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THE DOCTORAL EXPERIENCE: A BIT OF A CURATE'S EGG

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Abstract

Established models of doctoral education in Australia are generally based on an apprenticeship model, where doctoral students learn from their advisors. However, these are slowly being reconsidered in light of low completion rates.

This study investigated doctoral students' perceptions of their candidature by way of focus group interviews. The participants represented 17.9% of the doctoral students enrolled at a university. Three research questions constituted the interview schedule protocol:

- What are some of the positives of your experience since you enrolled in the doctoral program?
- What are some of the negatives of your experience since you enrolled in the doctoral program?
- What are some of your recommendations for the future?

Content analysis was employed to analyse interview transcripts and generate themes arising from each research question. The frequency with which such themes were cited were categorised by their incidence across the 18 schools represented in the study and across the whole sample of students to assess their prevalence.

Key themes most often generated related to:

- Generic skill courses;
- Personal office space;
- Supervision;
- Social and academic/research culture; and
- Communications.

Results are discussed in relation to the future of doctoral education in Australia in an increasingly globalised competitive education sector.

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Introduction

The number of students who complete higher degrees by research is a key indicator of the research capacity of a country and a pointer to its future economic sustainability. In Australia HDR students perform almost 57 per cent of higher education research (as measured by person years of effort) (Commonwealth of Australia, 2011). Despite a 41 per cent increase in the number of students completing Higher Degrees by Research (HDR) in Australia from 1998 to 2008, HDR completion rates have plateaued since 2006 and are now declining (Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE), 2011). Universities are also very cognisant of the rates of attrition among HDR students, ranging from 10-20% to an exceptionally high 85% (reviewed by Bourke, Holbrook, Lovat & Farley, 2004). Clearly universities and governments alike view these figures with concern.

Australian universities receive a fixed amount of funding for the completion of HDR students through the Research Training Scheme (RTS). Funds are received when the student has completed, and the amount allocated is fixed even if the student completes after the allotted 3.5 years. Students taking 7 years to complete, for example, require greater resources which will not be compensated for by the RTS contribution. Timely completion is therefore essential. Consequently, practices which encourage or allow timely completion in each faculty are of great interest.

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The reasons behind slow or non-completing HDR candidates are diverse and often cause significant distress among HDR students. Recent Australian qualitative research revealed that writing and supervision practices are common sites of tension (Cotterall, 2013), though these are not the only causes of concern for HDRs. Challenges range from the pressures associated with living on a reduced income and balancing part-time work with research activities, to the demanding tasks connected to the process of constructing a scholarly identity and meeting the milestones of a thesis (Pearson et al.2011; Cotterall, 2013). Self-sabotaging behaviours, including over-committing, procrastination and perfectionism, have also been thought to play a role (Kearns, Gardiner & Marshall, 2008). Lack of congruence between HDR and academic expectations, (McAlpine & Amundsen, 2009) and HDR expectations and program (Hoskins & Goldberg, 2005), can increase the risk of non-completion (Gardner 2009a, 2009b). McAlpine et al. (2012) state that when HDRs' expectations and experiences are marginalised this amounts to a culture of neglect within the institutional unit. Academic support and good relationships are widely recognised as sources of HDR satisfaction and positive doctoral outcomes. Nonetheless, many cases have been reported where expectations of social connection and supervisor responsiveness are not met (Hoskins & Goldberg 2005; McAlpine et al. 2012; Pearson, 2012). Whether such issues are the sole causes of the depression that is rife among HDR students in the UK and US (Gewin, 2012) is not certain. Nor is it known whether similar trends are found in Australia, although it is likely that HDR students here face similar challenges. The social component of the doctoral journey, in the form of mentoring of HDR students by their supervising academic(s) even if not explicitly sought, is often an implicit expectation which if not satisfied can lead to claims that 'paralyzing pressure . . . enormous stress and . . . loneliness . . . [are] the rule rather than the exception of doctoral student life' (Hadjioannou, Shelton, Fu & Dhanarattigannon, 2007, p. 161).

