



Australian Government

**Department of Industry
Innovation, Science, Research
and Tertiary Education**



The Research Education Experience: Investigating Higher Degree by Research Candidates' Experiences in Australian Universities

7th May 2012

A research report developed by the Council of Australian Postgraduate Associations (CAPA), with support from the Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE)

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Compiled with the assistance of the staff and office bearers of the Council of Australian Postgraduate Associations (CAPA) and its affiliated member organisations.

CAPA is the national representative body for Australia's 320,000+ postgraduate students. Incorporated in 1979, CAPA is a membership based non-profit association. Photography by Carol-Anne Croker.

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The views expressed in this report are those of survey respondents, focus group members and individual interviewees and do not necessarily reflect the views of the Australian Government.

Acknowledgements

Many people have contributed to the making of this report: first and foremost, over 1000 higher degree by research (HDR) candidates who took the trouble to respond to the CAPA research education experience survey. This in turn could not have been achieved without the help of postgraduate office bearers in CAPA's affiliate organisations in most Australian universities. We are grateful to them for their time.

A special thank you goes to the HDR candidates who volunteered to be interviewed as part of the case studies and focus groups, particularly the many students who were ultimately able to give us their time. Without your stories this report would not have been possible.

We are also grateful to the professional and academic staff of many universities who acted as informal consultants and advisors for the CAPA research team. Assistance and expertise with the analysis of data generated by the initial survey tool was provided to CAPA by Ms Anita Dyavanapally, Ms Sandra Wyatt, Dr Samar Zutshi and Ms Liz Rowe. Thank you all for your advice and assistance with the survey data, particularly Liz for her work on the frequency tables and charts in this research report.

Nigel Palmer from the Centre for the Study of Higher Education (CSHE), University of Melbourne freely offered the research team insights and expertise, for which we are very appreciative.

Without the generosity of the National Tertiary Education Union (NTEU) this report could not have been completed. The NTEU have provided CAPA with invaluable support and collegiality, and for this the CAPA Executive Committee is especially grateful.

Finally, CAPA thanks Dr Alison Manion and staff at the Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE) for the long history of consultation with CAPA, and most especially for their support and insights in this most recent collaboration.

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Executive Summary

This report is the product of a project carried out for the Australian Government Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE) by the Council of Australian Postgraduate Associations (CAPA). The primary findings of this report are based on the outcomes of a national survey, 12 focus groups and 8 case studies of higher degree by research (HDR) candidates at 31 of Australia's 39 universities. In total 1,166 students responded to the survey, and 125 were involved in the subsequent focus groups and case studies.

The Australian Government's Research Workforce Strategy (RWS) and earlier reviews, including the Senate Inquiry into Research and Research Training, the Review of the National Innovation System, and the Bradley Review of Australian Higher Education, all identified a number of issues around research training in Australia. While there was a great deal of data gathered by DIISRTE during the development of the RWS, much of it focused on employers and early career academics, with less information collected directly from research students.

A workshop conducted by the CAPA during the development of the RWS on behalf of the then Department of Industry, Innovation, Science and Research (DIISR), highlighted some of the broad themes of concern to research students, including but not limited to: quality of supervision, quality and availability of minimum resources and funding for the production and dissemination of research, collegiality, and academic independence.

For the in-depth interviews in our focus groups and case studies, we sought to highlight the experiences of HDR candidates at regional universities. If a general claim can be made, it is simply that those in smaller departments were more likely to have quite positive experiences of collegiality with their cohort and with academics, and though this happened in both metropolitan and regional universities, it came through more strongly from regional candidates. The only counter to this was that when things went wrong in very small disciplinary groupings, there was often nowhere to turn for support.

This report identifies how institutional, faculty and departmental policies and practices impact on all aspects of the research education experience, or what can be described as early-career academic life. HDR candidates experience tensions between what is encoded in policy statements and how this plays out in practice, which in turn can impact on progress, timely completions and career pathways. Where policy and practice are more closely aligned, we found HDR candidates having a much more positive research education experience, and more positive attitudes towards a research career.

According to our findings, candidates working within their disciplines, being mentored on research grants or as research assistants, or collaborating in applied research projects within universities or industry, are more likely to express satisfaction with their research education experience. Where there is synergy between the HDR candidate's research and their employment during candidature, candidates are more

likely to say they have felt valued and engaged with the process of emerging as an expert in their field.

What emerges strongly from this research is the need expressed by HDR candidates to feel that their research is valued, and that they personally are valued partners in their educational experience. Often this involves the opportunity to work and research alongside colleagues from other disciplines where they can learn more and broaden their own disciplinary knowledge.

Our findings demonstrate how dependent success and positive engagement are on quality of supervision, the provision of adequate funding for research, physical resourcing such as work spaces, technology, equipment, and access to relevant coursework, and opportunities for publication and presentation of research at academic conferences. HDR candidates expressed a desire for academic support to be mentored into autonomous researchers valued by their supervisors and academic colleagues as professionals with strong disciplinary knowledge and expertise.

Those whose primary enrolment status has been part time reported experiences of some frustration at lack of access to the same level of resources as their full-time colleagues, but for many this is outweighed by the benefits of working to a longer time frame and being able to balance family and work commitments more easily. Taxation of the part-time scholarship was widely criticised.

HDR candidates across our sample claimed to be having positive experiences of academic independence. Whereas the 2009 CAPA workshop cohort raised academic independence as an area of concern, this research investigation did not find it to be an issue affecting many candidates.

Of critical interest to policy makers will be the finding that the risk of attrition seems to be most strongly linked to quality and continuity of supervision, and secondarily to collegiality more broadly. It seems that even in the face of many other institutional barriers to the production and dissemination of quality research, such as lack of resources and facilities and funding issues, the majority of HDR candidates are motivated to persevere. But when candidates have negative experiences of supervision, or to a lesser extent, collegiality with their cohort or within the department or faculty, they are more likely to express considerations of withdrawal.

Best Practice Key Findings

Best Practice Supervision

Best practice in supervision entails a supportive and collegial relationship between supervisor/s and candidate.

Supervisors:

- actively mentor HDR candidates in all aspects of becoming a researcher;
- are usually available (with minimal repeated or enduring disruptions due to leave of absence, sabbatical, etc);
- introduce HDRs to research and industry networks;
- encourage and provide advice on the most suitable journals for publication;
- co-author journal articles and/or conference papers;
- provide guidance in applying for external awards, grants etc;
- encourage attendance at departmental seminars and social forums.

Best Practice Provision of Minimum Resources

There needs to be *transparency* and *adherence* to institutional policies. The most frequently cited desirable resources in our survey included:

- a sole-use desk with networked computer;
- postgrad-specific professional development opportunities;
- stationery for research; and
- postgrad-specific information and resources more generally.

Best Practice Research Funding

Best practice in provision of research funding includes:

- annual funding sufficient to cover all costs of production and dissemination of research (fieldwork, conference attendance, etc);
- *transparency* and *adherence* to policies on the amount of funding available to each HDR candidate.

Best Practice Collegial Environments

The environments most likely to foster positive collegiality are inclusive places where HDR candidates' contributions are sought and valued by academic staff.

Collegiality is fostered by providing HDR candidates with:

- office space on campus, preferably embedded in the department with academic staff;
- collaborative working environments; and
- inclusion of HDR candidates in departmental seminars, morning teas and other forums.

Introduction

This qualitative research project was funded by the DIISRTE as part of the implementation of Research Skills for an Innovative Future: A research workforce strategy to cover the decade to 2020 and beyond (RWS).

As a research partner, CAPA has worked as the national peak representative body for postgraduate student advocacy since 1979. CAPA has often worked collaboratively with the Australian government to ensure that the postgraduate student body's views and needs are considered during higher education policy changes and implementation strategies.

CAPA was invited to investigate HDR students' experiences in Australian higher education institutions offering Research Masters level degrees and Doctor of Philosophy (PhD) programs, as identified in the Australian Qualifications Framework Levels 9 and 10.

The research team has been able to gain in-depth qualitative material to add nuance and specificity to the broad issues emerging from extensive reviews of higher education and the rich quantitative research conducted over the past four years. While the findings of this research project do not claim to be definitive and representative of all students' experiences of research education in Australia, they add a significant body of evidence to the many hypotheses and conclusions drawn from extant research into Australia's research training environment.

The genesis for this research project was the previous CAPA report to DIISR on the *Research Education Experience (Palmer, 2009)*, where three key themes emerged from a workshop drawing together 35 postgraduate student participants from around Australia. The key themes included: the research training experience, career pathways and challenges to completing a research degree.

The current research project drew responses from 1,166 self-selecting HDR candidates through an online survey¹, 12 focus groups, and eight individual case studies.

This report uses the HDR candidates' voices to elucidate their candidature experiences, both positive and negative. By looking from candidates' perspectives, we uncover the lived experience of the complex interplay between policy settings and practice enacted inside our universities.

¹ See Appendix B for survey questions and tabulated responses to charts used in the body of this report.

The Research Training Experience

As identified by CAPA previously (Palmer, 2009), HDR candidates note the importance throughout candidature of:

- ✦ the collegiality and availability of supervisors;
- ✦ adequate resources and facilities for their research;
- ✦ adequate financial support for their research, including fieldwork and conference attendance;
- ✦ flexibility to shift between full and part-time candidature as necessitated by external responsibilities and demands;
- ✦ positive experiences of academic collegiality and acceptance as a valued member of the academy;
- ✦ the recognition of scholarly autonomy and academic freedom within their research and publications;
- ✦ opportunities to develop a broad range of academic research and other 'career' skills; and
- ✦ flexibility and scope for the development of career opportunities in teaching, research or with industry.

While there have been some changes in the university sector in addressing some of these issues the same enablers and disablers for successful completion were again central to the interview data gathered during the 2011 research investigation.

What was facilitated in this research project, unlike previous projects and publications, was a focus on HDR candidates' experiences across some key cohorts. The research team analysed the responses across gender, age, discipline and metropolitan/regional universities², to identify particular examples of best practice and facilities conducive to successful HDR student engagement and timely completions. Similarly the research team investigated any clustering of 'disabling' factors leading to frustration, isolation and disengagement at the institutional, disciplinary and/or supervisory level impacting HDR candidates' satisfaction with their research education experience.

² See Appendix A for a complete profile of survey respondents, and focus group and case-study participants.

Methodology

The project used a three stage methodology consisting of an initial online survey, focus group discussions and in-depth case studies (Figure 1).

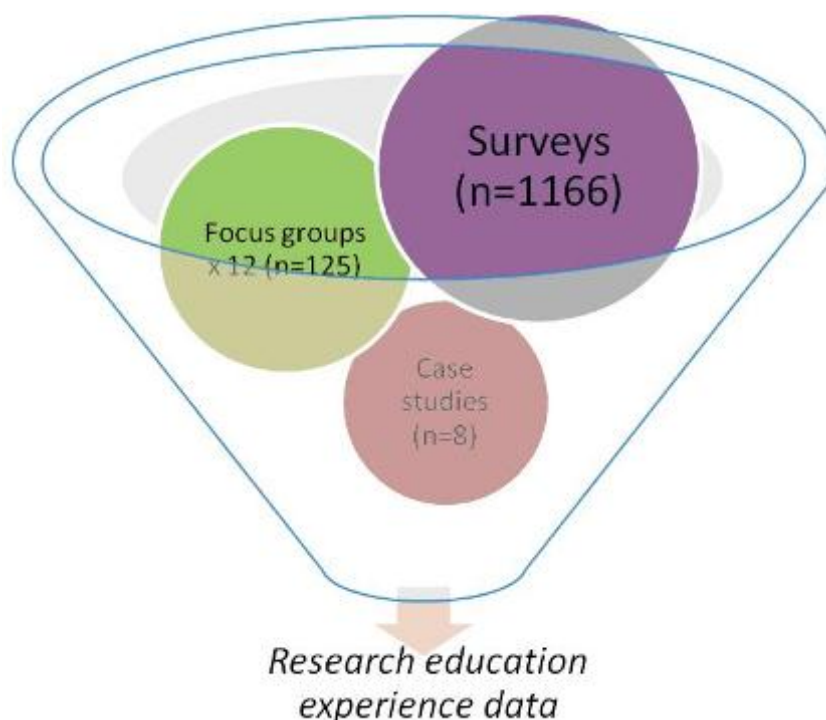


FIGURE 1 ILLUSTRATION OF PROJECT METHODOLOGY

Online Survey of HDR Candidates

There are over 50,000³ HDR candidates studying at PhD (Doctorate) AQF level 10 or Masters (Research) AQF level 9, and for the purposes of this report, CAPA was able to obtain data from 1,166 HDR students who were broadly representative of the general demographic spread across the total HDR population (except for an over-representation of female HDR candidates).

CAPA chose the online survey tool, Opinio, with the survey of 164 questions reflecting all aspects of HDR candidature as previously identified by HDR students as important for successful completion of their higher degree studies (CAPA 2009, CAPA 2010). The Opinio survey tool allowed respondents to volunteer for the subsequent qualitative research stages of the project. CAPA received 1,166 completed surveys, with 267 respondents expressing interest in participating in either the focus group phase or the case-study interviews.

We recognise the self-selection bias within the data, however this report does not purport to be representative of all HDR candidates' experiences in Australia, and nor does it claim to offer statistically significant findings. Rather the report draws on in-

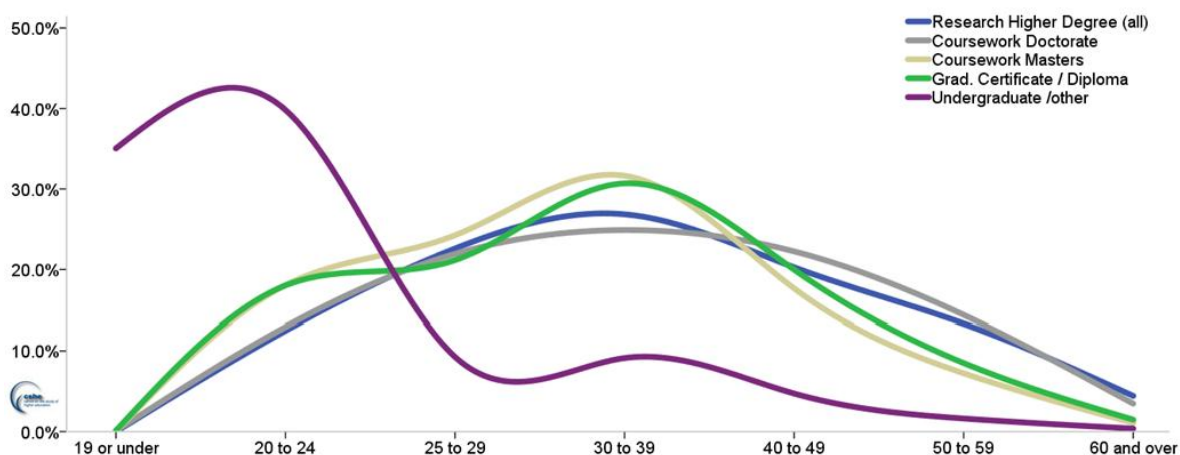
³<http://www.innovation.gov.au/Research/ResearchWorkforceIssues/Documents/DefiningQualityforResearchTraininginAustralia.pdf>

depth qualitative material to illustrate what we argue are best practice examples and areas for improvement in research education.

Focus Groups

Survey data was used to identify and locate willing participants in a series of 12 focus groups, where discussions were held around the key themes emerging from the survey data.

Focus groups were selected to be in the first instance, multi-disciplinary, and then sector-specific, and lastly discipline-specific, whilst also reflecting the Department of Education, Employment and Workplace Relations (DEEWR) HDR candidates' average age demography, as illustrated in Figure 2 below:



Source: Palmer, N. (2011)

FIGURE 2 2009 DOMESTIC STUDENT AGE AS A PROPORTION OF COURSE LEVEL.

