Enhancing the Research Student Experience at University

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Submitted to the Australasian Association for Institutional Research 2008 Forum
15 September 2007

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Abstract

In Australia, in the past decades increasing attention has been paid to the quality of research education by universities, governments, prospective employers and industry partners. The success of research students and quality of graduates are important national issues given the positive relationship between the educational level of the population and the national levels of productivity and innovation. Consistent with national trends towards increased numbers and diversity of the general student population, research student cohorts in Australia are becoming larger and more diverse, requiring institutions to actively manage factors influencing the research student experience of a range of academic and general services.

This paper presents approaches effectively used by the University of Western Sydney (UWS) to improve the research student experience as a direct result of their feedback. These approaches include: (a) identifying trends in the research student experience and areas needing improvement through the UWS Research Student Satisfaction Survey conducted in 2005 and 2007, and through relevant themes that emerged from the 2006 AUQA audit; (b) prioritising and implementing improvement solutions; and (c) monitoring the improvement actions to measure their efficiency based on student feedback, and to identify areas warranting further improvement attention.

Keywords: Research student experience, evaluation, improvement.
Introduction

Success of research students at university is an important national issue, as the higher the educational level of the population, the greater the nation’s levels of productivity and innovation (Harman, 2003; Usher, 2002). The life chances of people who complete a higher degree are dramatically improved and early withdrawal from a research program involves considerable opportunity cost for both the individual and the university. Both research and anecdotal evidence suggest that obtaining a research degree enhances employment and career opportunities, earnings, satisfaction of one’s needs and contribution to the social and economic development of one’s community and nation. For example, as noted by Bills (2007), improving the chance of getting a job as a purpose of study is rated high by research students and more so by early career graduates than it is by mid to late career graduates. Graduate Careers Australia (GCA) reports that master’s degree holders earn more than bachelor’s degree holders (GCA, 2006). A recent study by Universities UK reports that, over a working life, additional lifetime earnings for a postgraduate degree are approximately £75,000 (AU$158,000) (Price Waterhouse Coopers, 2007). There are, of course, significant differences depending on the field in which the degree is earned – from an additional £340,000 (AU$717,000) for medicine and dentistry to £34,000 (AU$72,000) for an arts degree. From an institutional perspective, research student retention contributes to the overall student retention picture – one of the major university performance indicators employed by the Australian federal government in allocating the Learning and Teaching Performance Fund (Commonwealth Department of Education, Science and Training [DEST], 2003).

Research students include those who are enrolled in a Doctor of Philosophy (PhD), a professional doctorate, such as Doctor of Creative Arts, or a Masters by Research degree. Over the past three decades, Australian universities have experienced a substantial increase in research student enrolments with PhD enrolments growing nationwide from about 5,000 in 1975 to 7,625 in 1985, 9,298 in 1990, and 27,996 in 2000 (Harman, 2003). As of 2006, research students in Australian universities comprised 5.2% (51,273) of the total student population in the higher education sector (DEST, 2006). Another national trend is towards increased diversity of research degree students, particularly a growing proportion of international students, offshore students and female participation in research programs (Bills, 2003; Harman, 2003). The increased numbers and diversity in research student enrolments requires from institutions an updated understanding of multiple factors contributing to the research degree experience regarding a range of academic and general services. Traditionally, indicators such as student retention, progress and completion rates, student satisfaction with course experience and graduate outcomes are used to assess the quality of research education.

A range of interrelated factors predicting the success of research degree identified in the literature can be grouped into three broad categories. First, research degree completion rates significantly vary across institutions and fields of study (Martin, Maclachlan & Karmel, 2001). Some authors link this variation to major differences in discipline composition between universities and to the intrinsic
features of the different discipline areas (Bills, 2003; Delamont, Atkinson & Parry, 2000; Neumann, 2003; Seagram, Gould & Pyke, 1998). These field-specific characteristics include the nature of research environment (e.g., laboratory-based or individual), particular supervision models (e.g., the frequency of meeting with supervisors, different levels of guidance and direction), the involvement of human participants in research, and the extent to which there are structured components in the research program. The second group of factors predicting research student success includes their socio-demographic and study characteristics, such as gender (Harman, 2003; Martin, Maclachlan & Karmel, 2001), age, study mode – full or part time (Martin, Maclachlan & Karmel, 2001), their pre-entry qualifications, whether they are national residents or international students (Wright and Cochrane, 2000), the extent to which they are employed (Booth & Satchell 1995; De Valero 2001; Seagram, Gould & Pyke, 1998), research costs and form of funding (Wright & Cochrane, 2000).