Context in terms of academic discipline is another factor that has been found to influence completion rates. Significant differences in HDR completion arise between academic disciplines, with students in scientific areas more likely to successfully finish their PhD than those in arts and humanities disciplines in Australia, (Martin, Maclachlan & Karmel, 2001; Rodwell and Neumann, 2007), in the UK (Wright and Cochrane, 2000), the US (Bowen & Rudenstine, 1992), and in Canada (Seagram, Gould & Pyke, 1998). The Canadian study highlighted that the only reliable predictor of successful thesis submission was whether a student was researching a science-based or an arts and humanities-based subject. Variables such as gender, age or nationality were not found to have any effect on the likelihood of submitting successfully. The reasons for this finding is likely to be associated to some degree with the research environment of a scientific doctorate, being one that is usually located in a laboratory shared with other researchers, and thus including particular social interactions.

Further complicating doctoral education are the changing characteristics of the student body. Current HDR students are different from previous years (Pearson et al. 2011) since a growing group of them are international students who study outside their country of origin substantially changing the nature of the student body (DIISRTE, 2011). The number and diversity of these students both in Australian and overseas universities present new challenges for universities and university teachers. These include the development of a more internationally applicable curriculum and skill-sets to help students meet the needs of a global employment market, where increasingly doctoral education is considered essential for producing the research capacity and higher order skills needed in a knowledge-based, post-industrial economy. The House of Representatives report in Australia (Standing Committee on Industry, Science and Innovation, 2008), highlighted the topic of 'Generic skills development and the Commercialisation Training Scheme' with the statement that 'Submissions to the inquiry suggested that postgraduate research students may require generic skills training so that they are equipped to participate in the workforce after their studies are complete' (p.45).

Universities are also now being ranked and compared against global competitors, not just against more local, national institutions. Governments cite the number of their national universities that are among the top 100 or 200 world class universities of the Shanghai Jiang Tong University ranking, or of the London Times Educational supplement ranking (Salmi, 2009), as they anticipate investment into new industries developed from research findings. This means governments speculate that a world-class research university will transfer knowledge to local organizations and particularly to industries. In this

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competitive research and research training environment, institutional and government policy is increasingly focusing on the management of doctoral education, its efficiency, its quality assurance and the employability of graduates, leading to increasing regulation and restructuring globally (Grant & Pearson 2007; Quality Assurance Agency 2008; Schreiterer 2008). This global evolution in higher education demands common standards while the marketization of higher education and global competition places added pressures on universities to ensure that they offer their HDRs an educational experience that will ensure their completion and attract other potential future candidates (Tenant, McMullen & Kaczynski, 2010). In the face of all these contingencies, the doctoral program needs to and is changing (The Group of Eight, 2013).

Aim of study

This study was commissioned to investigate HDR students' perceptions of their university experiences in order to inform policy and practice, to improve the doctoral program of one university, to meet the needs of the students both domestic and international, and help improve HDR completion rates. The research utilised a qualitative approach using focus group interviews in order to augment and complement quantitative survey data previously gathered from HDR students, in order to obtain richer, descriptive and experiential data.

Three aspects of HDRs candidature experience were investigated: the positive experiences, the negative experiences and possible improvements for the future. These were pursued via the following questions:

1. What are some of the positives of your experience since you enrolled in the doctoral program?
2. What are some of the negatives of your experience since you enrolled in the doctoral program?
3. What are some of your recommendations for the future?

Methods

Students were invited through each school's research/ administrative officer to take part in a voluntary hour-long focus interview to discuss their candidature experiences. They were offered a small incentive to participate (a book token). All invitations to students were sent via email. Ethics clearance was obtained and an informed consent form was completed by students before attending the focus interview.

Qualitative descriptions of doctoral students' experiences, both positive and negative, were obtained over a period of two months in the latter half of the academic year. Interviews followed the interview schedule outlined above, using the three questions in the same order each time. Interview participants were grouped by school and by campus. Interview transcripts were analysed by the chief investigator and a research assistant (a doctoral student); the chief investigator conducted all interviews for consistency.

Saturation of findings was reached early since the same ideas or themes appeared repeatedly. However, the focus interviews continued until all volunteer participants had been interviewed.