After the first analysis of the initial survey data, focus groups were convened in Melbourne, Brisbane, Canberra, regional NSW, regional Victoria, and regional Queensland.⁴

Focus group data informs the body of this report, and the quotes from HDR candidates used throughout are derived from free comments in the survey and from comments made during the focus group interviews. Two of the 12 focus groups were selected for further analysis, the education focus group and the mature-age focus group, as these offered particular insights into two cohorts that earlier research (such as the National Research Student Survey (NRSS) data) has identified as generally less satisfied with the research education experience.

⁴ See Appendix A for focus group participant demographics.

Case Studies

The focus groups were followed up with case-study interviews to enable the research team to investigate the nature of what candidates consider to be best practice research education *throughout candidature* rather than the current tendency to rely most heavily on the existing data around successful and timely *completions*.

Of the survey and focus group participants 267 students volunteered to take part in interviews. These candidates expressed an eagerness to articulate both the best and worst aspects of their student experience in the expectation that their views might assist with positive improvements, where necessary, for themselves and their fellow scholars. The project was designed to investigate not only metropolitan universities, but also rural and regional universities.

Perhaps due to the nature of self selection, the initial participants seemed to present too neat a binary picture of what we know to be diverse experiences of research education. Many young, male Science, Technology, Engineering & Mathematics (STEM) candidates were initially selected with very positive reports of their experiences, and a number of older (50+) female Humanities, Arts and Social Sciences (HASS) candidates were selected with more negative experiences. It was decided that this data was not rich enough for the purposes of this report. A decision was made to seek out four more interviews with candidates that represented greater diversity, and the research team relied on contacts through campus-based CAPA affiliates to find these four students.

Ultimately, eight interviewees were selected as diverse representatives of the range of experiences across disciplines, age, gender, disciplines, geographic locations and university groupings.⁵

Candidates participated in recorded interviews either in person or via Skype, and the case studies were written to highlight areas where there appeared substantial validation of the data from the preceding survey and focus group findings.

⁵ See Appendix A for matrix of the demographics of all eight case-study participants.

Survey and Focus Group Findings

Supervision

For most HDR candidates, it seems the supervisory relationship is the single most important factor in the research education experience. Where an HDR candidate has a primarily positive experience of supervision, s/he is more likely to express an overall positive experience of undertaking a research higher degree. Just what constitutes a positive experience in the supervisory relationship, however, is difficult to define, as individuals on both sides of the relationship have diverse needs and expectations.

Recent global literature supports our assertion that the student-supervisor relationship is central to successful and timely completion, as it is intrinsically tied to a candidate's sense of institutional engagement, which then pervades the entire research education experience.

The majority of HDR candidates in Australia report a general satisfaction with the quality of their supervision. Recent data from the NRSS conducted by the Australian Council for Educational Research (ACER) indicated that 49.8% of HDR students 'strongly agreed' that their supervisor has been 'very supportive' during their studies, with another 28% who also 'agreed'. That is, nearly 80% of HDR candidates in Australia report feeling supported by their supervisors.

While the majority of candidates may be satisfied with supervision, for those who are not, the stakes are high. Secondary supervisors can do a lot to mitigate issues in the primary supervision relationship, but the level of involvement of secondaries seems to be highly variable. In the free comments on our survey instrument, a number of candidates expressed dissatisfaction with their secondary supervisors, suggesting the role of the co-supervisor or secondary supervisor is either not well understood by students, or that many secondary supervisors are not very involved in research candidates' projects. It would seem then that an important process of establishing the supervisory relationship would be to spell out the roles and level of involvement expected.

A number of best practice supervision examples arose in the responses to the survey as well as in our case studies. For example, broad statements that candidates feel supported by their supervisors were inevitably linked to a more positive feeling about their experiences, such as below:

I am fortunate to have supportive and encouraging and professional supervisors. It is because of their support that I have made it this far despite the difficulties encountered. (female, early 30s, STEM PhD, Group of 8 Universities (Go8))

Stability of the supervisory relationship emerged as critical for successful and positive experiences of HDR candidature. Each supervisory change, through staff relocation, supervisory-load change, or relationship breakdown between supervisor

and candidate (particularly as a result of bullying or harassment), was perceived by candidates to be a central concern affecting their scholarly outcomes. The following response illustrates one such negative experience and its heavy impact on the candidate:

Was made to feel that my work was below standard and irrelevant, and left without a supervisor for 5 months, not treated as a valued student. This is a factor that made me feel like quitting. (female, early 20s, HASS masters, Go8)

While many students recognised that HDR candidature was not a time for 'spoon feeding' and knew that they needed to develop their academic independence and scholarly autonomy, they spoke of the transition from the beginning of candidacy to the final year as being heavily reliant on strong mentorship skills of the supervisor/team in facilitating this progression. The most positive candidates were those who had been introduced to disciplinary networks amongst peers and faculty members, within and outside their own institution, and provided with opportunities for publication. One candidate articulated the importance of such mentoring in quite simple terms:

Guidance, support, and academic mentoring is crucial for professional development. When this is good things are great. When this is not good things are bad. (female, early 20s, HASS PhD, Australian Technology Network of Universities (ATN))

A student in one of the focus groups provided a clear example of best practice mentoring:

If it wasn't for my supervisor I wouldn't have had as many publications. My first was only a text book review but it still got into a refereed journal. She is also helping me structure my thesis so that just about every chapter can end up being published as a journal article. She knows which journals are likely to accept my papers and which ones I need to avoid. This helps when you still have your trainer wheels on... For me this is a whole other side of being an academic. I have done tutoring but the publication side of things... well that is the only way she assures me I can get a post-doc, which will allow me to keep my research output and profile competitive. (male, late 20s, STEM PhD, Go8)

We found evidence of plenty of positive examples like those above, but candidates were also very vocal about the impact on their experience when issues arose with

supervision. Perceptions of lack of respect and support have quite obvious negative outcomes for the student's morale, as evinced in this comment:

...I realised my supervisor does not have any will to help me to complete. I have experienced even 'panic attack' because of shock from my supervisor. I am just a humble student, but I have a right to be respected from others as much as I respect them. (female, late 30s, PhD, Innovative Research Universities (IRU))

So-called 'imposter syndrome', that is, the feeling that one does not deserve what one has accomplished, such as a place in a higher degree by research, seems to be fairly common amongst HDR candidates, and may be why many believe that they are simply not 'smart enough' when supervision proves difficult. Those who succeed in changing supervision that results in a better match for them are able to reflect on the situation with a bit more clarity in hindsight, such as this respondent:

I thought it was my problem... I became convinced I was not smart enough... it was only on gaining a new supervisor that I began to realise how low my morale was. (female, late 50s, HASS PhD, ATN)

The stakes can be a lot higher when there is limited expertise in the department, such as when disciplinary knowledge is restricted to an HDR candidate's supervisor. When things go wrong in such environments, there can be nowhere to turn. One student identified her needs to be for:

More academic staff in my field. More academic depth and width in my field. We have only one academic staff for the area. There is nobody qualified but the only one. So we need more academic staff to assess or judge justly both academic staffs' and students' work and their conduct at this university. (female, late 30s, PhD, IRU)

And yet for students in smaller institutions, especially in rural and regional areas, it would be remiss to insist in all cases that they move to larger institutions where their discipline is better supported, and would lead to such negative outcomes as creating a barrier to access for students with limited means, or older students with partners, children, or with other carer responsibilities, etc. It would seem best to target policy at supporting these students to be able to remain embedded in their communities, and perhaps to provide external co-supervision, such as that being investigated through work in the sector on the development of joint PhDs.

Best Practice Supervision

Best practice in HDR supervision entails a supportive and collegial relationship between supervisor/s and candidate.

Supervisors:

- actively mentor HDR candidates in all aspects of becoming a researcher;
- are usually available (with minimal repeated or enduring disruptions due to leave of absence, sabbatical, etc);
- introduce HDRs to research and industry networks;
- encourage and provide advice on the most suitable journals for publication;
- co-author journal articles and/or conference papers;
- provide guidance in applying for external awards, grants etc;
- encourage attendance at departmental seminars and social forums.

Areas for Improvement in Supervision:

Aside from the obvious and more extreme examples of negative supervisory practices, such as bullying or demeaning candidates and their work, the most commonly reported negative issues with supervision occur when supervisors:

- provide very little support or engagement with candidates' projects;
- provide mostly negative critical feedback;
- are slow or fail to provide feedback;
- are often unavailable, especially for extended periods such as sabbaticals, leave of absence, etc;
- do not encourage, nor are involved in candidates' attempts to publish articles;
- do not seek to involve candidates in the research community.

Minimum Resources Policies and Practices

Physical Resources and Facilities

In 2010, CAPA conducted an extensive investigation of minimum resources policies and guidelines at Australia's universities. Ultimately, we found that 33 of 38 universities examined had policies or guidelines in place (Palmer, 2010b). However, the existence of institutional policies does not always reflect departmental practices, some of which far exceed such minimum resources policies, but others which clearly fail to deliver. This report examines the benefits of providing minimum resources and facilities, and the consequences for HDR candidates when minimum standards are not met.

When it comes to provision of physical resources and facilities, those with office space were more likely to report feeling valued as members of the research community, able to work effectively, and that they had good access to academics. Consequently, for many of them, there were more opportunities for collaborations on publications, teaching opportunities, etc.

Candidates who were not provided access to a sole-use desk on campus where they could regularly work and securely leave their research materials not only complained about the difficulties of progressing their research without basic infrastructure support, but also about their difficulties in developing relationships in their department, both with other HDR students and with academic staff.

Lack of dedicated work space can not only inhibit timely progress, in many cases candidates claimed that it contributed to a sense that they are not valued as a researcher, as articulated by this respondent:

*It would be really helpful to have sole-use access to a work space (not a damn 'hot desk') in order to feel like I am valued by the university and that I have a space on campus to call my own. I could also use this space and treat my research and candidature as a regular 'job' (just getting paid pittance of course) by working standard routine hours (eg: 9-5) and personalise the space in order to feel more comfortable (rather than being constantly displaced by using a hot-desk that is not secure and I can't claim as my own).
(female, late 20s, HASS PhD, ATN)*

The key findings emerging from all focus groups, irrespective of discipline, age, gender, university type, enrolment status or stage of candidature, was the perceived lack of transparency in communication between university, faculty, department and HDR candidates as to what resources and support were actually available. Most of the HDR candidates we surveyed were unaware of their university's minimum resourcing policies (Figure 3).

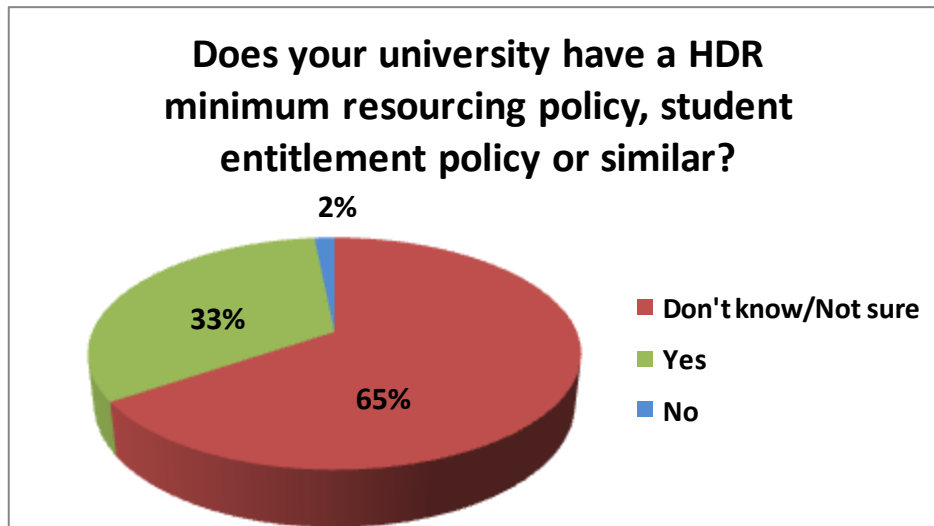


FIGURE 3 PROVISION OF HDR MINIMUM RESOURCING POLICY, STUDENT ENTITLEMENT POLICY, OR SIMILAR.

See [Appendix B, Table 8](#) for more information.

The survey drew candidates' attention to the content of such policies, and in subsequent focus groups, we found that HDR candidates were quite dismissive of words such as 'access to' or 'provision of', as these often did not mean the same thing to candidates as they did to the policy authors.

When 'access to computing facilities' was identified, candidates said that they initially expected 'access to a designated work space with computing facilities', not access to a library terminal or an out-of-hours computer laboratory, shared departmental terminal space, or wifi access for their own laptops in general student study areas, often shared with undergraduate students.

Whereas supervision disruption or difficulties appear to be most strongly related to low morale and considerations of withdrawal, lack of dedicated desk space is easily one of the most commented-on barriers to progressing research. It was around minimum resources policies that candidates were most likely to comment on 'hollow promises':

Differences between 'minimum standards' and what is actually provided is vast. (male, early 30s, PhD, IRU)

There were a number of candidates who had experienced both positive and negative provision of minimum resources within the course of their degree. In the majority of such cases, resource provision had worsened over the course of candidature, such as this respondent:

In the first 2 years of my candidacy I was provided a private office with excellent secure storage. I am now in a shared space (x15 desks) that is NOT designed for the purpose. It is a serious interruption to my progress. (male, late 40s, HASS PhD, IRU)

To illustrate the enormous gap between those who complain of inadequate resources and those who report good resources, see the following candidate's comment:

good provision of resources, our department has a laptop per PhD student. (female, late 20s, STEM PhD, Go8)

Students who commented on less resources at non-research-intensive universities expressed a perception of the lower status of their institutions:

But I do understand we have limited funding and aren't ranked as a quality research university. (male, late 30s, PhD, IRU)

Part-time candidates were more likely to be dissatisfied with provision of minimum resources than full-time candidates (Figure 4), such as this candidate:

Although I am part time a dedicated desk and computer would be of great assistance. As I only have access to a shared area that is almost always busy. (early 30s, HASS PhD, IRU)

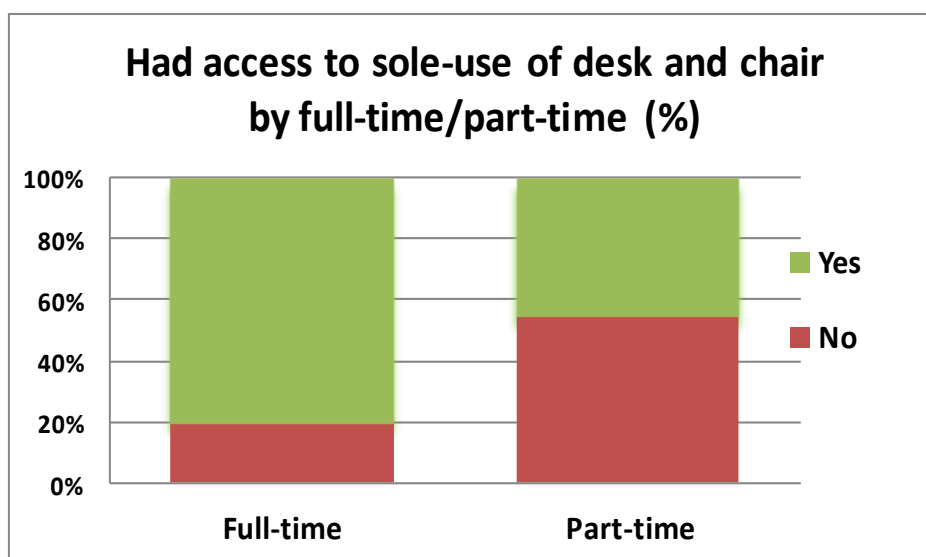


FIGURE 4 ACCESS TO SOLE-USE DESK AND CHAIR: BY FULL TIME/PART TIME STUDENT

See [Appendix B, Table 9](#) for more information.

