion of research students in this country. These findings contrast significantly with claims made by the Federal Government and DEST regarding the poor preparedness of HDR graduates for the workplace caused through a lack of contact with workplace cultures and practices and the lack of connection between field of study and work. On the contrary, participants in this study undertake research that is closely related to their professional work, of which they have many years of experience.

Yet, due to being enrolled part time, the professional experience of these students seems to go un-noticed by the Government and DEST. Indeed, part time enrolment is effectively
discouraged by the new funding arrangements of the Research Training Scheme (2001). COG funded HDR places have been reduced and with the bulk of funding being provided to institutions upon completion, departments are under pressure to expedite completions and enrol full time students who will finish more quickly. The implications of this, probably unintended consequence, of the new regime may have long term profound consequences for some industries and professions.

The findings of this study suggest that the participation of part time professional workers in research degrees should be encouraged. While further research is required, these findings suggest that part time students who are already working professionals are well placed to engage in the knowledge economy and innovation processes. Research students who are already professionals should be recognised for the relationships that they build between the university and industry, both during their period of enrolment and upon completion. An expanded study of this type would investigate part time students in professional work within a broader range of disciplines and institutions in order to ascertain the extent to which the findings of this pilot study are translatable across the Australian part time HDR population.

9. Recommendations

**RECOMMENDATION 1**

DEST should revise the model of the typical research student as young, full time and inexperienced, that is presented in its policy documents, and recognise the very significant presence of part time research students that are drawn from professional work in many industries and who provide ongoing strong and productive university/industry links.

**RECOMMENDATION 2**

That Federal Government claims regarding the poor preparedness for employment of research degree graduates and the limited role of research knowledge and capabilities within the workplace be reviewed in light of the experience of part time research students in professional work.

**RECOMMENDATION 3**

That an Australia wide study, which extends the research presented in this study, be conducted into the workplace experience of research students with part time enrolment in disciplines that draw students from amongst professional workers in and expanded number of industries. This study should expand on the research presented here and report on employer perceptions of graduate research student capabilities and contribution to the workplace while they are studying. Consideration should also be given to researching the views of research students and employers two to three years after graduation.

**RECOMMENDATION 4**

That DEST review their practice of reporting HDR statistics primarily in terms of EFTSU and develop additional data series that report on actual student numbers so as to more accurately represent the experience of the Australian HDR population.
Table 1: Demographics & Employment – focus groups & interviews

<table>
<thead>
<tr>
<th>Question</th>
<th>SS&amp;P No.</th>
<th>Arch No.</th>
<th>Total No.</th>
<th>% Of total sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>gender: female</td>
<td>5</td>
<td>3</td>
<td>8</td>
<td>36%</td>
</tr>
<tr>
<td>male</td>
<td>4</td>
<td>10</td>
<td>14</td>
<td>64%</td>
</tr>
<tr>
<td>income: academic</td>
<td>2</td>
<td>4.5</td>
<td>6.5</td>
<td>30%</td>
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<tr>
<td>other f/t</td>
<td>5</td>
<td>7</td>
<td>12</td>
<td>55%</td>
</tr>
<tr>
<td>other p/t</td>
<td>1.5</td>
<td>1</td>
<td>2.5</td>
<td>11%</td>
</tr>
<tr>
<td>family</td>
<td>0.5</td>
<td>0.5</td>
<td>1</td>
<td>4%</td>
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<tr>
<td>professional activities in similar area to program: yes</td>
<td>8</td>
<td>13</td>
<td>21</td>
<td>95%</td>
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<tr>
<td>no</td>
<td>1</td>
<td>0</td>
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<tr>
<td>first enrolment: &gt;1990</td>
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<td>1991-1992</td>
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<td>2</td>
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<tr>
<td>30-39</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>36%</td>
</tr>
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<td>40-49</td>
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<td>5</td>
<td>9</td>
<td>41%</td>
</tr>
<tr>
<td>50&gt;</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>23%</td>
</tr>
<tr>
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<td>8</td>
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<td>59%</td>
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<td>4</td>
<td>5</td>
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<td>41%</td>
</tr>
<tr>
<td>Thesis</td>
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<td>Project</td>
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<td>9</td>
<td>9</td>
<td>41%</td>
</tr>
</tbody>
</table>

Note, fractions of whole numbers indicate response with more than one correct answer.
### Table 2: Demographics & Employment – questionnaire response

*Population = 182 (Soc Sci = 62, Arch = 123)*  
*Total response = 68 (37%)*  
*Response of respective population: Soc Sci = 45%; Arch = 33%