Analysis

The method of analysis used was content analysis to identify themes/topics. "Content analysis is a form of classifying content" (Burns, 2000, p.432). Themes were classified or coded using a coding system that related to the theoretical framework or research question. In this project, the coding system employed was based on the 3 research questions: positive or negative student perceptions or experiences and recommendations for the future. Within these overarching categories, topics emerged and were sub-classified or coded into themes. The analytical procedure adopted followed four phases:

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Phase 1:

Raw data (including student quotes) from the interview transcripts were tabulated verbatim into one of the three categories, by School. Matters raised were placed in the category stated by the students. For example if students raised the matter of supervision as a positive experience it was placed in the positive category. If the same matter was raised by different students as a negative, it was also placed in the negative category for the same school.
This was done so that all perceptions within schools were recorded and to honour the trust the students placed in the chief investigator to report back their views.

Phase 2:

The data under each of the three categories within each school was combined into themes. Appropriate student quotes were used to illustrate these themes. The themes included were representative of at least two or more students' views.

Phase 3:

The number of times a theme appeared under each of the three categories across all schools was recorded to indicate their prevalence. For example, if the theme of generic skills training appeared under the positive category of, for example, the School of Education, it was given a count of one. If generic skills training also appeared within the positive category of the School of Law it was given an additional count. Thus generic skills training would have a count of two under the positive experiences. If generic skills training also appeared under the negative category of the School of Law, Education and Business, then it also would have a score of three in the negative category. Overall, this hypothetical theme would have a count of two in the positive category and a count of three in the negative category. Further analysis was made possible by such treatment. Particular themes could be examined within a school of interest. Such analysis could provide an overall indication of views surrounding a particular theme within a school; for example, the theme that arose about office space in the School of Education in one campus. It is likely that students were satisfied with their allocated office space because the theme appeared only in the positive category and the response rate of students attending interviews in that campus was 32.6%.

Phase 4:

This phase involved the synthesis and interpretation of prevalent themes emanating from interviews.

Participants

A total of 123 PhD students participated in interviews, 18 students from one campus, 105 from another. Some interviews were individual face-to face or telephone interviews (9), at the student's request, however, most students took part in focus group interviews. Most focus groups consisted of 6 - 8 participants.

Participants were at various stages of their doctoral candidature, from those recently enrolled, to those close to submitting their thesis, to a few who had recently submitted their thesis. Included in the participants were 10 international students and a small number (3) of students who informed us that they had either recently discontinued their candidature or were on the point of doing so but were still formally enrolled in the PhD program.

The participation rate of the focus group participants was 17.9% (123 participants of a possible 689 enrolled students across the two campuses). This was marginally higher than the response rate of the university's survey which was 16.9 %. Participation rates varied by school (Table 1). The majority of participants were enrolled full-time into a PhD program, except for 5 candidates from the School of

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Public Health who were enrolled part-time, and also employed as academics within the school. Not all schools were represented in the table as students from some schools did not volunteer to participate. For example there were no participants who identified themselves as being enrolled in the School of Nursing.

The highest rates of participation arose from the School of Marine Studies (53%), the School of Business (36%) and the School of Education (39%). A note regarding the nature of the pool of participants needs to be emphasised. They were all volunteers and volunteers are known to vary in important ways from a random sample of participants. Volunteers tend to be "better educated, higher socio-economically, more intelligent, more in meed of social approval, more unconventional, less authoritarian, and less conforming than non-volunteers" (McMillan, 2008, p.122). As such their responses could be less representative than the rest of their colleagues.

Table 1 Participation rates by Campus and School

School	*Campus 1 attendance (n)*	*Campus 2 attendance (n)*	*% participation by School*
Marine Studies	8	N/A.	53
Biology	13	3	10
Earth Sciences	21	5	27
Engineering Sciences	7	N/A	8
Law	3	N/A	60
Business	12	4	36
Education	15	3	39
Arts and Social Sciences	3	3	6
Public Health	6	N/A	18
Veterinary and Biomedical Sciences	3	N/A	19
Creative Arts	4	N/A	24
Medicine and Dentistry	3	N/A	15
Molecular Sciences	7	N/A	26
Total	105	18	17.9

Results and discussion

Results and discussion will be presented by focusing on:
a) Prevalence of themes arising from the three questions of the interview schedule.
b) Themes identified across all schools.

a) Themes identified in relation to each question and frequency of such themes across all schools and campuses.