Some masters by research students also expressed frustration at having less access to resources than their peers enrolled in the PhD, and overall they were less likely to have dedicated desk space than their colleagues enrolled in a PhD (Figure 5):

As a masters research student we do not receive any of the workspace benefits allocated to doctoral students. Many of the 'standard' resources – photocopying allowance etc. are kept 'secret'

& difficult to access although I believe they are available. (female, early 30s, HASS masters, IRU)

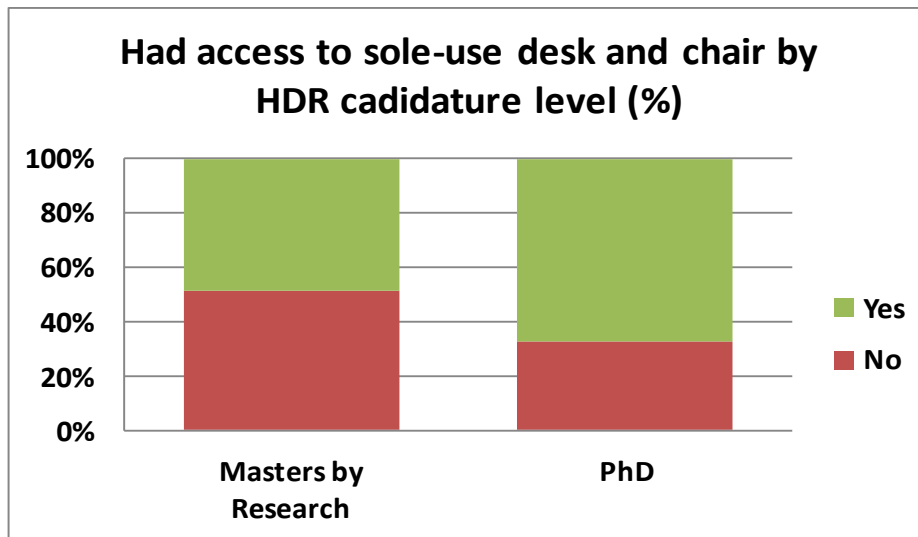


FIGURE 5 ACCESS TO SOLE-USE DESK AND CHAIR: BY HDR CANDIDATE LEVEL.

See [Appendix B, Table 10](#) for more information.

Each time resourcing issues emerged as an area of concern in the multi-disciplinary focus groups, there were widely divergent experiences, with some candidates provided with office space and IT resources, and others ‘hot desking’ without a space to set up their study material, some carrying books and written work around the campus in a travel suitcase or backpack.

Our survey responses highlighted a stark difference in the number of HASS candidates with access to sole-use desk space and chair compared with STEM candidates, as illustrated in Figure 6:

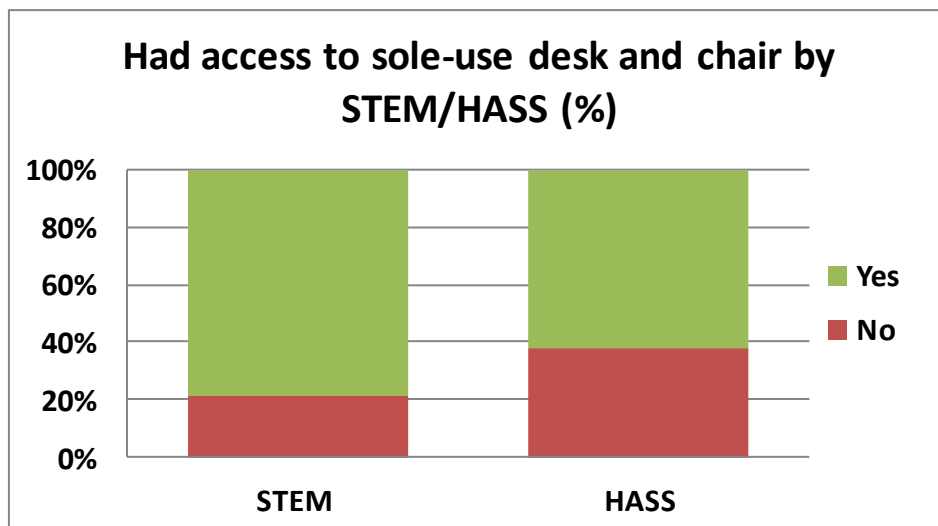


FIGURE 6 ACCESS TO SOLE-USE DESK AND CHAIR: BY STEM/HASS

Note: Science, Technology, Engineering & Mathematics (STEM); Humanities, Arts and Social Sciences (HASS)

See [Appendix B, Table 11](#) for more information.

A key theme that came from those who complained of lack of resources was the mismatch in their expectations before commencement, and the failure of their institution to alert them to their entitlements before (or during) enrolment:

*They should let us know **before** you enrol in a history degree that you won't have a desk to work at. (female, late 20s, HASS PhD, Go8)*

Best Practice Provision of Minimum Resources

In the provision of resources, what was also very clear from respondents was the need for *transparency* and *adherence* to institutional policies. Candidates' sense of being a valued member of the research community was further undermined when resources were not only scarce, but masked with what they saw as 'hollow policies'.

The most frequently cited desirable resources in our survey included:

- a sole-use desk with networked computer;
- postgrad-specific professional development opportunities;
- stationery for research; and
- postgrad-specific information and resources more generally.

Areas for Improvement in Provision of Minimum Resources

The most critical resources that candidates reported affected their progress were:

- lack of a sole-use desk on campus;
- lack of access to free printing and photocopying facilities.

'Hot desking' was universally derided as an inappropriate and insufficient provision of work space. Lack of *postgraduate-specific* academic skills support, professional development and/or career support was also referred to as a concern to many HDR candidates.

Lack of *transparency* and *adherence* to minimum resources policies was frequently cited as indication of poor support for HDR candidates.

Funding for the Production and Dissemination of Research

We found vast differences in the level of research funding provided directly to candidates to conduct fieldwork and attend conferences, as well as to purchase necessary equipment and supplies. Also, a striking proportion of HDR candidates reported a serious lack of transparency in both the amount of funding available and the means to access it.

Some candidates knew exactly what their annual budget for research funding was, and were thus empowered to determine how best to use these funds to meet their candidature needs throughout the time of enrolment. Other candidates knew there was 'money to be accessed somewhere' but often the amount varied over the year, or by discipline. It is of some concern that only half of the respondents to our survey knew for certain that they had access to research funding from their university (Figure 7).

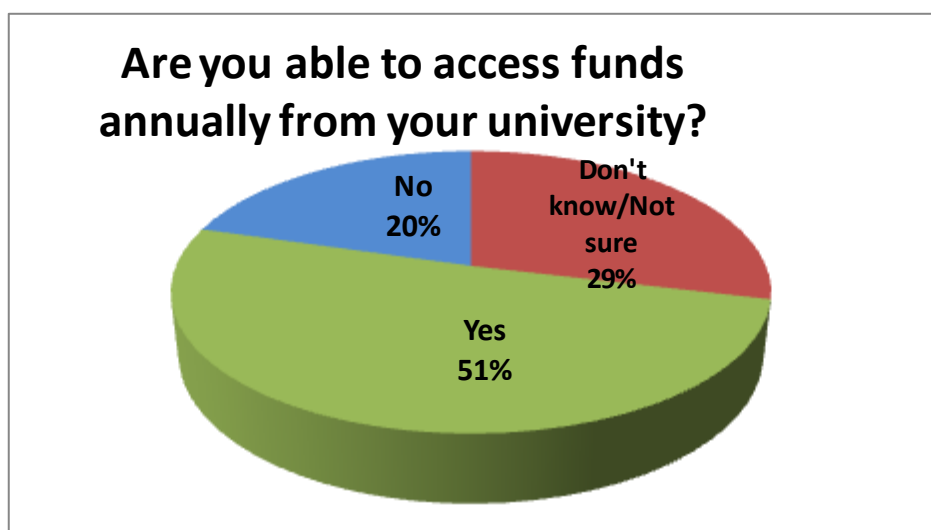


FIGURE 7 ABILITY TO ACCESS FUNDS ANNUALLY FROM THE UNIVERSITY

See [Appendix B, Table 12](#) for more information.

The following two comments demonstrate the frustration experienced by candidates as they attempt to navigate processes lacking transparency and consistency:

*Beg for assistance with purchase of components central to my research; beg for assistance with funding to present at conference.
(female, late 40s, STEM PhD, ATN)*

*The process for using student allocation for conferences is so difficult that it is not worth the hassle; many people don't end up attending any conferences because [ATN uni] makes it so difficult to access the money that is supposedly for conference attendance.
(male, early 20s, PhD by publication, ATN)*

The majority of survey respondents who opted to provide free comments around the funding questions claimed they have not attended conferences when there was no funding from the university, many citing inability to afford to pay. So whereas much evidence (Pearson, et al, 2008) suggests that candidates often spend a significant amount of their personal finances on research expenses, it seems that many are not able to afford to attend conferences if there is no funding.

Funding for conference attendance was commonly reported to be insufficient, and was cited as the area most in need of improvement in a question about resources (Figure 8):

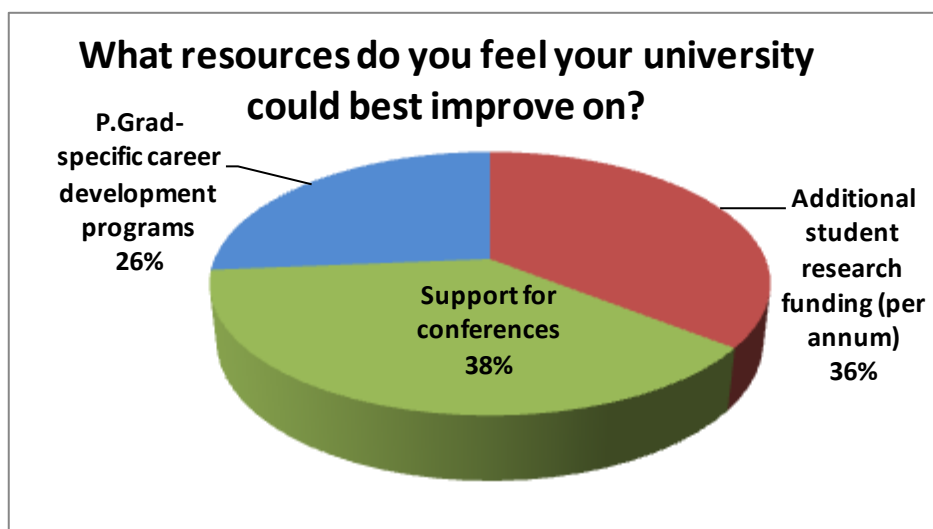


FIGURE 8 IMPROVEMENTS IN UNIVERSITY RESOURCING.

See [Appendix B, Table 13](#) for more information.

There are obvious and serious equity issues if those who can independently afford to attend conferences do so, giving them opportunities to disseminate their research, build networks and therefore be offered more opportunities than those who cannot afford to do so out of personal reserves. For example, a number of HASS candidates in our focus groups and case studies said that they had gained opportunities to publish specifically through having met editors of journals in their field at conferences, or other academics who then recommended them to editors who were looking for contributors to special issues.

Missed opportunities by those unable to self-fund conference attendance not only present an equity issue, but are also a potential hindrance to high-quality candidates who are unable to disseminate their work and develop networks. Consequently, the research community may be missing out on important new contributions to knowledge. We believe this is an area of concern that merits further research to uncover just how pervasive are the consequences of inequitable access to funding.

The range in funding available to HDR students seemed to be vast (Figure 9), though not neatly distributed across the traditional STEM/HASS divide as is perhaps commonly thought.

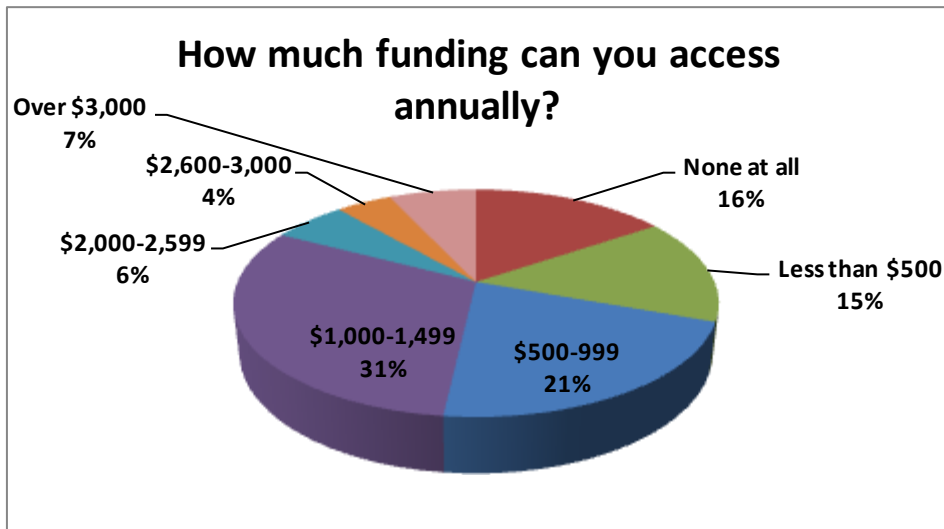


FIGURE 9 AVAILABILITY OF FUNDS ANNUALLY.

See [Appendix B, Table 14](#) for more information.

For example, this STEM candidate claims to have just \$400 per annum:

Also HDR students are encouraged/expected to present at conferences, it comes out of the very low \$400 research funding we receive each year (if this money has not already been spent elsewhere). This amount of money does not even cover one conference. Scholarship money therefore needs to cover this expense, but the scholarship money is also very low. (female, early 30s, STEM PhD, Go8)

A HASS candidate similarly receives very little funding to support her research:

...fund to conference too little, only \$1000 for the whole PhD candidature (female, early 30s, HASS PhD, IRU)

And a candidate who chose not to disclose her discipline wrote that all fieldwork must be self funded:

All fieldwork is self funded, limiting the opportunity for undertaking fieldwork and data collection (female, early 40s, PhD, IRU)

One respondent even claimed to have no choice but to use some of the funding allocated to them as an HDR candidate on printing expenses incurred as a tutor:

The stationery is charged against a one-off \$3000 stipend for postgraduate students and so I have used a lot up on tutorials I have run. It is supposed to support conference attendance but doesn't adequately cover this. (female, late 40s, PhD, Go8)

As mentioned previously, many candidates reported a worsening of resource provision, including levels of funding, since they had commenced their degrees. In one focus group, a HASS candidate spoke of how the provision of funding had decreased annually over the previous four years, and said that allowable expenses had also changed regularly, without any dissemination of these decisions or policy changes to candidates, and applicable immediately even to those who had enrolled earlier.

In her department in a Go8 university the funding available when she enrolled part time in 2006 was \$500 per year (or \$250 for part-time students), with no cap on the amount over the period of candidature, but the funding by 2011 had been reduced to \$1250 per candidate over the period of candidature, which is *now* capped at three years for funding purposes. That is, when she commenced, she was entitled to a total of up to \$2000 over the course of candidature (four years EFT), but now funds were capped at \$1250, which she had recently exhausted. This funding is to be used for conference attendance, research tools (eg digital recorder), books, stationery, subscriptions, etc, though this university also offers a one-off competitive university scholarship for international travel for 'non-essential research' such as international conference attendance or archival work.

Many HDR candidates, often women but a small number of men also, who were studying part-time for a variety of reasons (employment, carer responsibilities, disability, or distance from campus) recognised that by studying from home their household budgets were impacted. Where the internet previously was on a limited plan, it now needed to be unlimited. The cost of ink for printing, printers, and associated workspace provisions were added costs to the home budget. Many candidates on government benefits felt these financial imposts keenly. Distance students often spoke of how they felt:

We just make up the numbers and are cheap to enrol because we pay for everything and take up no space on campus. We even have to pay the postage or drive the library books back. And if you are not working you can't claim it back under study expenses on your tax. (female, early 50s, HASS PhD, IRU)

Many commented on the impact of out-of-pocket expenses, only some of which they expected to be reimbursed. Where costs were reimbursed, there were frequent reports of administrative delays, causing financial hardship in addition to frustration:

She [the admin officer] said that because the conference was in January the Research Committee wouldn't have a chance to meet before the conference to OK me using my own \$800 a year allowance for professional development. [...] I have been waiting over 11 months now, and every time I approach her, it's as if I am the problem... I just want transparency ... about what will and won't

be funded, when ... to apply for funding... Now I have a reputation with this administrator as a trouble maker so I won't get any assistance from her. (female, early 30s, HASS PhD, unaligned)

Best Practice Research Funding

Best practice in provision of research funding includes:

- annual funding sufficient to cover all costs of production and dissemination of research (fieldwork, conference attendance, etc);
- *transparency* and *adherence* to policies on the amount of funding available to each HDR candidate.