Many reports indicate intercorrelation between some of the factors in these two groups. For example, research in some fields of study is relatively more expensive to fund than in others (British International Studies Association, 2002; Jackson, 2002; Macquarie University, 2006). Seagram, Gould & Pyke (1998) report the greater proportion of full time research students in certain fields, as a factor that impacts on whether students in the natural sciences were more likely to complete than students in the social sciences. An important common feature of both these groups of factors, however, is that though institutions can anticipate them, the university's ability to influence them appears somewhat limited.

The third group of factors pertinent to the research student experience at university, and ultimately, to their successful completion of the degree, differ from the first two in the extent to which they are within the immediate control of institutions. The key issue of this kind identified in the literature is the necessity for high quality research student supervision equivalent across disciplines (Delamont, Atkinson & Parry, 2000; Ginns, 2004; Harman, 2003; Heath, 2002; Marsh, Rowe, & Martin, 2002; Neumann, 2003; Pearson & Brew, 2002). In terms of student integration into an intellectually stimulating and supportive research culture and academic collegiality, the team-based model of supervision is found to be particularly beneficial (Becher, Henkel & Kogan, 1994; Delamont, Atkinson & Parry, 2000; Golde, 1998; Neumann, 2003). Such team or panel supervisory arrangements are found more often in laboratory based contexts and viewed as lacking in humanities and social sciences. Other factors associated with research degree performance that universities have influence over encompass both the pre- and post enrolment periods. The student experience may be improved with accurate information provided at and prior to commencement about attendance requirements and guidelines for space allocation or other resources to which students are entitled; access to computing facilities; adequate study space; targeted support for different types of research students; and effective research administration systems, including accessing project funds, processing of ethics applications, appointment of a replacement supervisor if necessary and so on (Altbach, 2002; Ginns, 2004; Harman, 2003; Macquarie University, 2006).
Though informative, the above findings may differ from a specific set of factors contributing to research student success in each given university, thus these factors need to be examined in specific institutional contexts. Altbach (2002) notes the growing importance of reporting institutional research beyond the university in the interests of sharing experiences and being able to benchmark performance. Accordingly, this paper aims to share approaches used by the University of Western Sydney (UWS) to improve the research student experience as a direct result of their feedback. These approaches include: (a) identifying trends in the research student experience and areas needing improvement through the UWS Research Student Satisfaction Survey (RSSS) conducted in 2005 and 2007, and through relevant themes that emerged from the 2006 AUQA audit; (b) prioritising and implementing improvement solutions; and (c) monitoring the improvement actions to measure their efficiency based on student feedback, and to identify areas warranting further improvement attention.

Method

Participants and procedure
The participant pool for the 2005 UWS Research Student Satisfaction Survey comprised 401 UWS research students constituting a response rate of 54%. In 2007, 279 research students responded to the survey – a response rate of 40%. Importantly, both response samples generally matched the overall profile of UWS research students in terms of gender, age, college, level of study, campus, Aboriginal or Torres Strait Islander descent, medical condition, language background and international student status.

The RSSS is conducted using both paper and online data collection methods. Initially, a survey invitation and online tool are emailed to all research students enrolled at the University. Follow-up emails are sent to all non-respondents three weeks after the initial invitation. One month after the follow up, a paper version of the survey is sent to non-respondents with a reply pre-paid envelope.

Instrument
The UWS RSSS was developed from a parallel instrument used over the past six years at the University of Technology, Sydney (2006). It was reviewed in consultation with UWS staff, trialled with UWS research students and further refined in the light of their feedback. Its 107 items (116 items in the 2007 instrument) cover such areas of the research student experience as:

- Academic Support;
- Outcomes of Study;
- Administration and Access to Facilities and Resources;
- Library Services;
- Computing Facilities, Research Support and Infrastructure;
- Student Services;
- Essential Resources Policy;
- General Student Facilities;
- UWS Postgraduate Student Association’s Services and Activities.
For each of the above areas respondents are asked to provide comments on the “best aspects” of the university’s performance, and on those most “needing improvement”. The participants’ written comments are subjected to a detailed content analysis.

The Australian Universities Quality Agency (AUQA) audit of UWS

The AUQA audit of UWS was conducted during August to October 2006. The Audit Panel held interviews with staff, students and other stakeholders from all campuses. In all, the Audit Panel spoke with over 280 people, including research students, research sponsors and partners. The audit report provided an additional, objective and valuable source of information for assessing the research student experience and quality of research education at UWS.

Results

RSSS

Table 1 provides a comparison between the mean ratings and ranks of the 10 survey items with the highest mean scores on importance in 2007 (highest first), and the corresponding results for the same items in 2005. The results of the surveys should primarily be seen as flags for follow-up and the differences between ratings are not necessarily statistically significant. Specifically, it was found that any pairwise difference between means greater than .30 is likely to be statistically significant at $p < .05$.