The following tables list the themes that arose from student interviews and the frequency with which

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such themes arose within the context of the question asked. The purpose of the following analysis was to indicate how prevalent these themes appeared to be for this group of students.

The themes most often cited as either a positive or negative experience (Table 2) relate to:

- generic skill courses,
- personal office space,
- supervision,
- social and academic/research culture,
- communications,
- funding for conferences /travel and
- administrative processes for a range of issues.

Table 2 Themes identified in relation to each question and frequency of such themes across schools as positives and negatives

Perceptions of Doctoral experiences		
Theme	*Number of schools where theme was identified as a POSITIVE EXPERIENCE*	*Number of schools where theme was identified as a NEGATIVE EXPERIENCE*
Adequate and helpful support/ IT staff	7	2
Generic skills courses	12	-
Personal office space	10	9
Personal and academic support for International students	4	1
Supervision	18	14
Travel grant assistance and work experience provided	2	-
Social and academic/research (isolation) culture	6	17
Communications	2	9
School seminar series	4	-
Library resources	4	3
Laboratory resources	2	4
Induction processes	3	1
Funding for field trips	2	-
Postgraduate booklet produced by the School	1	1
Funding for conference travel	-	10
School culture	-	2
Research Student Monitor support	-	1
Intellectual property issues	-	2
Administrative processes for a range of issues	-	6
Industrial relations between the university and other scientific research bodies	-	1
SPSS support	-	2
Equity issues (student with disability needing additional language support)	-	1

Where these themes are reported as negative experiences, they were often paralleled by students'

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recommendations to ameliorate the situation. In some instances the recommendations to attend to an issue, for example "communications", appear even if those within the particular school had not raised the theme as a negative experience. Therefore, in reviewing these results it was important to consider the recommendations suggested (Table 3) in conjunction with experiences cited as negative. A summary of student recommendations for the future is presented in Table 3. Also shown in the table is the number of times the recommendation was offered, representing the number of schools wherein the recommendation arose.

Table 3 Recommendations for the improvement of the doctoral program

Recommendations for the future	
Theme	*Number of schools where the recommendation was made*
Improve Communications	11
Seminar series to take place	9
Advisor training to occur	6
Research Student Monitor role to be strengthened	10
Increase generic skills courses' frequency and improve their timing	8
SPSS support/training to be increased	2
Formalise Supervision protocols	2
Inductions – increase timing and frequency	2
Policy for unexpected pregnancies to be defined	1
More lecturing and work experience opportunities to be offered	6
Offer Practical Experimental Techniques Training in handling small mammals	1
Offer Generic Human Resource Management courses	3
Each school to supply a policies and information Booklet for HDR students ("PhD for Dummies")	2
Improve liaison between CSIRO and the university	2
Research School to maintain a website with HDR student directory including school/research topic, contact details and updated details seminars that take place across Schools	3
Improve infrastructure and administrative process so they are less time consuming	3
Facilities- include a HDR student common room for networking	2

b) Themes identified across all schools.

An inspection of Tables 2 and 3 suggests that the most often identified themes were:

- Generic skills courses
- Personal office space
- Supervision
- Social and academic/research culture
- Communications
- Funding for conference travel
- Administrative processes

From the list of recommendations (Table 3) a set of requests which linked with the perceptions recoded in Table 2 becomes evident:

- Improve Communications
- Research Student Monitor role to be strengthened
- Seminar series to take place

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- Increase generic skills courses' frequency and improve their timing
- Advisor training to occur (and "Formalise supervision protocols")

These recommendations augment the positive and negative perceptions reported and provide additional insights about the doctoral experience of these students.

Discussion

The discussion that follows pertains to the issues raised by a number of students in diverse schools. Illustrative student quotes are included. These quotes are not ascribed to particular schools because to do so minimises their prevalence.

1. Generic skills courses

The Generic skills program was generally endorsed as very good by doctoral students.
"Statistics courses (SEM) provided by visiting expert organised by the school of Business was excellent".
"Research School courses are very good- especially the "Kick start your thesis course".