Areas for Improvement in Research Funding

Insufficient funding to conduct fieldwork, attend conferences, purchase research resources, etc is an obvious impediment to the production and dissemination of research with serious equity implications.

Lack of *transparency* and *inefficient administration* of research funding further impedes candidates' progress and causes unnecessary stress and negative experiences of their research education.

Collegiality

Collegiality is understood by HDR candidates to occur on two levels: 1) the sense of being valued and included in an academic culture by academic staff, and 2) a sense of community and networking opportunities amongst a postgraduate cohort (or cohorts). HDR candidates report varying levels of collegiality experienced within the two distinct groups.

Positive experiences of collegiality emerged as a clear indicator for motivation to persevere in spite of other difficulties students may have encountered in the course of candidature. Where the candidate felt valued and enjoyed a sense of collegiality amongst his/her fellow academics, be they postgraduate peers or senior academics, they were more likely to express a resilience that enabled them to cope with the pressures of research and the difficulties of insufficient funding or resources.

Regarding their sense of collegiality within the academic staff culture, some key themes emerged around perceived politics, aggressive competition, excessive workload, and valuing of research over teaching, which are encapsulated in the two comments below:

I still like the actual scientific research but have become aware that the politics of the university department (including the poor attitudes towards teaching) outweigh my desire to become a research academic. (female, late 20s, STEM PhD, Go8)

I've developed a less favourable view of academics based on the culture and behaviour of academics observed. If I didn't love teaching so much I would go back to industry consultancy. (female, late 20s, HASS PhD, Go8)

A deeper sense of dissatisfaction as an HDR candidate arose from perceptions of lack of academic worth or relevance to the staff:

We are only the audience. It's all a status game, a facade where the students are virtually interchangeable from year to year and the sooner we complete and move on so they can perform for the new crop, the better. (male, mid 30s, HASS PhD, IRU)

A commonly held perception emerging from the focus group sessions, and with respondents located across disciplines, is that HDR candidates are not so much junior colleagues and future academics, but rather 'just numbers' counting towards their supervisors' research active status, a hedge against retrenchment or course discontinuity.

I am going on to further study and change direction, or do a second masters after this because I can't see a future here for me as a physicist. My supervisor was a great teacher but he spent all his spare time applying for grants and never quite succeeding. Eventually they called him research inactive and he was made redundant. It's happening right across the science faculties. I'm hoping to become a patent attorney. (male, mid 20s, STEM masters, unaligned)

Of course the most extreme example of lack of collegiality is where a student believes they have been bullied. The reported incidence of this in our survey was only 3.5%, but though the impact of bullying may not be broad, it is deep. In cases where bullying was alleged, candidates' motivation and experience of collegiality was especially low:

I have lost motivation due to the bullying. Also, people have spread bad rumours to (departments) where I might be employed. Also, academics are nasty devious people – I wouldn't enjoy working with them. (female, early 40s, STEM PhD, Go8)

These extreme negative examples not only have the potential to have a deep impact on individual candidates, but on the reputation of departments or institutions, which has implications for the sector more broadly. When such stories are reported in the media, they reflect disproportionately poorly on the academy, and so surely policies to respond to complaints must be robust and carefully adhered to through due process.

Those most likely to respond positively to questions about collegiality were the younger STEM HDR candidates, who are therefore less likely to have dependents. Figure 10 shows the age breakdown of our survey respondents by HASS and STEM disciplines, clearly demonstrating the younger age profile of STEM respondents.

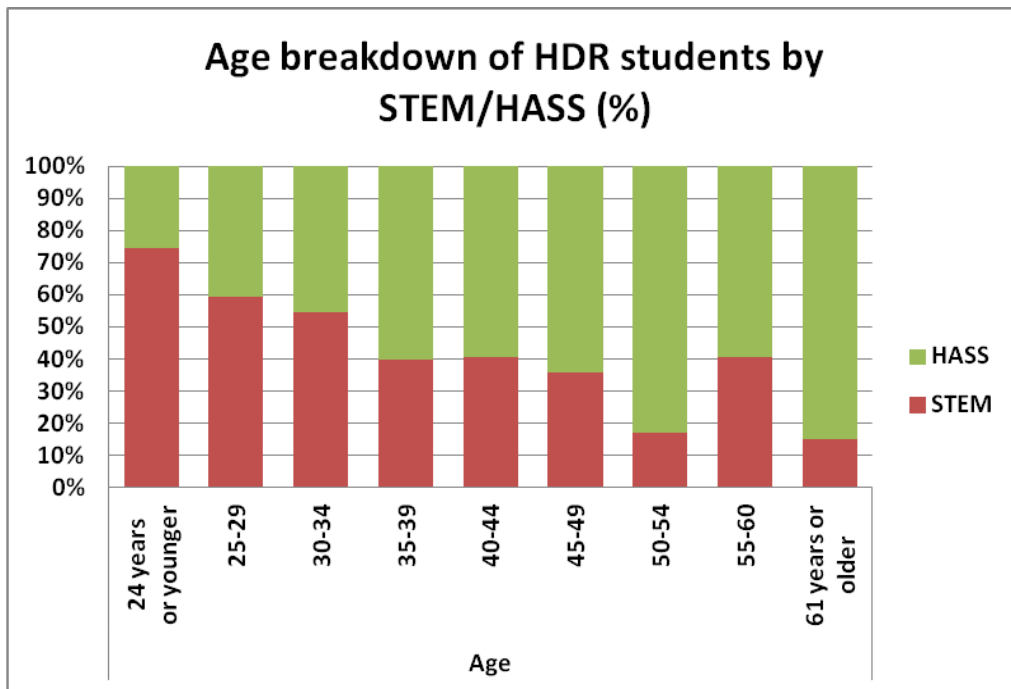


FIGURE 10 AGE BREAKDOWN OF HDR STUDENTS BY STEM/HASS.

Note: Science, Technology, Engineering & Mathematics (STEM); Humanities, Arts and Social Sciences (HASS)

See [Appendix B, Table 15](#) for more information.

HASS candidates were much more likely to report a poor experience of collegiality than their STEM counterparts, but due to the older age profile of these candidates it is difficult to make a disciplinary-based claim as to why this might be (Figure 11).

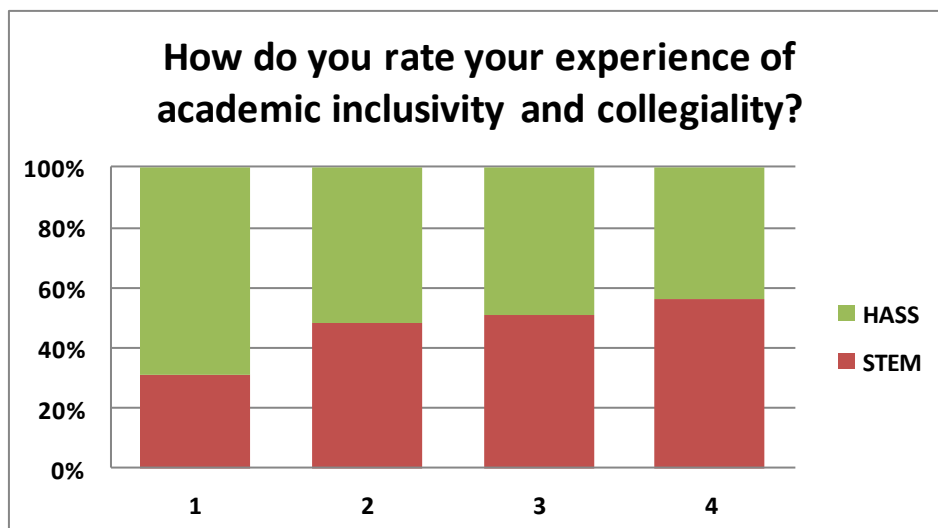


FIGURE 11 ACADEMIC INCLUSIVITY AND COLLEGIALLY BY STEM/HASS.

Notes: Score: 1 (Poor) to 4 (Excellent); Science, Technology, Engineering & Mathematics (STEM); Humanities, Arts and Social Sciences (HASS)

See [Appendix B, Table 16](#) for more information.

The younger STEM respondents typically described high levels of satisfaction and self worth. They spoke of feeling a part of the research culture in their faculties and discipline, with words such as:

My contributions were always invited and then valued as an equal member of the research team. (female, late 20s, STEM PhD, industry-focused Cooperative Research Centres (CRC))

It is so exciting. I can't wait to get here each day... to know that every day there are challenges to be met and that I am working with the best in the country... well I feel privileged to be here. (female, mid 20s, STEM PhD, IRU in a multi-disciplinary research hub)

On visiting CRCs and research hubs where many of the STEM candidates participated in our focus groups, what became apparent was a multi-disciplinary focus for the industry-driven research.

There was a tangible excitement arriving at these workshops and laboratories. One regional research hub proudly showcased the work of an artist in residence, using some sophisticated electronic equipment for multimedia art installations and projections. These environments were described as feeling:

less like a university and more like a democratic collaborative workplace [...] The great thing about studying here is that you sort of feel like you go to work each day, not uni. We are all working on different information and communications technology (ICT) projects with our industry partners but we are all similar ages and feel like we can share information, especially shortcuts, like with getting the best out of Refworks or EBSCO searches. It's great to be told what is a total waste of time and what actually works best for us. Sometimes the traditional sort of supervision, where you see your supervisor occasionally is not the best. Here we are working alongside them. We also don't have to worry about getting a job when we finish as [industry partner] has basically told us we all have jobs with them. (male, mid 20s, STEM PhD, CRC, Regional Universities Network (RUN))

With so many of us in the same place and so many research projects on the go, there is always opportunities to be employed as researchers. This is great because more often than not it is in an area that is slightly different from your PhD but that can lead to

groups of academics and students coming up with ideas for joint research applications. I know that this research experience will help me get a job overseas when I am finished. (male, mid 20s, STEM PhD, CRC, Go8)

It seems then, that collegiality is directly linked to the attitudes of academic staff in a candidate's department and that there is a higher incidence of collegiality amongst STEM candidates. As we saw earlier, collegiality – in the sense of being 'valued as members of the research community' – is also intrinsically linked to provision of resources, especially a workstation within the department.

Best Practice Collegial Environments

Collegiality is experienced differently by everyone, but the environments most likely to foster positive collegiality are inclusive places where HDR candidates' contributions are sought and valued by academic staff.

Collegiality is fostered by providing HDR candidates with:

- office space on campus, preferably embedded in the department with academic staff;
- collaborative working environments; and
- inclusion of HDR candidates in departmental seminars, morning teas and other such forums.

Impediments to Collegiality

In terms of collegiality between HDR candidates and academic staff, the most significant impediments are:

- lack of respect for HDR candidates' research;
- lack of on-campus sole-use desk space;
- separate seminars and social events for academic staff and HDR candidates;
- deeply competitive environments; and
- staff who are usually unavailable or stressed due to excessive workloads.

Focus Group Discussion: Education and Mature-Age Candidates

One key determinant of successful HDR completions is a sense of connection and integration experienced by the HDR candidate within their discipline, faculty or university. According to the recent report by Edwards, Bexley and Richardson (2010):

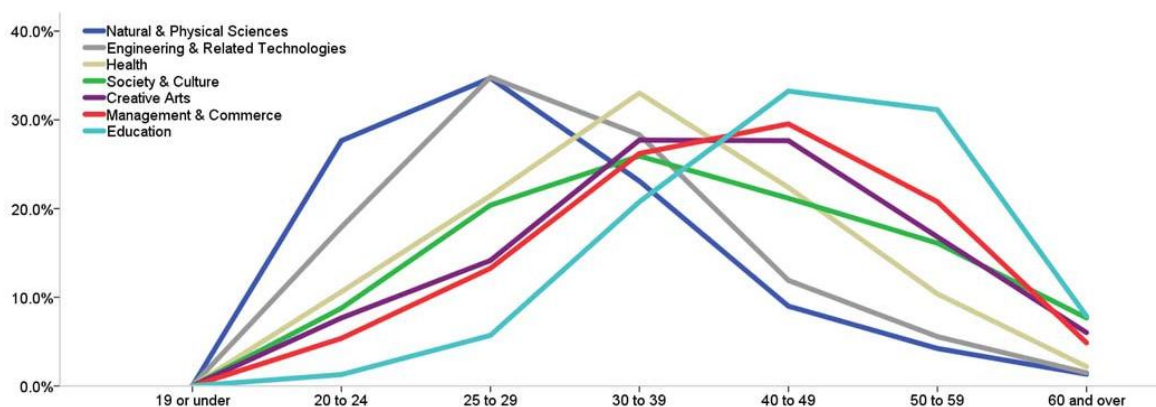
Students from the sciences report high levels of engagement with their fellow students. At the other end of the spectrum, education and creative arts students record quite low scores on this scale. These low scores are important because the NRSS findings also show that the fields in which students are most disengaged from other students and university life in general are also the fields most likely to have students contemplating withdrawal.

In order to explore the NRSS findings around low levels of engagement, we gathered a focus group from education, and a multi-disciplinary mature-age focus group. Whereas the results from most of our focus groups informed the previous sections of this report, the findings of these groups are detailed here to provide more specificity around difficulties faced by these two particular cohorts.

Education Focus Group

CAPA arranged a focus group of education PhD and masters candidates from a metropolitan, research-intensive university to discover what they identified as the factors influencing scholarly engagement. Ten HDR candidates, eight female, two male⁶ had volunteered through the CAPA survey instrument and via CAPA affiliate postgraduate organisations. A large number would be considered in the 'older' age cohort, which reflects the older demographic of this cohort nationally, depicted by the light blue line in Figure 12.

⁶ The high female ratio is consistent with the feminised nature of the education labour market in schools (primary, secondary and even tertiary education faculties).



Source: Palmer, N. (2011)

Figure 12 2009 domestic HDR age as a proportion of broad field of study

All of these respondents were in paid employment, even those enrolled full time in their degrees. Six out of ten (all women) were working within their own university as tutors in various faculties and disciplines, one male was employed as a research assistant within another department at this same university, one woman was working part time in the university administration and the remaining male and female candidates were still working in schools, the male as a principal, the female in her school's library.

When asked for their reasons for enrolling in a higher degree by research, all respondents in the education focus group mentioned that they felt they had something to offer the community of scholars and in return to their students. They felt that their experiences 'at the chalkface' so to speak gave them insights into Australian students which were often perceived to be at odds with the education discourses to which they had been exposed.

It was not uncommon for a respondent to speak of their studies in terms of a mission, a need to give back to empower disadvantaged students within the Australian education system, whether those with learning disabilities, or those from lower socio economic groups where they as teachers had been exposed to high levels of social dysfunction impacting on their students.

All expressed commitment to education and best practice in teaching as a positive intervention in their students' lives, but felt disconnected from policy-making in education at state departmental level and had enrolled in the belief that within the university they could bring their experiences and practice in line with contemporary education theory and contribute their knowledge to the education community. None mentioned promotion or financial motivations.

What was clear however, was that as HDR candidates seeking to find a place where they could utilise their knowledge and experience within the academy, they adored teaching and tutoring undergraduates, but held strong perceptions that they were of 'inferior status' as educators.

It seemed the experience of casual academic employment added to the disengagement articulated by these HDR candidates. Many spoke of the desire for doing both research and teaching in their areas of expertise, but that this seemed only possible for the 'chosen ones', those 'adopted by their supervisors as researchers,' who were encouraged to be co-authors in journal articles, thus developing a research profile.

One spoke of not being able to 'go back now' (male, early 50s, PhD, Go8). He had had to resign from the (State) Education Department after using up all his leave entitlements and now found himself caught. He was grateful to at least have sessional employment, with some minimal access to professional development opportunities and funding, yet still felt highly vulnerable to any institutional or departmental restructures or decrease in student numbers and course offerings.