<table>
<thead>
<tr>
<th></th>
<th>female</th>
<th>male</th>
<th></th>
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<tr>
<td><strong>gender</strong></td>
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<td>49%</td>
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<td></td>
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<tr>
<td><strong>29 or under</strong></td>
<td>9%</td>
<td>43%</td>
<td>31%</td>
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<tr>
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<tr>
<td><strong>PhD</strong></td>
<td>41%</td>
<td>59%</td>
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<td><strong>thesis</strong></td>
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<tr>
<td><strong>program</strong></td>
<td>41%</td>
<td>59%</td>
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</tr>
<tr>
<td><strong>thesis / project</strong></td>
<td>63%</td>
<td>37%</td>
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</tr>
<tr>
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<td></td>
</tr>
<tr>
<td><strong>school</strong></td>
<td>41%</td>
<td>59%</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td><strong>paid employment</strong></td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td><strong>research related to work</strong></td>
<td>63%</td>
<td>26%</td>
<td>1%</td>
<td>0%</td>
<td>7%</td>
<td>1%</td>
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<td></td>
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<tr>
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</tr>
<tr>
<td><strong>will research degree</strong></td>
<td>59%</td>
<td>9%</td>
<td>24%</td>
<td>7%</td>
<td></td>
<td></td>
<td></td>
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</tr>
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</table>
### Table 3: Comparative Analysis – samples & population

**POPULATION:**
All HDR students enrolled part time in the School of Architecture & Design and the disciplines of social science and social work in the School of Social Science and Planning at RMIT University, October 2001

**P/T as proportion of total HDR population:**
- Arch & Des: 90%
- Soc Sci: 73%

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Focus group &amp; interview participation as proportion of sample</th>
<th>Questionnaire response as proportion of sample</th>
<th>Study population: Arch &amp; Des</th>
<th>Study population: Soc Sci</th>
<th>Total study population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
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<td>36</td>
<td>51</td>
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<td>64</td>
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<td>56</td>
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<tr>
<td>&gt;29</td>
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<td>15</td>
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<tr>
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<td>43</td>
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<td>18</td>
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<td>62</td>
<td>57</td>
<td>60</td>
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<td>41</td>
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<td>38</td>
<td>38</td>
</tr>
<tr>
<td>Arch &amp; Des</td>
<td>59</td>
<td>59</td>
<td>62</td>
<td>N/A</td>
<td>62</td>
</tr>
</tbody>
</table>

### Table 4: Selected Statistics – Australian HDR population

Source: DEST higher education statistics, year 2000 (excluding international)

<table>
<thead>
<tr>
<th></th>
<th>Total EFTSU</th>
<th>Total numbers</th>
<th>Total P/T EFTSU</th>
<th>Total P/T numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total HDR population</td>
<td>24,898</td>
<td>32,924</td>
<td>10,350</td>
<td>16,282 (49%)</td>
</tr>
</tbody>
</table>
### Table 5: Australian HDR Local Population – P/T numbers by field of study and age

**Source: DEST, Higher Education Statistics (unpublished), 2000**

<table>
<thead>
<tr>
<th>Field of study (DEST categories)</th>
<th>29 and Under</th>
<th>30 - 39</th>
<th>40 - 49</th>
<th>50 and above</th>
<th>Total P/T numbers</th>
<th>% of total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Animal Husbandry</td>
<td>125</td>
<td>159</td>
<td>98</td>
<td>43</td>
<td>425</td>
<td>35%</td>
</tr>
<tr>
<td>Architecture, Building</td>
<td>38</td>
<td>112</td>
<td>96</td>
<td>53</td>
<td>299</td>
<td>52%</td>
</tr>
<tr>
<td>Arts, Humanities &amp; Social Sciences</td>
<td>873</td>
<td>1577</td>
<td>1705</td>
<td>1191</td>
<td>5346</td>
<td>48%</td>
</tr>
<tr>
<td>Business, Administration, Economics and Law</td>
<td>259</td>
<td>643</td>
<td>756</td>
<td>308</td>
<td>1966</td>
<td>56%</td>
</tr>
<tr>
<td>Education</td>
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<td>570</td>
<td>1176</td>
<td>733</td>
<td>2618</td>
<td>75%</td>
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<tr>
<td>Engineering, Surveying</td>
<td>363</td>
<td>386</td>
<td>244</td>
<td>100</td>
<td>1093</td>
<td>31%</td>
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<tr>
<td>Health</td>
<td>292</td>
<td>713</td>
<td>679</td>
<td>307</td>
<td>1991</td>
<td>42%</td>
</tr>
<tr>
<td>Science and Veterinary Science</td>
<td>818</td>
<td>894</td>
<td>592</td>
<td>242</td>
<td>2546</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2907</strong></td>
<td><strong>5054</strong></td>
<td><strong>5345</strong></td>
<td><strong>2976</strong></td>
<td><strong>16282</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Table 5b: Social Studies HDR Local P/T Enrolment in Australia – EFTSU and age

**Source: DEST, Higher Education Statistics (unpublished), 2000**

<table>
<thead>
<tr>
<th>Discipline</th>
<th>29 and Under</th>
<th>30 - 39</th>
<th>40 - 49</th>
<th>50 and above</th>
<th>age unknown</th>
<th>Total P/T EFTSU</th>
<th>% of total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Studies</td>
<td>221</td>
<td>381</td>
<td>389</td>
<td>214</td>
<td>146</td>
<td>1351</td>
<td>41%</td>
</tr>
</tbody>
</table>
The survey asked respondents to identify whether they had developed certain capabilities and where they believed that had principally occurred – the work place and/or research experience. The style of data presentation used has been chosen because – although individual values are not clearly displayed, it best demonstrates the broad spread of responses. It is evident that the majority of capabilities are developed through a combination of research and work place experience.
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