Recommendations

Some students were disappointed to have missed particular courses because they had either been cancelled due to lack of interest or they were offered at a time when they could not attend.
"Generic skills courses run twice a year as a template is a good default but if there are enough requests in between, courses should be run on an ad-hoc basis. At this stage courses are only run based on demand anyway, so there are only minor logistical issues to consider implementing this. As PhD students can start at any time, they would be the ones most disadvantaged by the current system".
"Induction day or week should be offered to all PhD students not only some and should be offered more regularly so that if students are enrolled at odd times in the year they can access it. Alternatively, ensure that PhD students only enrol at 2 times in the year".
Even if an advisor is extremely watchful and wishes to provide the best program support for their student they cannot do so easily by navigating the RS website for information. A designated Research Support Officer in each school also sending the same email announcements for Generic Skills Courses can act as an additional conduit of information. This successful model was only operating in a single school.

A useful suggestion made for some generic skills course was to put them online so that students can access them whenever they are able to devote the time to the course.
"Put generic courses on-line so that students can engage with them whenever they have available time- this would be cost-effective".

Finally, a recommendation was put forward that showed generic skills courses were very well received and perhaps foreshadows proposed changes in the way the doctoral program will be structured in Australia in the future (Tenant, McMullen, & Kaczynski, 2010).
"…some generic skills courses should be made mandatory -7 successful habits of PhD students? If perpetual funding is available to run the course, it should be made compulsory as this will really help students understand the tools they need to plot their journey and finish".

2. Personal office space

A number of students within particular schools reported that their personal work space was good, elaborating that it provided the ideal level of privacy and social support.
"Sharing an office …is better than having own office as it helps minimise social isolation".
"… just 2 sharing is optimal".

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From the wide range of responses that were offered it seemed that the most suitable office arrangements involved a quiet space to write which was close enough to other students to get social and academic support.
"…if the student is working on their own in a single occupancy office they may not have access to other PhD students "in the know" to inform them".

Findings from this study appear to indicate a split in the views about office facilities with students from 10 schools reporting office space as a positive while students from 9 other schools (or the same school in another campus) reporting negatives regarding their working space.
"Physical office space inadequate... lacks basic facilities (e.g., air con, telephones, and computers). No kitchen facilities near-by making getting a drink difficult".
"Sometimes the office space is too crowded for writing".
It is important to note that although the matter of the office space can stand alone, it has important ramifications in terms of social and academic isolation and the perceived culture of the school, an area which is cited as being, on balance across schools, more negative than positive.

Recommendations

Students offered no recommendations; however, it was clear from the negative comments arising in particular schools that they hoped their facilities would be improved as a result of registering their concerns within this research project.
One way that might help the office facilities' situation in the short term could be to designate a student common room in close proximity to the office space of HDR students so that they have a place to network and socialise. In this way the working environment of those who wish to write or read is less likely to be disturbed. This was raised as a recommendation to help networking, distinct from alleviating the pressure of crowded offices.
"…to build a sense of cohesion in PhD students, which in turn gives them additional support".
Such an intervention while not immediately alleviating office space pressures in some schools, might at least help develop a sense of community for those students who feel socially isolated because of office arrangements (in single office occupancy away from academic offices). This sort of intervention not only benefits a student's morale but can also have a positive effect on information flow through interaction with fellow students.
"Some (advisors) are well informed about administrative matters and generic courses, conference grants and other funding, others are not. If students are isolated from other students and their only point of contact is their advisor this becomes a big problem".

3. Supervision

Supervision and some allied themes, such as intellectual property, were raised by students in all focus group interviews. On balance the positive perceptions of supervision outnumbered the negative ones. Supervision was deemed a positive experience by students 18 times across schools and a negative one 14 times.
A majority of students reported very good supervision experiences.
"…advisor guidance and flexibility to allow me to find my own way".
Demonstrating that a student can do independent research was deemed to be very important particularly by some more mature aged students.
"…it is a bad move if the advisor over-supervises".

Students who reported a negative supervision experience appeared distressed. In five instances they emailed their views to maintain privacy and guarantee confidentiality.
A sense of powerlessness in relation to their advisors underscored those students' experience; this was especially acute in some cases. Such views tended to leave an impression of an overwhelmingly negative advisory experience which saturated the whole theme of supervision.
"No feedback for drafts from advisor. No adherence to meeting schedule by advisor...Six months of candidature wasted due to lack of supervision".