Apart from the general feeling of having made an irreversible decision to pursue HDR studies at the expense of previously secure employment, the focus group participants were also certain that they were gaining pleasure and challenges from their studies. The consensus was very much that these participants were motivated to study for intrinsic reasons and perceptions of social good and social relevance. The positive responses and attitudes were located when speaking about their individual areas of research, and while acknowledging an esteem attached to being a postgraduate scholar at their university, there was also a strong sense of disconnection from the institution.

Even our building is off-site... which is good... and bad... all at the same time. We can get together and feel at home but we are apart from the other parts of the uni... you know the more prestigious ones. (male, late 20s, PhD, Go8)

Most of the education candidates were of the belief that the findings from their research would result in more inclusive or effective teaching pedagogies and practices in their school or education sectors. All felt that what was lacking in their own postgraduate studies and initial teacher training was institutional recognition of the 'teachers on the ground' as experts in their practice.

We need to have our voices heard and our experiences written up and published. Then we can achieve changes in our schools. If we can tell the legislators what is needed to reduce the violence in the classrooms, the stress on teachers and students, we can make our schools better places to be educated and more families would keep their kids in there [state schools] instead of working themselves into early graves just to pay private school fees. (female, early 50s, PhD, Go8)

With this comment the discussion turned to expectations about their research and the dissemination of their findings. There was a distinct change in tone with the passion and exuberance somewhat muted, as focus group participants felt less certainty and clarity about the reach and value of their research within the university.

Some in the group spoke of having a vague notion at the commencement of their candidature that publication of their thesis would achieve changes within the education sector, but the further into their studies they progressed the more keenly they felt the isolation between the academy and the 'real world'. They spoke of needing their thesis as a starting point in their ongoing research and quest for change, recognising that to be effective agents of change research needed to be ongoing, and that required employment as research academics.

I started to do my PhD thinking that once I got it, I would get a job and be able to teach the next generation of teachers that the textbooks don't have all the answers and that many of the experienced teachers know what works and what doesn't. I wanted to come back to the university as a teacher trainer academic, hoping that I could bring valuable classroom experience back to the faculty. I sort of knew that I would be expected to teach and to write articles for publication, but I expected there would be opportunities for more research, in areas that are important to me, and the community, like better integration and resourcing of students with disabilities, and arguing the case for more aides and specialist staff funded in every school. I had no idea that just to get research funding requires a PhD in 'how to get it'. (female, early 40s, PhD, Go8)

In many of these comments there is a sense that the education candidates returned to university to 'bring reality to the ivory tower', and that when they got there, they felt that the experiences they brought with them were not properly valued. It seems a significant mismatch in expectations, whereby universities might expect HDR candidates to approach their research with a question, but many education HDR candidates arrive with what they perceive to be the answers. How policymakers can address this kind of systemic mismatch between candidates and institutions in this discipline is a more difficult proposition than identifying it, however.

Money was seen as central to all decisions made within the education faculty at this group's university, and it was often inextricably tied up with perceived competition with younger HDR candidates for work.

What I do see around here is that they give the tutoring to the young ones who think they can have a career in the faculty in a few years'

time... I have no husband so I have to pay for my own home and living expenses, plus help out my children. I haven't got years to prove myself as a good teacher of teachers. I am a good teacher and I know high schools well, yet I am not valued as a practitioner. I am just a temporary fill in staff member, until someone younger comes along and forms a 'mutually beneficial relationship' with a younger upwardly mobile research academic... and that's not likely to be me... (female, early 50s, PhD, Go8)

What arises here is another conceptual mismatch in research education between the candidates and the institution – for the candidates, obtaining tutoring work is considered essential to both their financial well being and to their development as educators, which is intrinsic to their motivations to undertake a higher degree by research, but for institutions, research experience is paramount in the development of a research workforce in Australia.

Another focus group participant wanted to do a Master of Education by coursework, then complete his PhD for a career change into university academic employment. His experience in rural and remote schools had given him an interest in Indigenous education. He felt that by taking his long service leave, he could complete his doctorate and finally have time (and income) to complete the necessary fieldwork required by his research.

I guess what surprised me was the lack of funding available for the fieldwork. I am lucky if I can get \$1500 a year, and that doesn't go far when you have to travel to some of the remotest parts of the country, let alone allow me to travel overseas to attend Indigenous education conferences. Even this requires a refereed journal publication before you can get funded to go, and usually they come out after the conference! If I do use the annual funds for a conference, then it is taken away from my core research fieldwork. I am always having to write off to philanthropic organisations for travel grants, but they often disallow funding for PhD research travel. It's expected the universities fund this. So I have to spend more time helping my supervisor write off for internal grants and competitive government grants so I can hopefully be employed as a research assistant next year instead of having to go back to teaching. (male, mid 40s, HASS PhD, Go8)

This respondent's story highlights the complex interrelationships between adequate research funding, capacity to build a research profile, and the dependencies HDR

candidates frequently develop on their supervisors, not only academically, but also financially. It's a point we will return to in more depth in a later case study.

An interesting aspect of the education focus group was that all the doctoral candidates were able to speak from positions of experience drawing heavily on their practitioner/educator expertise, and when speaking as teachers were confident and self-assured. Yet when the discussions turned to PhD candidature, they became less self-assured and unable to locate themselves within the academy. They spoke as outsiders in the system, transient, replaceable and not valued.

What can be clearly mapped by this data is the shift in confidence across the participants' candidature. Those at the start of their studies were open to and grateful for sessional employment opportunities. They felt rewarded for choosing to do their HDRs in the education faculty at a prestigious university. However, as their candidature period progressed, the reality of combining paid work and study settled in, particularly during the pure research intensive phase of mid candidature. Many questioned the cost and impact on their study of paid employment commitments, particularly marking. By the end of candidature there was a common feeling of disillusionment, with most openly questioning their place within the education faculty and beginning to ask questions of the value in pursuing an academic career.

Their research education experience had provided them with in-depth knowledge, and valuable research expertise which now seemed unrelated and unsuited to use back in classroom settings, yet their aspirations of being rewarded with ongoing employment in their university had been *'brought down to earth,'* of *'being in no-man's land,'* *'too skilled to go back and not skilled enough... or published enough to be employed at the uni.'*

The most apparent reason for the greater level of disconnection experienced by this cohort seems to be that most of them didn't enter the degree with the intention of pursuing a research career, but rather to deepen their knowledge of their profession in order to return to or continue with the practice of teaching. Their common perception that teaching is less valued than research in universities was obviously quite destabilising to some of these candidates' core identities as educators and practitioners, which may very well be central to their greater than average experience of disengagement during candidature.

Mature-Age Multi-Disciplinary Focus Group

Most of the participants in this focus group began with online, Open Universities Australia (OUA) or distance education at the various non-Go8 universities offering these courses. Thus geographic location does not correspond with their university affiliation in as much as it is the OUA consortium that has encouraged these students into the system (some with existing qualifications and others with no post-secondary school education).

Barb (female, mid 70s, HASS PhD) studies sociology via distance education. She is quite outspoken about the current trend in Australia to view everything in economic terms:

...[attending uni] is not all about labour market training... what about us who have paid our taxes in the past, don't we deserve the same access to public facilities as the younger ones?... We had to leave school as early as possible to get a job or marry and be home-makers... that is just what was done. It was what was expected. To focus only on young students is just plain age discrimination.

Another respondent puts it another way.

I had no choices back then. I wasn't the type of boy who could sit still in a class room and pay attention to things like algebra or even reading books. I needed to be doing things with my hands so I was encouraged to leave school at 15 to get a job. They didn't have all these tech subjects in schools back then, only if you went to a technical school, but I went to a Catholic secondary school a long bus trip from my farm. We couldn't afford to send me off to the boarding school in [nearby regional centres] and there was no way we could afford a [capital city] school, so you just left and picked up any job in the area that you could find, saving up to buy a block of land and then get married. University was only for doctors and scientists back then, or at least the ones from very rich grazier families. (male, mid 60s, HASS PhD)

Some older women (ex-teachers mainly or public servants) responded to the notion of 'life-long learning' seeing education as a way of keeping mentally fit and well, and productive, even if not in direct paid employment.

One woman, aged in her early 70s, an ex-ballet dancer, is determined to ensure that forgotten Australian women artists have their public recognition through exhibitions and publications (she is writing) around the country. She was responsible for discovering the lost works of one of Australia's first practitioners of impressionism, Clarice Beckett. She restored paintings that were found abandoned in a farmyard outbuilding, curated them for a national tour, and is now writing the biography of this fascinating female artist. For this 70+ creative arts PhD scholar this is a lifetime mission and a highly valuable social contribution to new knowledge.

We develop these preliminary points made in the mature-age focus group about the valuable social contributions of older HDR students in two of the case studies in the next section.

Case Studies

The following case studies provide the final, rich qualitative material that demonstrates the significant positive and negative consequences for HDR candidates of both best- and worst-practice research education and the nuances of what this can mean for individuals. The case studies offer a deeper look at what we have proposed earlier in the report as best practice and areas for improvement in research education across Australian universities.

The eight case studies outline the experiences of a diverse range of HDR candidates, from their early 20s to late 60s, men and women from both HASS and STEM disciplines and across all the university groupings, though with a majority (5 out of 8) at regional universities. They are presented here quite simply in order of age of candidate. The candidates real names have been withheld and fictitious names substituted for privacy reasons.

James, Early 20s, Full-Time ICT Masters, Regional University

James volunteered to be interviewed after completing our survey instrument, expressing concerns that masters students would be underrepresented in our data. However, throughout his interview, his focus was on his potential PhD candidature, an academic goal he could clearly see and articulate since his bachelor degree.

James was scheduled to complete at the end of the academic year 2011, and was aspiring to a PhD placement in a Collaborative Research Network (CRN), with a particular focus on optimisation of systems and technology, as he had earlier experienced an internship looking at and working with an industry group on data security of information systems and databases. He is single and has no children or other carer duties.

I have always lived in [regional city] but didn't quite know what to do with myself when I finished secondary school, so I went down to [another regional city] and did my bachelor of business with electives in business law and management. I'm a bit of a computer nerd so I was always doing assignments and papers on IT legal issues for businesses. This led to my honours year in ICT, which then gave me the confidence to apply back here at [regional university] which had only just established a new industry park so that both TAFE and uni graduates could go on to postgraduate study or find a job. Usually everybody has to go to the city.

After having lived on Austudy for years I just couldn't afford to live in the city so I moved back home. My parents are cool and I have my own car so I can get everywhere I want to without having a problem

with weird bus and train timetables. Everything here is no more than a half hour away and even the city is less than an hour and a half.

James has had an overwhelmingly positive experience of supervision during his masters, and was able to clearly identify the mentoring and advice that has enriched his experience and prepared him for a PhD:

My supervisor is fantastic, he knew about all these new opportunities coming up for postgrads up here. He made sure that I did all the HDR induction courses... you know how to write a literature review, structuring your thesis and everything so that when I come to apply for the PhD, he reckons a lot of my first two years' PhD work will be well on the way.

James doesn't seem particularly worried about finances during his degree as he is living at home, and hopeful of gaining a scholarship:

Because I lived away from home last year I have independent status for student allowances but I am quite hopeful about getting a PhD scholarship. I have two great academic referees and still keep in touch with some of my undergrad lecturers who are still around. Everything is looking good at the moment... although they just announced that masters students could have Austudy – great, [with sarcasm] now that I'm living back with Mum and Dad!

He's quite pleased to have returned to the regional centre where he was raised, which he had left for his undergraduate study due to a perception of lack of opportunities:

It's great to be home as most of my mates are here. Some of them are finishing up their TAFE diplomas and are hoping to come and study out here at [regional university] as well. That would be fun as I could show them all around and be like their uni buddy, just like in primary school.

I was worried that I would have to keep studying for years because it is so hard to get a job up here, but it seems like the government and the uni is serious about developing the region and establishing research centres like this one.

James is also quite positive about his options for supervisors, as well as the CRN's close relationships with industry, which gives him confidence about his career prospects. He expressed no interest in an academic career:

There are also some highly respected and well known academics working in my field who can supervise my PhD so I am looking forward to 2012. I feel sure that this type of PhD with its emphasis on doing research with industry groups means that I probably won't have a problem getting a job in the future. I don't think I want to work here dealing with students. I think I'm better suited working on a computer!

James noted that the hours his lecturers and supervisors seemed to work was ridiculous and he felt that he would get far better pay and conditions 'outside the university,' even at a CRN.

As a younger candidate living at home, some of the structural pressures of undertaking a higher degree by research were clearly less stressful for James, especially around personal finances.

Best Practice Experience:

- government developed regional CRN enabling James to move home to study, strengthening personal support networks
- supportive supervisor provided mentoring
- collegial environment in CRN
- research environment with good connections to industry

Billy, Mid 20s, Full-Time Sociology PhD, Regional University

Billy came into his PhD through the traditional pathway of a bachelors degree with honours in sociology, commencing the PhD in 2007. He has always been enrolled as a student, though he has also worked outside the university at various times to support himself.

When it came time to decide where he would apply to do his PhD, many people advised Billy against going to the same university where he had done his bachelor with honours. However, the academic who supervised his honours was willing to be his secondary supervisor, and there was another very highly-regarded academic he wanted to work with on his project. He can now report with confidence that this was an excellent decision that has paid off with excellent support and many opportunities from his extant network, many of which he believes might not have come up if he had gone on to a new university.

And I think I made the right decision given all the advantages that I've had. Who even knows if I'd still be enrolled or doing the PhD if I was in another institution.

Billy calls himself 'Lucky Billy', because he recognises he has had an ideal candidature. He has had excellent supervision from both his primary and his secondary supervisors, adequate funding to attend an average of two conferences per annum, including two international conferences, access to dedicated office space with a networked desktop computer, a vibrant postgraduate community, and a number of opportunities to work on research projects with his supervisor, which have resulted in an impressive publication record. He was also offered the opportunity to take on an Associate Lecturer Level A position in the year after his scholarship ran out, an experience he found very rewarding and beneficial to his development as an academic, though it did present an obstacle to doing research for the thesis.

In Billy's faculty, HDR candidates have access to 'base level' funding of \$3000 over the course of the degree, as well as central funding of up to another \$3000 available on a competitive basis for international travel. His second international conference, however, was:

only really possible because of my full-time work, because some of the funding from my last year came from my position as a staff member rather than as a candidate so that's kind of tricky, I guess.

When the ERA was being introduced, HDR candidates in Billy's faculty were offered incentives to publish in an A or A* ranked journal – Billy was unaware that postgraduate publications are not counted in the ERA, and was genuinely befuddled at why the university would have offered incentives given that was the case.

Billy worked out he has been to eight domestic conferences around Australia, not all of which he presented at, and two international conferences in his field, where he presented papers. Most of his costs have been covered for these trips:

to be honest, I don't think I've actually paid any of my own money for these, money in terms of flights, registration, accommodation, I've never actually paid out of my own pocket. I've always paid for meals... about half the time I've paid for local transport, taxis, etc. But no, I've been really fortunate, and I've been really strategic about not going to things that I didn't have funding for, just because, you know, I'm conscious about my own expenditures.

Billy credits having an office on campus, where he almost always works rather than at home, with many of the opportunities he has been afforded throughout his degree.

I don't think I would have been offered the full-time contract that I did if I didn't have this kind of presence on campus, and in terms of networking absolutely.

Working in an office on campus has not only provided Billy with more opportunities and a strong sense of collegiality with his cohort of HDR candidates in the school, he also reports that collegiality extends fully to an inclusive culture amongst HDR candidates and academic staff.

...the school and research centre have co-run in-semester research seminars, sometimes fortnightly, sometimes they were weekly, and oftentimes those series included confirmation seminars... so the postgrads were actively included in that seminar series which would feature academics doing research talks, visiting researchers doing talks, and PhD students giving talks often as well. So, yeah, we were invited to them, we were presenting in them. So that was really nice.