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Students interpreted some supervision issues to be related to overwork:
"Too few advisors for the number of students and this means not enough time for advisory meetings….Feeling that you are on the clock – not given enough individual time. Emails are not very useful in solving more pressing problems".
Or lack of expertise:
"Staff in the school are not as up in the latest research"

Recommendations

In response to the perceived ambiguities of the supervision protocol it was suggested to conduct and publish a parallel study examining advisors' positive and negative perceptions of the doctoral program. This was a gentle plea to perhaps provide a way to smooth the student-advisor relationship.
"Do a similar research to this to get feedback…from advisors (those 3 questions you asked us). It would be very useful to familiarize us PhD students with expectations of advisors".

A similar request, to formalise the supervision protocols, pointed to student attempts to gain control or have some safeguard against infrequent supervision meetings, communications and feedback about their work. Students seemed to be unaware of the student/advisor checklist available on the RS website.

The recommendation for advisors to undergo training (expressed in 6 different schools) was another expression of dissatisfaction.
"…and induction needs to be conducted for advisors so they are aware of all policies and regulations for PhD students and financial issues".

Students did not appear to be aware that advisors had to undergo training to be registered for PhD supervision. The adequacy of this training however, might need to be examined and the program updated in light of advisors' needs.

It would be a very useful to formulate a document outlining the professional code of conduct and research ethics as they apply to the advisor-student relationship needs to be easily accessible to advisors and students alike. "…there are no real guidelines about how an advisor should behave- just like the PhD students themselves"

Adding weight to the importance of students' perceived negative experiences of supervision are their recommendations to expand the Research Student Monitor (RSM) role. The rationale is that an RSM can be involved in initial mediation processes required when conflicts arise in supervision matters. These recommendations arose in the context of 10 schools.
"…to help resolve conflicts between students and advisors, including rates of meetings, feedback etc".

4. Social and academic/research (isolation) culture

This theme was raised a total of 23 times across schools so it is an important aspect of the doctoral experience, as was found elsewhere (Ali & Kohun, 2006; Hadjioannou, Shelton, Fu & Dhanarattigannon, 2007). It was perceived as a positive social/academic culture in 6 instances. The rest of the times it was cited as a negative, social/ academic isolation.

Student comments suggest that a PhD program based on laboratory work appears to reduce the academic and social isolation. Laboratory work and meetings tend to force students together and so there is a natural flow of information about academic, research, and administrative issues which allows students to participate more fully in the PhD program and to have a more positive PhD experience.
"Good organised lab meetings that let you know what is going on… (in research)".

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"…the social life".

Moreover, the personal office space allocated to students also influences their sense of connectedness and minimises perceived isolation.
"…is better than having own office as it helps minimise social isolation".

Social and academic isolation was the most strongly felt negative aspect of the doctoral experience. It was particularly felt by those in the social sciences and humanities where the research involved long hours of solitary work.
"Social and academic isolation in physical office environment"
"Don't know what research is being carried out in the school either by academics or students".

Students perceived the isolation to be one of the hardest aspects of the doctoral experience to adapt to. Whether they were in transition from undergraduate studies or entering research from the work place, for local or international students, the sense isolation was deemed to be detrimental and serious.
"Socialisation of PhD student is really important and so morning teas should be a regular feature of the school to help student isolation (in these non-experimental disciplines).Also should have staff student functions so that the students feel a bit more supported…- the current feeling is that the students are here only to make money for the university ..not to be part of the academic community".

From a retention point of view, students saw isolation as adding to the risk of dropping out of the program.
"Increase student activities so that students meet more regularly… their support mitigates against drop-out…".

Recommendations

The recommendations suggested were wide ranging. Some suggested more funding to attend conferences because the field of research was in an area with a dearth of academic expertise:
"Academic isolation can only be solved by attending conferences as there are too few academics with a relevant background at the university. Since there is no funding for conference travel the academic isolation is insurmountable"

More persistent pleas centred around the issue of more school and cross faculty seminars that would draw students and academics together, increasing social contacts, academic and research activity awareness and networking.
"Cross school and cross faculty functions that could draw students together to enrich the academic and social life of the post-grads…"
"…build a sense of community for all PhD students and decrease the academic and social isolation…".