In elaborating on his positive experience of collegiality with his supervisors in particular, Billy explained how his thesis spans two areas of research, only one of which his supervisor is expert in. He feels that this gave him an opportunity to not only learn from his supervisor, but also to be valued for his emerging expertise, which has resulted in a very positive experience of academic independence as well:

...we have a relationship where we've written together, we have a co-authored article in a very well-known sociology journal. And he was happy for me to be the first name on that because it was my research that we were using. And that article's developing something that he wrote about a decade earlier and actually taking the idea in a new direction so yeah, I not only have my own scope in my research but I have contributed in some way to his research agenda and that niche area we were writing about.

I'm really lucky, this particular supervisor, really lucky, because he has been extremely supportive, and opened up so many doors for me in terms of some projects we've worked on.

Billy says that his supervisor has been open to learning new things from him as well, without appearing defensive or threatened, which has done a lot to bolster Billy's confidence in his own expertise, as well as contributing to the positive relationship they've developed more broadly.

Because they're working on projects together in addition to Billy's thesis, they tend to meet a few times per month, sometimes for up to three hours. This very regular contact is a kind of self-perpetuating cycle whereby Billy gains opportunities that generate ever more opportunities, certainly a 'best practice model' of supervision.

'Lucky Billy' also has a very good relationship with his secondary supervisor, who makes herself available to read drafts and discuss his project regularly, sometimes *'she just sort of drops in and says hi.'*

Billy has always known he wants an academic career, and his positive experience of research education has only reinforced that desire. He is conscious of pressures to pursue a research career specifically, but claims to like teaching too much to be very interested in seeking a research-only position. However, he's also conscious of the difficulties of balancing a heavy teaching load with maintaining sufficient research output:

I'd like to stay in a teaching active role but then most people say that, you know, it's the research-only kind ones that are the ones you should aim for, but I like teaching.

Billy is approaching the four-year deadline, but has recently applied to change to part-time enrolment with a view to submitting his thesis in April. His scholarship expired at the start of 2011, after which he worked full time as an Associate Lecturer for a year.

In terms of pursuing an academic career, again Billy counts himself 'lucky', because he can be flexible and is willing to accept a position anywhere, including overseas:

So, anywhere basically, Melbourne would be awesome, but you know, I'm not sort of counting out a regional campus of a city university either, so I'm pretty flexible. And I think that I'm kind of in the mindset that working in a regional... like really really regional... would give me time to develop my publication profile but even there they say that those kind of appointments are usually really teaching intensive, you know, I'm not too picky at the moment.

When asked just what he means by his frequent references to being 'lucky Billy', he reflected:

I guess it's just one of those situations where everything seems to line up to your advantage really. But sometimes I think it's not only about getting the right person, it's also about having the right attitude towards that person. There are a lot of things where I can imagine someone else in the same situation as me... it not working.

Not having the right kind of relationship or perspective towards this person.

Sometimes you think of lucking out – there is this kind of external happening to you, but I think that the majority of the time it's being open to those kinds of opportunities coming along, not dwelling on the shit that happens along the way, because that happens too, so I guess the perspective thing being open to those kinds of relationships when they happen to you.

Billy's decision to undertake his PhD at the same institution where he completed his bachelor with honours meant he felt very well connected and supported throughout his degree experience.

Best Practice Experience:

- two supportive supervisors who engaged Billy in research projects outside his thesis, co-authored articles
- sufficient funding to attend multiple conferences throughout candidature (domestic and international)
- sole-use desk space with networked computer within the department for duration of candidature
- collegial environment with HDR cohort and academic staff
- teaching and course coordination experience
- encouragement and support to achieve a number of publications

Nina, Early 30s, Part-Time Physiotherapy PhD, Metropolitan University

Nina completed an undergraduate physiotherapy degree overseas in 2000 and then worked as a physiotherapist in casual employment. She says that:

even back then, I remember saying that I'd be really interested in doing a PhD, but never really followed up on that.

She then went to the UK, where she worked as a physio and travelled for the next four years, during which time she met and married her husband, a scientist. During this period, Nina says:

I loved it, and I had a good job, and it's nice when you're earning that money and that freedom, and that was all great. But I still had in the back of my mind that I wanted to do a PhD, I really enjoyed

the research part of things, the writing, just being a bit more creative. With being a physio, it's a matter of seeing a different patient every half an hour. And after some time I was wanting something else really. All the time, I had in the back of my head that I wanted to do that.

Nina and her husband subsequently moved overseas for two years for his work, and as Nina was not permitted to work, she enrolled in her honours in physiotherapy by distance through a metropolitan university in Australia.

When her first child was one year old, her husband found work in an Australian capital city, and she subsequently applied to do a PhD at a university there. From the beginning, Nina has had a very positive experience in her degree:

I contacted [metropolitan university] and really fell on my feet, because I got an amazing supervisor who is doing exactly the sort of thing that I'm interested in... that I'm interested in clinically... and then pursuing into a research career and I've really fell on my feet with a great team around me so that's how I got into that. It was a bit handed to me on a plate which was good.

Nina commenced her degree without a scholarship, because of the timing of scholarship rounds:

I started in March but you couldn't apply for the scholarship until November. And in the November of the year before I missed out on applying for the scholarship, so what happened is I didn't have a scholarship for the first year, but right towards the end of the year my supervisor realised I could apply for an interim scholarship, so my first nine months I studied without any payment and then we realised we could get this interim scholarship. I got given \$10,000 in back pay... I got a lump sum of \$10,000, but that was on the proviso that I would probably get an APA scholarship.

Nina was awarded an Australian Postgraduate Award (APA) as expected when the interim scholarship was awarded, and it was then that she realised the part-time scholarship is taxed.

With permission, I include here an email from Nina to the president of her postgraduate association seeking assistance with her scholarship complaint:

To: The president,

I have two young children and am undertaking my PhD part-time. Correspondingly, I have a part-time APA and [metropolitan university] scholarship. The scholarships state that if received on a full-time basis, the scholarship is \$30,000 tax free. Conversely, if received on a part-time basis, the scholarship is \$15,000 taxable.

If I was receiving the scholarships full-time, I would therefore not only be \$30,000 ahead, but I would continue receiving family tax benefits to the total of \$10,370 per year. In addition I would receive 76% off my childcare fees as part of the child care benefit scheme.

As a result of needing to declare my scholarship for taxation, my family tax benefit is now \$0. In addition I receive only 36% off my childcare fees, meaning that I pay approximately \$4100 a year more in fees. In total, as a result of declaring my scholarship I am out of pocket about \$14,500 as a result of lost benefits. My scholarship is only about \$15,000 anyway.

Both myself and the government would be much better off if my part-time scholarship was not taxed. If I went back to work full-time the government would lose my tax payment, have to pay me family tax benefits and pay a lot more in placing my children in full time childcare.

I have tried to talk to a range of people about this: the tax office, the scholarship office... what I want to know is who it is who decided that the part-time scholarship should be taxed and argue that this is simply unfair in the case of a studying parent.

I want to do a PhD, but I also want to be a hands-on mum. The feminist in me wants to fight this case further.

[...]

Shortly after commencing, Nina became pregnant with her second child, and has recently returned from maternity leave to resume part-time candidature. She was told she was not eligible for paid maternity leave as stipulated in the APA guidelines,

even though if the back pay is included, she had been on the scholarship for more than the requisite year.

Nina has her children enrolled in childcare on campus, where her eldest attends three days a week and her infant has just commenced one half day per week. There is no student subsidy, though staff and students have priority for places, but she says she is happy to pay for what she believes to be a very high-quality childcare service. There is no option for half day attendance, and parents have to book their children in for two days per week to gain a spot for their children. Nina therefore currently pays for two days per week for her eight-month-old, but only sends her for half a day.

Aside from the financial disincentives of studying part time, Nina really enjoys this mode of enrolment:

I quite like the flexibility of it. It's not 'I have to drive to push to get this thing through in three years'... I have a little bit of flexibility, and I don't want it to drag on for ever and want to be on top of it but there is a sense that I can relax a little bit and enjoy it, and enjoy working on it in the evenings, because I want to like it, it's not something I have to do. And of course spending time with my kids, that's the main one obviously, the main advantage.

Nina is adamant that the taxation of part-time scholarships is poor fiscal policy and places undue pressure on her as a parent to consider studying full time in order to gain the full financial benefit, and she asserts that her role as a mother is more important than the PhD, and that she would rather give it up than place her children in full-time care. In Nina's words:

At the end of the day, my kids come first, and if we can't manage this then I will get some more work. I will stop my PhD if it happens that way financially for us, because you know, I'm going to put my family before the PhD.

One reason for Nina's resilience in the face of financial pressure and the demands of studying while caring for children can be found in the strong research community in which she is immersed. She has nothing but the highest praise for both of her supervisors – as well as some external supervisors who have been brought in for their expertise. She speaks glowingly of her entire research team, and paints a picture of a remarkably collegial setting:

And so I have [my primary supervisor], and I have a great co-supervisor... a couple of co-supervisors... a couple external who my supervisor just thought were experts... my supervisor knew... who have expertise in psychology and other things that I need guidance

in and they are lovely, and everyone is just accessible and everyone is there.

Yeah, it's a really good team that's around me, I really feel that they support me and to the extreme where they get me involved in the research community at school, and are offering me research assistant work here... and I've worked on projects there and got paid a little bit of money for that, and all those things, you know, they really try and keep you there and offer me teaching all the time and it does make you feel good.

Nina says she has heard stories from other HDR students that have not been as positive as hers,

and they tend to be from the foreign girls who are really struggling and I think a lot of it came down to cultural difference, but I think that they definitely didn't have a very positive experience... and I felt it was a little bit difficult because I was hearing terrible stories about their supervisors, and looking for part-time work, and nothing was coming up, and there I am with everything being handed to me on a plate... because I have great supervisors who are in a good little team...

In terms of academic independence, Nina's experience has been similar to Billy's, in that she has introduced her primary supervisor to a disciplinary perspective, in this case psychology, that her supervisor had no real expertise in. Instead of her supervisor perceiving it as a threat, or Nina experiencing the supervisor's lack of expertise in this area as equating to a lack of support for her project, it has worked out to be a very positive dynamic where both Nina and her supervisor feel they are learning together, and that Nina is also contributing something of value to the relationship.

Aside from issues with the taxation of her part-time scholarship, Nina is very happy with the opportunity to study part time, so that she may combine study with raising a young family.

Best Practice Experience:

- a team of supportive supervisors, who involve Nina in research projects, teaching, and publications
- sole-use desk space with networked computer within the department for duration of candidature
- collegial environment with academic staff
- research assistant and teaching experience

Peter, Mid 30s, Full-Time Tourism MPhil, Regional University

Although Peter commenced an undergraduate degree at a regional university straight out of high school, he withdrew after one year, claiming he '*shouldn't have started that.*' He subsequently went to TAFE and obtained an advanced diploma in business marketing in 2000, and entered the workforce immediately. Peter spent a few years living and working in the UK, during which time he did a lot of travelling, and decided he'd like to travel professionally, so returned to Australia '*and started putting steps in place to do that.*'

Peter then worked in tourism in Australia, New Zealand, China, and Southeast Asia for about five years, and the knowledge and experience he gained brought him to the realisation that there was a need for research and policy work to better regulate tourism in Australia and elsewhere. Peter explained the issues that made him want to undertake higher education in his field:

There are a lot of sustainability issues that I saw there at the time and right at the ground level. It's simple mitigating things, like, you know, recycling and treading lightly in certain areas. But then when you take the next level up... a lot of ingrained... institutional issues with the whole industry, there is a short-term focus in the industry... and I guess they have reacted well to world events that have caused the downturn in the industry, you know they're quite able to roll with the punches, but what I never saw was many organisations with long-term planning and that's where I felt there was quite a niche there to move into. But my thoughts after that have also developed on to the policy side of the industry so instead of trying to

fix one person maybe regulate somewhat a bit better the industry as a whole.

When the GFC hit in 2008, tourism suffered, and concerns about job security were the final pressure that sent Peter looking for a suitable course. Having made the decision to return to university, Peter investigated his options, and chose an undergraduate degree at a regional university.

He entered the university where he is now pursuing a PhD (though he is currently still enrolled in an Master of Philosophy (MPhil)) to do a bachelor of business in January 2009. After completing one year, he was accepted into the Master of Business Administration (MBA) program on the basis of his substantial prior professional experience:

And during that period is when I started to open my thoughts up to even higher research within my industry, because... that was one of the key reasons that I went back... was to be able to get higher up within the tourism industry itself than with what I have in my work experience, which was great but when I was applying for jobs... in many different sections of the sector I was being knocked back because I didn't have the qualifications. So that's why I originally went back and then started realising once I'd moved into the undergrad how much more I could gain from doing a PhD.

Peter completed the MBA at the end of 2010, and during the course of that year, he negotiated with supportive lecturers to design two research projects that would create a pathway for him into the MPhil, even though he didn't have an undergraduate degree. Like many other participants in our research investigation, Peter spoke of being 'lucky' to have a supportive academic staff member to help him:

I was lucky enough to have an excellent professor in the Faculty of Business and he helped me design research subjects which were trying help me get into the PhD program.

He elaborated on his good fortune by explaining his belief that being in a small institution enabled him to forge this non-traditional pathway to a higher degree by research:

And this is probably the lucky thing of being a small institution is you know you can get closer to the source... you can actually speak to these people and give them more information than if it was just like a massive institution where it can go through clinically.

Peter was accepted into the MPhil in March 2011 and commenced in May. When he is confirmed in May 2012, he will be able to convert to the PhD. He was not successful in his application for a scholarship, and is supporting himself on his savings at the moment, though he anticipates the need to work part time once he has confirmed his candidature. Peter posed the question during our interview:

I have a question to the government. What are students without a scholarship meant to do to support themselves?

As someone who had not been connected to higher education for many years, Peter was genuinely surprised to learn:

that there is this quite large body of people who are over the age of 35 doing PhDs. And if that doesn't link in with something, either funding wise or industry... because there's obviously a wealth of industry experience that these people... who are jumping out of... to jump into a PhD. So is there some sort of integration that is going to be happening?

He's very conscious of the expertise that people like him bring to a research community, where he has a lot to learn about the practice of research, but feels the university also benefits from people entering with substantial industry experience. In a follow-up email to our interview, Peter added his thoughts specifically about non-traditional pathways and recognition of prior experience:

...I believe it is very important for those without traditional academic backgrounds who wish to study higher degrees to have more ability to access it as an option. My experience found a hierarchical system in place based upon prior studies, honours, etc. I agree this is important as government resources are in place to contribute to universities for HDRs, but I think this makes the window too narrow for those that may not have had the ability for whatever reason earlier in life to come back and study.

In terms of his candidature to date, Peter's experience of research education is mostly positive. He has a supportive and available supervisor, a dedicated office on campus, and access to \$2000 per annum in research funding, which can be supplemented with faculty funding upon application. The policy around this funding recently changed to be more flexible, so that instead of restricting it to particular uses that had to be approved individually,

you have \$2000 to allocate throughout the year and if you choose to use it in one lump sum to go to a conference overseas whatever, that's it, done.

Peter anticipates that this funding should be sufficient to support his fieldwork, which will take place at a location a 760km round trip from where he lives, as well as conference attendance, but at the moment he can't say for sure. He was also unsure of whether he needs to submit a budget for his fieldwork as part of his confirmation process.

Peter's supervisors have both been regularly available to him, and he believes that their contacts in industry will prove valuable as he commences data collection. His secondary supervisor's research is what initially sparked his own project.

The only negative aspect of Peter's experience as an HDR candidate so far is a lack of postgraduate community. With a very small cohort of research students at his university, and none specifically in his discipline, he is conscious of a lack of collegial engagement, and spends most days working in isolation. He got involved as a postgraduate student representative and attempted to build the community, but has found it difficult to gain momentum, especially as the HDR cohort had no '*physical home*':

That's why I go to other universities to find people, [as though speaking to a new person] will you be my friend? And it's not just... it's great to have your overall cohort but to have people that you can talk to about something that interests immediately... 'gel with' as opposed to going to macro subject levels, to be on the same wavelength. That's something that I have felt is not as good as it could be. Small uni.

When asked whether Peter thinks the isolation could affect his motivation in the degree, he responded in the affirmative, and commented on his concerns about HDR candidates' mental health:

I do think that mental health is something that should be taken into consideration quite a bit more instead of just talked about on a surface level. There does seem to be something there that needs to be followed up on because being the rep I've gone and met a lot of different people and I have seen people that are in their third year and noticed they're totally strung out. And you know there's just, there's no support.

Fortunately for Peter, although he feels the absence of a strong cohort of HDR candidates, he believes that '*the accessibility to academics... is second to none,*'

elaborating that he thinks it's due to being a small university, where '*there is an ingrained open-door policy.*'

Peter came from a non-traditional pathway with a great deal of industry experience and a clear idea of what he wanted to gain from a research degree and take back to his industry. His choice of a small, flexible university has provided him with opportunities he doesn't believe he would have had at a larger institution, which he thinks would have been less accommodating of his background and needs.

Best Practice Experience:

- supportive academic staff who helped Peter design a pathway into the PhD from a non-traditional background
- supportive supervisors with good links to industry
- sufficient funding for fieldwork and conference attendance

Areas for Improvement:

- difficulty building collegial community with other HDR candidates due to lack of disciplinary overlap in small department

Nancy, Early 40s, Full-Time Geography PhD, Research Intensive University

Nancy did her undergraduate degree at a prestigious international university, and migrated to Australia 14 years ago. She has a masters in critical theory from a research intensive university and a masters in gastronomy from a different research intensive university. During a year working as a research assistant at another university, Nancy decided she would pursue a PhD, but opted not to apply to the university where she was working:

I started to realise the problems around... basically if I didn't enrol in my PhD there they wouldn't renew my contract. And I was having some issues with how the project was being managed, and I realised that put me in a really tricky position to have my boss be my supervisor... and to be both economically and academically dependent on one person.

Nancy decided to do her PhD at a research intensive university (different to the first two where she did her masters degrees), and from the beginning, she encountered obstacles. When she commenced, she admits, '*it probably wasn't very good timing... that was my fault.*' She had just become the leader of a local food organisation – an unpaid, part-time role – which quickly dominated her time and attention.

However, she had found a supervisor who was developing an interest in a related field which she had originally proposed to research. Immediately, her supervisor

expected her to come on board and help with writing an ARC proposal with another colleague,

neither of them had any track record in [related field] so they wanted my expertise, because I worked on a small research project in 2006.

...the project was quite a lot of work... you know putting together an ARC grant, particularly when you are a first-year PhD student who has no experience writing ARC grants.

Not only was it a lot of work that was keeping her from her thesis, the situation deteriorated rapidly:

*...the principal investigator wasn't doing anything... who was my supervisor... she wasn't sort of contributing in any way, so the whole thing was starting to fall apart... and what ended up happening was I put in for my hours and they refused to pay me for my time. Well they paid me for half, which is ****.*

Given the demands on her time by the local food organisation she was leading, Nancy says, *'there was enough volunteerism going on in my life'* and she thought it was better to get out of the situation with this supervisor early so *'it won't be so bad.'* And so about eight months into the degree, when tensions made it very difficult for Nancy to continue working with her supervisor, she changed supervisors.

Although she had come from a HASS background and was doing a HASS PhD, a recent restructure of the departments of two faculties at her university had placed her into a predominantly STEM faculty. Her new supervisor was recently arrived from overseas, and very enthusiastic about her project, even though his research area was very far removed from Nancy's.

The new supervisor proved to be very supportive and an excellent mentor, and helped Nancy make a number of contacts in her discipline, attend conferences she might not have known about, and generally challenge her in ways she really valued. She changed her topic when she took on the new supervisor, but felt positive about the changes.

As things improved with her change of supervision, Nancy's personal life was presenting a number of difficult challenges. She was still committed to her voluntary position with the food organisation, which demanded much of her time, but she was also forced to move three times as landlords issued her and her housemates with Notices to Vacate so that they could raise the rent. In the five years since Nancy commenced, her rent has risen from \$585 per month to \$900 per month, placing intense pressure on her finances and leading her to work part time in addition to receiving the scholarship in order to survive.

Given her position in a faculty with little to offer her in a disciplinary sense, Nancy always struggled to find a community of postgraduates, though she has made one lasting friend and colleague with whom she has collaborated on a paper and exchanged ideas for these years.

The disciplinary gap she experiences in her faculty has also affected her eligibility for grants and scholarships, as most offered through the faculty are only available to STEM candidates. She has therefore self-funded all of her conference travel bar one international summer school, for which she received \$1000 bursary available to HDR candidates *'doing research into sheep studies or other, and I was other.'*

The funding problem became critical when Nancy realised there was no support for the fieldwork in her project, which had already passed confirmation. In the STEM faculty in which she was based, it was explained to her that her supervisor should fund her fieldwork from one of his grants. However, her project had no relationship to any of his work, and he did not have surplus funds to make available to her for this purpose. Nancy realised that her project was about to fall victim to the restructure of the two faculties:

they just haven't thought through the alignment of scholarships and the disciplinary realities of their students.

In April 2010, Nancy's supervisor moved back overseas, according to her, because of his negative experience of transition in the new faculty. He attempted to place her with another supervisor she had never met, but at this stage, Nancy applied for leave, and has not contacted the new supervisor, saying:

And look it's my own fault I should just meet with her but because I have nothing to give to her, I feel too ashamed to go and meet with her and talk to her, I don't feel entitled to anything from her.

When asked whether she thinks she would have coped with the second change of topic to address lack of funding for her fieldwork if her supervision had not been disrupted for a second time, Nancy was firm:

Yes. I would have had more of a sense of accountability. Definitely.

When asked whether she intends to complete the PhD, Nancy was unsure:

Look, I don't know, to be honest, I don't know how I'm going to create the structures around me to get this thing done. I'm terrified of dealing with the administration at this stage because I'm kind of so far outside the box in terms of what is meant to have happened, so I'm a little bit scared. What am I going to say to them?

I'm kind of starting over, in a sense, I've done a lot of work, I've done a lot of writing, a lot of thinking, but in a sense I feel like I'm starting from scratch. And then when you hear that... that's not what they want to hear. But the problem is that in a sense this has kind of professionally stalled me because I'm in limbo by being a PhD student... but I'm not a PhD student.

With a bachelor degree and two masters, Nancy would appear to be a candidate with every likelihood of success. However, a number of complicated institutional and personal issues impeded her progress to the extent that she may not complete her PhD.

Best Practice Experience:

- one supportive supervisor who provided strong mentoring and networking opportunities

Areas for Improvement:

- conflict with supervisor over excessive work demands and alleged non-payment for work completed
- multiple changes of supervisors
- multiple changes of project due to change of supervisor and then due to lack of funding for approved fieldwork
- lack of funding for fieldwork
- insufficient funding for conference attendance
- insufficient funding from scholarship to live on, leading to constantly increasing work demands
- lack of collegial environment with HDR cohort or academic staff due to very small disciplinary cluster

Gina, Late 40s, Part-Time Health Sciences PhD, Regional University

Gina left school at 15 years of age *'to become a registered nurse, a Div One, then over the years we eventually had to become enrolled nurses (Div Twos) to be a NUM (Nursing Unit Manager).'*

After living and working in a capital city to gain some years' experience with trauma and triage, Gina took long service leave and travelled overseas, working as a nurse:

...in the Horn of Africa for several non-governmental organisations, then in South East Asia on the way home from a two year stint working as a nurse in the United Kingdom (London, Manchester,

Birmingham), in all the poor and overcrowded public hospitals, as many women my age did back then.

While in the UK, Gina met and married an Australian, and together they moved back with their two children to rural Australia to work as dairy farmers. The farm income wasn't sufficient, so Gina returned to work as a nurse doing night shifts at the local hospital after full working days on the farm. A combination of poor health and financial pressures led to the end of her marriage, after which,

I went back doing more agency work, working in hospitals, nursing homes, even some childcare centres. I did anything to pay our way and if it wasn't for Mum looking after the kids I could not have even considered night-shifts and that's where the work always is. The regulars never want it so the agency staff fill the gaps. Having been in a hospital I know just how much more the hospitals are cutting full-time positions and employing greater numbers of less qualified agency staff.

It worked for me though because I was eventually offered a position at [this hospital] and it has a uni campus right next door. So it seemed natural that I could go back to study some more, as now bachelor degrees for nursing was becoming the standard entry level qualification.

Gina completed her bachelor of clinical sciences part time while working at the hospital next door with the support of her mother to help care for her children.

I had managed to find a cheap house to buy, not here in town just in the hinterland but there are school buses and sporting clubs and everything my kids need. It's a good place to live when they are small and the local shops are like a rural town, everybody knows everybody and the kids are always welcome after school at another mum's place if I have to do extra hours or the shopping.

After being offered a NUM position here I decided that I wanted to do more study so applied for and was accepted into my master of clinical leadership (advanced) which I had to do part time to keep working. So here I am a full-time mum, full-time NUM and part-time student at the ripe old age of 42.... I was and still am crazy, but I love everything about it.

I would go insane being just a stay at home mum. I became really interested in the technological changes in nursing practice and how we now do so much more hands-on care which the doctors used to be the only ones allowed to do...

After a while they offered me some sessional tutoring in the bachelors course. I adore it... and I felt safe enough to go part time at the hospital. That's the best solution for me, part-time hands-on applied work with the patients, and the other part with the young ones keen to learn everything in a hurry.

Gina describes the common balancing act undertaken by HDR scholars working in both an academic setting and applied industry locations.

When I was offered a full-time lecturing position in my last year of my masters I said yes, not realising that I would be travelling all over the place to supervise students in practicum placements rather than just doing the lectures on campus. The driving gets me down but I very quickly learned from other women lecturers that if I wanted a tenured position I had to do the more involved work with the added administrative duties. My head of faculty always implied that when I completed my masters I would be in the right place to become a senior lecturer and finally I would be financially self-sufficient with a stable career... and this was worth all the crap...

... and this is crap. When you are in the hospitals they treat you like an outsider until you prove yourself and they get to know you. Luckily at my hospital I have been around for years so I am like an old piece of furniture but at the other hospitals I always have to prove that I am a 'real nurse' not just an academic.

Then you get back to the university and are very much second-class citizens in the academy. The feeling is that nurses, and teachers for that matter, don't really belong there. We are taking up space and should be out there... somewhere... but not here where the serious research is done. I mean we don't even do that much serious, scientific research on this campus. The research deans constantly expect us to publish research in journals but it is a very

difficult process balancing work hours, study commitments and readings with them having to put together research proposals and ethics clearance just to get evidence-based research for journal articles.

I am lucky that the pressure eased once I accepted the offer into my PhD last year... suddenly I am a real academic... you know a serious researcher.

After articulating the lack of authority and agency she feels as both a nurse and as an emerging academic, Gina explained the pressure she was under to do a PhD in order to continue on the career track of a senior lecturer:

This wasn't quite as I expected as I had to apply for my own position as a senior lecturer, and was told that I had no hope if I wasn't at least enrolled in my PhD, as other applicants all had PhDs. So I had no choice but to enrol or not have my own job. It is that competitive, yet I don't know where all these nurses with doctorates are coming from, maybe overseas. It hasn't been an option here for that long, that I know of.

Gina is echoing a commonly articulated feeling amongst our focus groups that there is a lot of competition for existing jobs, which is causing the current increase in credentialism. Gina expressed frustration at her sense that degrees matter more than professional practice:

I want my research read and widely available but don't judge me on that alone. I am a good instructor, have great interpersonal skills otherwise I would never had developed good patient-nurse relationships but these things can't be seen in a CV.

Somewhere things have gone crazy. I love teaching my student nurses. I am now very interested in studying rural shortages for midwives and the impact of nurse-practitioners in small regional health services where they have trouble getting GPs to relocate from the city... but the uni seems more interested in my journal articles than my study or teaching. By the time I see all my students, prepare and update the lecture materials, attend industry PDs, and the stupid faculty meetings just about every day of the week, how do they expect me to study as well?

Gina's experience is a common one amongst candidates aged 35 and up, where she feels that her previous professional experience was not valued in the academy. It also highlights the juggling act of a single parent trying to work and study, in Gina's case successfully with the support of her mother. Gina's story also offers insight into the diverse motivations that lead people to undertake a research degree, including the pressures of credentialism in their field.

Best Practice Experience:

- positive experience of teaching

Areas for Improvement:

- doesn't feel respected and valued by academic staff
- pressure to enrol in PhD to keep job she already had as senior lecturer
- pressure to publish detracting from research and teaching time

Dennis, Early 60s, Full-Time Social Sciences PhD, Regional University

Dennis left school during his late secondary years to take up a trade as a builder, then later went on to work for his local council on the work teams. He married and lived in the same regional city where he studies.

He was conscripted into the Australian army as a young man, leaving his wife and small children at home in order to serve in the Korean War and subsequently as a peace keeper for a number of years stationed throughout the Pacific Islands. After completing his tours he returned home able to *'pay off the mortgage and give my kids the start they needed after they finished school.'* Dennis elaborated on gender norms for his generation:

That was a man's job in those days to provide for his wife and family and I was happy to do it. My wife kept the house and ran the kids around while I went to work.

After becoming grandparents for the third time, his wife suffered a stroke and he became her carer for over eight years until she also developed dementia.

It happened slowly at first and we were doing fine, then it just sped up until I couldn't leave her alone for a minute. She would leave the oven on or the burners, and forgot how to work the shower, so she would get burned unless I was watching her.

It became a bit much for me when I had a heart attack, and the doctors told me she would have to go into a home... [pause]... She doesn't even know who I am when I visit but I go in every day –

rain, hail or shine – and try to take her some flowers from our garden... she used to love gardening...

I was going completely nuts stomping around that empty house, but I'm not going to sell it... the kids want me to... it's our home. I was watching the television and I saw this ad for Open Universities and I thought that might be a good idea. I've always been interested in Australian history so I signed up for one unit, bought a computer and went to the local library to learn how to use it and look where I am now.

Dennis went on to do several units in everything from military and Asian histories, to sociology and finally psychology. He spoke passionately about his burgeoning knowledge:

You cannot comprehend or get close to understanding why we keep making the same mistakes over and over again until you understand why man is like he is... eventually they said it would be better to enrol in a bachelor degree in social science at this university...

Dennis completed his bachelor degree, but felt he had more to learn:

By then I was hooked. I loved the ideas and the interactions with the lecturers who always had time to help out and talk things through. Suddenly I saw that there was something useful I could do one day, and that was to use my new knowledge to help people like my wife, who had lost the power to act. They needed people in the community to be their advocates so I began doing lots of voluntary work for patient advocacy groups, and saw that there was a lot of medical research into finding the cause of dementia and degenerative brain diseases but there was also room for research into the impact this disease has on the carers and families left in its wake. I decided when I graduated I would continue studying until I was enrolled firstly in a master of social sciences degree well into my fifties...

Dennis has had variable experiences of collegiality as a mature-age student, from lack of engagement with other (younger) students to positive interactions with staff members:

I was always treated by the younger students as an 'odddity'... they would look at me to wonder why this old bloke was hanging around the campus... as if I should be out playing bowls or something more suitable for my age...

The lecturers never treated me this way. They took me seriously as a student.

Dennis lives in a suburb near to his university campus and is a full-time PhD candidate. He doesn't hold a scholarship, but rather lives on pension and annuity. No tutoring opportunities have ever been offered, and Dennis has received no additional grants other than annual professional development money, which he has used annually for skills upgrading mostly through the Australian Consortium for Social and Political Research Incorporated (ACSPRI) even though he needs to travel by train to his capital city to do the courses. He has done courses on quantitative and qualitative research methods, as well as on the associated software packages, Nvivo and SPSSX.

He has availed himself of all these courses through his university as they would otherwise cost \$1500 each, and he is grateful that his university pays for his attendance as part of his research training development. He also does all the in-house courses run by his university. He had access to a small fieldwork allowance of \$2000 which he used in his second year to gather interviews for his thesis on aged-care provision.