A related suggestion, to help develop a better sense of research community, was to construct a dedicated online web page for emailing the RS. This was viewed as a way to identify common issues or concerns, giving the students a chance to be "in the loop" about offering their suggestions. In response it would be possible for the RS to direct them to existing resources, if available.

5. Communications

Communications are inexorably linked to students' sense of isolation, academic and social. Conversely effective communications promote the positive sense of integration to a school's community. Effective communications also link with students' perceptions of the quality of their supervision. As such appropriate communications can potentially address a number of related concerns.

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Communication was raised as a positive experience twice, once in the context of the Economics discipline which was deemed to have excellent communications and one other time as a general comment:
"If you are on the email aliases that are available you can get all the information that is about".

A range of comments from students focused on various perceptions about communications highlighting the importance of this theme:

"Emails are not getting to post-grads….No information to access external funding bodies or other grants".
"Little focused communication to highlight important grant information or other administration issues that could be of help during the candidature… Communication is …diffuse so that we don't bother to check the myriad of emails that we get..."
" lack of information about thesis-by-publication".
"No list of the current PhD students studying in the school".
"No administrative follow-up on progress even after dropping out of PhD program!"

Perhaps the most pertinent comment was the following:

"Communication comes from too many different email aliases and unless students are particularly attentive they miss out because they believe that it is useless information".

Recommendations

There were many recommendations to improve the communication system operating at present in the university showing that the issue of communication is important and has many ramifications, including financial, social, academic and administrative.
Suggestions included:
"Fix up the email aliases so that PhD students belong to only one email group to be informed of important events/administrative information".

"Centralise the process of disseminating the information necessary for PhDs to the RS and away from the advisor to ensure that correct and up-to-date information is given to candidates in regard to, for example, the thesis structure, administrative procedures for financial and travel process, IT support and resources."

A suggestion was proposed to provide a short guide to internal online resources provided by the RS.
"…highlighting the existence of the undergrad/post-grad bulletins and the university computing bulletins. PhD students aren't all necessarily graduates of the university and might not know of this useful resource, especially if they need to do things like get furniture/sell furniture when moving in/out or if they have a computer connection problem…"

Given that effective communication is essential so doctoral students know exactly what is on offer (generic skills, financial help, awards, grants writing courses, seminars etc.) and all policies, including those pertaining to international students and intellectual property, possible errors in the communication system must be addressed. The eRS site and its use appeared to be known by only a handful of students. This is a clear indication of communications not filtering through to important end users.
"…the e-GRS portal covers some information, but is not widely disseminated to PhD students how to log into it. The GRS page had a pretty graphic at the bottom with "e-GRS" on it, but it is not clear what it is".

6. Funding for conference travel

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A fairly widespread perception was a lack of funding for conference travel. It was reported across 10 different schools.
"No funding for conference travel if you have already used the funds (Internal Research Pool) for field work. RS funding comes up only once a year and that is not sufficient and not very flexible… Can't collaborate unless you go to conferences".

Recommendations

Students offered no recommendations other than a hope that things would improve.

7. Administrative processes

Administration was generally perceived as a burden that took up much time due to perceived continual changes.
"Fieldwork necessitates purchasing certain resources but administrative rules do not facilitate the process".

"Getting signatures from advisors and HOS for administrative paper work for travel and resources/ supplies is difficult particularly if there are time contingencies with a field trip which needs to be carried out promptly because of the nature of the research".

"Having to log into several different pages to do various things- should only have log in once in one area. Needs to be streamlined and overhauled for all sorts of administrative issues".

Recommendations

The frustrations encountered by students when preparing travel requisitions and purchases are experienced by many at the university, including academic staff. The general feedback from students urged the need to streamline processes so they are less time consuming.

Summary and Recommendations

This study highlights themes identified by HDR students across two university campuses, in various schools. On the whole, the research indicated that the PhD program is best delivered by a range of people, not just the advisor (supervisor). The RS and administration staff of each school have pivotal roles to play in the delivery and quality of the program. Administrative organisation, physical working space allocation, available resources, training courses and communications are critical in supporting and enhancing the doctoral experience. As a result contextual factors associated with each school, its characteristics and social/research culture, were very influential upon the doctoral experience.