His volunteer work led to more and greater involvement in community-based organisations and various committees:

I was initially the bunny they put forward as treasurer but then I sort of became the organisation spokesperson. I began speaking at Rotary, Lions and other public meetings about how senior citizens could be valuable to the community, and how without the retirees doing the heavy lifting in the social services and support organisations, entire communities would grind to a halt. The paid staff are under such stress and are so overworked it has now turned into a bit of a mission for me... not to get a full-time paid job... so much as be in a position to be able to speak with and lobby those in power for better targeted funding of support services for the aged.

It is a fact that we are living longer and developing more and more age-related medical illnesses which is putting a strain on the health system and on families. My research is looking at what can be done in policy areas, state and federal, to support the carers and ensure

those who do not have families around them have advocates from within their community and are not left alone, forgotten or neglected. I am hoping that when I have completed my doctorate I will be in a position to write maybe some articles for the newspapers and seniors magazines, but also to be a better public spokesman. When my wife passes I want to be busier than ever before.

Dennis' experience echoes that of many in the mature-age focus group – that he has valuable social contributions to make, even if they won't be in the academy:

It is less about being in the workforce and paying taxes into my late sixties, I do that now. It's about giving older people a sense that there are no limits to what we can achieve. It may take us a bit longer to get everything to sink in... the memory is not so good anymore... but I get there and I have even conquered the computers and the typing bit. I am a worthwhile contributor to society even though I am not in the paid workforce.

That is the important message I want everybody to hear... from the young academics and students, to the politicians, the government decision-makers and those at the coalface of aged care. We are the people with the knowledge and experience. We know what is needed and I just want to get this message out somehow... who knows, they might even let me loose on the students in some classes. I wake up never knowing what challenge each day will bring. Isn't that worth the government's investment in me as a student?

When the term 'scholarly retirement' was mentioned as a reference to a phrase the researcher had heard mentioned by senior academics and policy officials, Dennis snorted... *'It's not retirement. It's activism, pure and simple.'*

Dennis' story illustrates the importance of supporting older HDR candidates, who come to their degrees for very different reasons than their early 20s colleagues, and have important social contributions to make during candidature and upon completion.

Best Practice Experience:

- positive collegiality and sense of feeling valued by academic staff
- access to professional development coursework
- sufficient funding for fieldwork

Areas for Improvement:

- lack of collegiality with mostly-younger HDR cohort
- lack of scholarship
- sense that older candidates are not valued by government

Mary, Mid 60s, Part-Time Creative Writing PhD, Metropolitan University

Mary left school aged 15 (as was common at the time) and did an apprenticeship. She ran her own business, then married and had two sons. When she and her first husband divorced she ran the business from a converted room in her home so that she could look after her toddler sons while working and earning a living to support them and pay off her mortgage.

When her sons had grown she met and married again. She and her second husband spent a number of years being 'grey nomads' around Australia, then began travelling extensively overseas. On one of these trips she met an older American woman married to a retired university academic. It was during long discussions about books and the arts that she felt she needed to 'plug a gap' in her own education.

She enrolled in a TAFE creative writing course, completing her certificate and diploma in creative writing as she wished to use her life experiences to publish novels and memoirs throughout her retirement years. She did so well academically that she was admitted to a master of arts in writing at a research intensive university.

While a masters candidate, Mary managed to complete and have published commercially her first novel. It was published by a small independent publishing house and she won a small emerging writers award, which thrilled her as she had thought emerging writers were usually very young. What followed was several invitations to speak at author events and festivals throughout her home state, thus assisting the small publishing house to sell out her (small) print run of her novel.

Mary's dean and head of department successfully nominated her for membership to a society for high achievers. Yet at the pinnacle of her academic achievements, she was not sure which way to go. In another serendipitous meeting, this time with a

younger woman, at a retirement dinner for the ex-head of her initial TAFE courses, they spoke about the possibility of doing a PhD in creative writing in off-campus mode at another university in the same state.

Knowing that one of her admired academic supervisors from the research intensive university had transferred to this university, she applied and was accepted into the PhD program with an APA.

Her extended family did not take her full-time candidature seriously, despite the fact that she was working on writing her second novel while researching her exegetical methodology and theory. On the days she did spend time in her study (a converted third bedroom), she was often said to be *'at school.'* Or if she went to the university for supervision, she was *'just going to school.'* Mary felt that this attitude permeated her experience of higher education, with many people dismissive of her studies due to her age or through a lack of understanding about what is involved in full-time PhD candidature.

At home, her role was still to do all domestic chores, including cooking and cleaning, care of elderly relatives, visits to ill relatives in nursing homes, often using her hairdressing expertise to save her relatives money and to keep her skills up. She also emotionally supported two close friends suffering through terminal illnesses, another friend giving birth to a critically ill baby, and additionally, Mary became a grandmother twice. Her role as a grandmother necessitated twice yearly trips interstate to give the 'other grandmother' a break.

Throughout this period her second husband's health was slowly getting worse and her own health suffered due to the stress of so many competing demands on her time. She would rise very early each morning to go to her office to do her PhD studies before dawn. During the interview she expressed doubts about her situation, and typically for this respondent was self-deprecating.

Isn't this very freedom that is given to PhD students part of the self-development journey? ... Is this balancing act what everyone faces when they get a job? ... Is my mind in the right place when I am making my PhD choices... and the bottom line, should the government be paying me if I'm not coping with the workload and task at hand. In the 'real' world, if you can't do your job you get fired, no matter what the pay. Why should I as a PhD candidate be any different? How can I ask for more money when others who do not even have a scholarship at our level are able to complete? There is a finite sum for government funding and if I got a working wage (as lovely as that sounds) would this mean less scholarships for others?

The 'working wage' of which Mary speaks arose from discussions in an earlier focus group in which participants argued that the stipend should be at least the equivalent

of the Henderson Poverty line and indexed annually... not actually what would typically be termed a 'living wage'. This was a common response from older HASS candidates who worried that they are 'taking places and resources away from younger or more deserving candidates,' yet this respondent would love to finish her PhD, and is very interested in part-time tutoring as she says she loves teaching her craft.

What she does ask for however, is some clarity within the PhD program, about resourcing and expectations. She has published academic journal articles and presented annually at either an international or domestic conference as is expected of PhD candidates in her faculty. Yet the only research funding she can access is \$800 per annum.

I do feel there is a need for the government funding students (scholarship or not) so that they can apply to attend conferences, especially at the international level.

Mary can just about see the end of the line, however, like many creative arts respondents, she worries about the future of her discipline.

Is there going to be a lack of opportunities for practice-led research PhDs [in the academy]?

This is a common refrain from these students, many of whom express feelings of being 'second calibre scholars' in the eyes of their faculty, even if their books get published and win awards. *'They are happy to put them in the display cases ready for Open Day,'* but *'we still just seem to be on a conveyor belt,'* with successful research grants being the entry level for academic careers.

As occurred throughout the interview, whenever Mary came across a topic that clearly identified systemic issues, she was quick to take blame and ownership of the problem. It was as if she thought she 'should have been smart enough' to work all this out without guidance or direction, rather than the lack of solid guidance and direction from what she describes as a *'fantastically positive supervisory relationship, without which she would have given up during the hard times.'*

Mary has struggled with her family's gendered expectations of her domestically while pursuing her degrees at this later stage in her life, and has also grappled with feelings of uncertainty about her position amongst younger HDR candidates. Additionally, she is concerned about the future of her discipline in the academy, and what opportunities her PhD might afford her.

Best Practice Experience:

- supportive supervisor who has helped her remain motivated through difficulties

Areas for Improvement:

- doesn't feel respected and valued within the academy
- uncertainty about career pathway
- insufficient funding

Conclusion

Throughout our investigations, HDR candidates exhibited a strong desire to be regarded as fully-fledged members of the academic community, and a strong commitment to succeed in their degrees. Our preliminary findings from the survey instrument were substantiated in focus group discussions, and the case studies offered an opportunity to delve more deeply into individual experiences of the diverse enablers and disablers of best practice research education.

The most obvious hindrances to a positive research education experience were disruptions to or difficulties with supervision, lack of positive engagement with a community of researchers, inadequate funding (whether through a scholarship or ancillary funding such as for fieldwork and conference attendance), and lack of access to minimum resources such as desk or lab space.

The most positive HDR candidates were supported by reliable, engaged and critical supervisors who mentored their students by helping them get their work published in suitable journals, encouraging them to attend conferences and present their work, and where possible, involving them in other research projects and teaching appointments in the department. These candidates had access to levels of funding that matched the fieldwork needs of their projects, and afforded them the opportunity to present at a range of conferences (domestic and international) during their candidature. Candidates who reported the most positive experiences of collegiality and feeling valued as members of the research community were those who were provided with dedicated desk space in the department and access to other minimum resources such as research equipment, printing and stationery.

Many candidates we interviewed at regional universities expressed high levels of satisfaction with their experience of being immersed in small, supportive research communities. However, where departments were very small, there can be greater difficulties in forming a real cohort of postgrads in one's discipline, and when a problem arises with supervision, the repercussions can be greater due to lack of alternative supervisors or other academics in the discipline.

Our research highlights some key differences in expectations and perceptions of research education for all stakeholders: candidates, supervisors, departments, universities, employer groups, and government. HDR candidates were very clear on what they considered to constitute best practice training in research, offering an alternative perspective to the focus on the skill set considered by employer groups or generalised notions of research training itself.

Although not explored in detail here, it is clear that resourcing must be seen to include finances for HDR candidates to pay their way whilst studying, either through adequate levels of financial support provided by scholarships, stipends and rewards, or through access to secure positions within the academy or a relevant industry during candidature.

Appendix A: Demographics of Participants

Survey Demographics

Table 1: HDR candidates by candidature level

Candidature Level	Frequency	%
Masters by Research	121	11.2
PhD (by artefact and exegesis)	29	2.7
PhD (by publication)	114	10.5
PhD (by thesis)	821	75.7
Total	1085	100.0

Table 2: HDR candidates by residency status

Residency Status	Frequency	%
Domestic student	827	76.0
International student	261	24.0
Total	1166	100.0

Table 3: HDR candidates by gender

Gender	Frequency	%
Female	664	65.2
Male	341	33.5
Transgender, intersex or gender queer	4	0.4
Prefer not to disclose	9	0.9
Total	1018	100.0

Table 4: HDR candidates by age

Age	Frequency	%
24 years or younger	111	10.9
25-29	256	25.2
30-34	179	17.6
35-39	113	11.1
40-44	92	9.0
45-49	99	9.7
50-54	74	7.3
55-60	43	4.2
61 years or older	50	4.9
Total	1017	100.0

Table 5: HDR candidates by campus status

Campus status	Frequency	%
On campus	761	74.8
Off campus	197	19.4
Distance Education	32	3.1
Online	11	1.1
Other	17	1.7
Total	1018	100.0

Table 6: STEM/HASS HDR candidates

Discipline Grouping	Frequency	%
STEM	373	47.9
HASS	405	52.1
Total	778	100.0

Note: Science, Technology, Engineering & Mathematics (STEM); Humanities, Arts and Social Sciences (HASS)

Table 7: HDR candidates by enrolment type

Enrolment type	Frequency	%
Full-time	765	77.2
Part-time	226	22.8
Total	991	100.0

Focus Group Demographics

- 8 international HDR candidates from metropolitan universities
- 24 multi-disciplinary HASS candidates from satellite campuses to two metropolitan universities
- 16 creative arts candidates from multiple universities
- 8 creative industries candidates from two metropolitan universities (one CRC at an ATN and one IRU)
- 5 health sciences candidates from a regional university
- 6 health sciences candidates from a regional university
- 8 education candidates from a metropolitan Go8 university
- 12 social science candidates at a regional university
- 8 social science candidates at a regional university
- 14 science candidates at a metropolitan university
- 6 ICT candidates at a regional university
- 6 engineering candidates at a regional university

Case Study Demographics

Name	Gender	Age	Discipline	PT/FT	Degree	University profile
James	Male	Early 20s	ICT	FT	Masters	Regional
Billy	Male	Mid 20s	Sociology	FT	PhD	Regional
Nina	Female	Early 30s	Physiotherapy	PT	PhD	Metro
Peter	Male	Mid 30s	Tourism	FT	MPhil	Regional
Nancy	Female	Early 40s	Geography	FT (on leave)	PhD	Research intensive
Gina	Female	Late 40s	Health Sciences	PT	PhD	Regional
Dennis	Male	Early 60s	Social Sciences	FT	PhD	Regional
Mary	Female	Mid 60s	Creative Writing	PT	PhD	Metro (satellite campus)

Appendix B: Survey Questions and Tabulated Responses

Table 8: Does your university have a HDR minimum resourcing policy, student entitlement policy, or similar?

Minimum resourcing policy	Frequency	%
Don't know/ Not sure	627	65.5
No	15	1.6
Yes	315	32.9
Total	957	100.0

Table 9: Had access to sole-use desk and chair, by full or part time status?

Access to sole-use desk	Full time or Part time		Total
	Full time	Part time	
No	151 19.7%	123 54.4%	274 27.6%
Yes	614 80.3%	103 45.6%	717 72.4%
Total	765 100.0%	226 100.0%	991 100.0%

Table 10: Had access to sole-use desk and chair, by candidature level?

Access to sole-use desk	HDR Candidate Level				Total
	Masters by Research	PhD (by artefact and exegesis)	PhD (by publication)	PhD (by Thesis)	
No	62 51.2%	14 48.3%	27 23.7%	265 32.3%	368 33.9%
Yes	59 48.8%	15 51.7%	87 76.3%	556 67.7%	717 66.1%
Total	121 100.0%	29 100.0%	114 100.0%	821 100.0%	1085 100.0%

Table 11: Had access to sole-use desk and chair, by STEM or HASS classification?

Access to sole-use desk	STEM or HASS		Total
	STEM	HASS	
No	79 21.2%	153 37.8%	232 29.8%
Yes	294 78.8%	252 62.2%	546 70.2%
Total	373 100.0%	405 100.0%	778 100.0%

Table 12: Are you able to access funds annually from your university?

Access to funding	Frequency	%
No	145	20.5
Yes	360	50.8
I don't know	204	28.8
Total	709	100.0

Table 13: What resources do you feel your university could best improve on?

Access to funding	Frequency	%
Additional student research funding (pa)	314	35.6%
Support for conferences	335	38.0%
P.Grad-specific career development programs	232	26.3%
Total	881	100.0%

Table 14: How much funding can you access annually?

Minimum funding	Frequency	%
<\$500	84	15.0
\$500 - \$999	119	21.3
\$1,000 - \$1,499	173	30.9
\$2,000 - \$2,599	33	5.9
\$2,600 - \$3,000	25	4.5
>\$3,000	39	7.0
None at all	87	15.5
Total	560	100.0

Table 15: Age breakdown of HDR students, by STEM/HASS classification

Age breakdown	STEM or HASS		Total
	STEM	HASS	
≤ 24	61 74.4%	21 25.6%	82 100.0%
25 – 29	119 59.5%	81 40.5%	200 100.0%
30 – 34	75 54.3%	63 45.7%	138 100.0%
35 – 39	35 39.8%	53 60.2%	88 100.0%
40 - 44	28 40.6%	41 59.4%	69 100.0%
45 – 49	25 35.7%	45 64.3%	70 100.0%
50 – 54	9 17.0%	44 83.0%	53 100.0%
55 – 60	15 40.5%	22 59.5%	37 100.0%
≥ 61	6 15.0%	34 85.0%	40 100.0%
Total	373 48.0%	404 52.0%	777 100.0%

Table 16: How do you rate your experience of academic inclusivity and collegiality, by STEM/HASS classification?

Experience rating	STEM or HASS		Total
	STEM	HASS	
Poor	23 31.1%	51 68.9%	74 100.0%
2	77 48.1%	83 51.9%	160 100.0%
3	126 50.8%	122 49.2%	248 100.0%
Excellent	47 56.0%	37 44.0%	84 100.0%
Total	273 48.2%	293 51.8%	566 100.0%

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