Another important factor that was noted as having bearing upon the student's doctoral experience was their colleagues. Results from this project indicate that isolation can lead to a very unsatisfactory and perhaps even unproductive candidature reflecting past research (for example, Ali & Kohun, 2006; Hadjioannou, Shelton, Fu & Dhanarattigannon, 2007). Schools need to recognise this aspect of collegiality and ensure that they promote its flourishing.

Some school models appeared to be better able to maintain the flow of information that is cited as critical in assisting students and, by implication, advisors, as McAlpine, (2012) recommended. For example, one school employed a Research Support Officer (P/T) whose duties included:

- Providing administrative support for the Director of Research and Research Training
- Keeping updated spread-sheet of research student candidatures (name, topic, advisors, RSM, date of enrolment, confirmation and pre completion; this included all research students, from Hons to Doctoral candidates

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- Maintaining and distributing a School of Education Postgraduate Research Student Handbook
- Organising confirmation and pre-completion seminars
- Administrative support for processing funding applications (internal grants, conference travel, RS)
- Supporting HDR students with administrative queries – this was probably the most significant task involving direct working with students themselves, but also covered many issues arising for students concerning confirmation and pre-completion, and funding applications
- Informing HDR students and academic staff of upcoming conferences.

As a result, students from that school seemed more satisfied with their doctoral experience than students in some other schools. Nonetheless, this satisfaction did not extend to perceiving less academic/social isolation, or negating the view that the research culture in the school was not what they had hoped. These other factors are likely to be more closely related to a seminar series a school provides, an often requested "wish" from the students in this research. Previous research on doctoral students supports findings here as it suggests that the doctoral experience is influenced by the learning environment provided by the scholarly community of the school (McAlpine & Amundsen 2007; Pyhalto, Stubb, & Lonka, 2009).

The model employed by the above school was successful for another reason. Although effective communication can be delivered by electronic means, some students actually preferred to be able to speak to a designated person within their school about issues regarding their candidature, finance and so on. This could be simply because they need a break from their research and some human interaction, because they need clarification of issues arising from electronic communications or because they are unable to access their advisor for a range of reasons. The advisor might be unavailable and the issue is pressing, they may feel it is too trivial to bother their advisor, or they may believe the advisor is equally unclear about the issue. Having an accessible and efficient staff member in a school able to distribute accurate information is a very effective strategy from the student's, and perhaps the advisors', point of view. This finding supports McAlpine's (2013) view that doctoral supervision is the responsibility of the whole institution not only the advisor (supervisor).

The student-advisor relationship remains a very important factor in the perceived quality of the doctoral experience and in its successful completion (Kearns, Gardiner & Marshall 2008). The best possible relationship between advisor and student results in the student developing into an independent and confident researcher. If this is not established by the advisor, if it occurs by default rather than by design, then the student is likely to feel the supervision was not adequate for their needs. Hence, appropriate communication is vital to consolidate the advisor-student relationship. Unresolved expectations have been previously flagged as a 'warning sign' of students at-risk of not completing their degree (Manathunga, 2005). Hair (2006) argued that there is a need to explicitly discuss initial expectations of the HDR student and the advisor (supervisor) at an early stage in the candidature.

The themes identified in this study need to be validated by quantitative means across a range of universities to investigate how extensively they are held and to what degree respondents, grouped by their stage on the doctoral program, perceive their relevance. In addition the characteristics of current waves of HDR students at risk of dropping out should be researched in order to improve the practices of doctoral education. Limitations of the present study to be address in future studies include examining the views of international HDR students; while several participants were international students, their views were not disaggregated from the views of domestic students. In light of the increasing numbers of international students who attend Australian universities there is a need to investigate their doctoral experiences and needs. In addition, it would be worthwhile to examine student views by stage of candidature since expectations and requirements can vary markedly at different stages of the doctoral journey. Finally, although the international research literature on HDR supervision abounds with examples of good supervision practice (e.g., Zeegers & Barron, 2012; Sambrook, Stewart & Roberts, 2008), there is a need for longitudinal research to assess the impact of interventions designed to improve the doctoral journey.

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