<table>
<thead>
<tr>
<th>Item</th>
<th>2005 Mean</th>
<th>2005 Rank</th>
<th>2007 Mean</th>
<th>2007 Rank</th>
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<tbody>
<tr>
<td>Electronic access to library resources</td>
<td>4.74</td>
<td>1</td>
<td>4.87</td>
<td>1</td>
</tr>
<tr>
<td>Ease of access to the library when needed</td>
<td>4.72</td>
<td>2</td>
<td>4.84</td>
<td>2</td>
</tr>
<tr>
<td>Remote access to UWS and other library catalogues</td>
<td>4.69</td>
<td>3</td>
<td>4.78</td>
<td>3</td>
</tr>
<tr>
<td>Development of an ability to think critically</td>
<td>4.63</td>
<td>5</td>
<td>4.72</td>
<td>4</td>
</tr>
<tr>
<td>Supervisors give timely feedback on submitted written material</td>
<td>4.52</td>
<td>3</td>
<td>4.68</td>
<td>5</td>
</tr>
<tr>
<td>Intercampus book and materials delivery services</td>
<td>4.64</td>
<td>4</td>
<td>4.67</td>
<td>6</td>
</tr>
<tr>
<td>Development of the skills necessary to plan and undertake research</td>
<td>4.59</td>
<td>8</td>
<td>4.66</td>
<td>7</td>
</tr>
<tr>
<td>Accessing essential project funds for research activities</td>
<td>Not used</td>
<td></td>
<td>4.64</td>
<td>8</td>
</tr>
<tr>
<td>Assistance provided by library staff</td>
<td>4.59</td>
<td>9</td>
<td>4.63</td>
<td>9</td>
</tr>
<tr>
<td>Development of up-to-date knowledge and skills in the field studied</td>
<td>4.60</td>
<td>7</td>
<td>4.62</td>
<td>10</td>
</tr>
</tbody>
</table>

The top ten items on importance have remained relatively stable between 2005 and 2007, with the overall trend in importance ratings being upward. The largest number of items, five in the top 10, come from the Library subdomain, followed by three items from the Outcomes subdomain.

Areas of good practice to be sustained and promoted are those which attracted both a high importance rating with a mean above 4.5 and a high performance rating with a mean above 4.0. Different aspects of the research student experience of the University library make up the largest number in this set. They include: ease of access to the library when needed; access to electronic
library resources; remote access to the UWS and other library catalogues; intercampus books’ and materials’ delivery services; assistance provided by library staff; and interlibrary loan services. Other major good practice area recognised by the survey participants include a range of learning outcomes, specifically the development of an ability to think critically, the skills necessary to plan and undertake independent study and research, and the development of up-to-date knowledge and skills in the field being studied. The “good practice” results of the 2005 and 2007 surveys appear generally consistent with slight variations (Table 2). Two survey items related to research supervision attracted both high importance and high performance ratings in 2007, but lower than 4.0 performance ratings in 2005 – “Supervisors give timely feedback on submitted written material” and “Supervisors clearly advise on the standard of work required for the thesis”, while the item “Supervisors are available when needed” attracted an importance rating lower than 4.5 in 2006 with a noticeable increase in 2007.

Table 2: The Means of RSSS Items Rated High on Both Importance and Performance in 2007 and the Same Items Results in 2005

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>4.74</td>
<td>4.87</td>
<td>Electronic access to library resources</td>
<td>4.15</td>
<td>4.41</td>
</tr>
<tr>
<td>4.72</td>
<td>4.84</td>
<td>Ease of access to the library when needed</td>
<td>4.31</td>
<td>4.40</td>
</tr>
<tr>
<td>4.69</td>
<td>4.78</td>
<td>Remote access to UWS and other library catalogues</td>
<td>4.14</td>
<td>4.35</td>
</tr>
<tr>
<td>4.63</td>
<td>4.72</td>
<td>Development of an ability to think critically</td>
<td>4.17</td>
<td>4.20</td>
</tr>
<tr>
<td>4.52</td>
<td>4.68</td>
<td>Supervisors give timely feedback on submitted written material</td>
<td>3.95</td>
<td>4.14</td>
</tr>
<tr>
<td>4.64</td>
<td>4.67</td>
<td>Intercampus book and materials delivery services</td>
<td>4.23</td>
<td>4.42</td>
</tr>
<tr>
<td>4.59</td>
<td>4.66</td>
<td>Development of the skills necessary to plan and undertake independent research</td>
<td>4.01</td>
<td>4.11</td>
</tr>
<tr>
<td>4.59</td>
<td>4.63</td>
<td>Assistance provided by library staff</td>
<td>4.27</td>
<td>4.32</td>
</tr>
<tr>
<td>4.60</td>
<td>4.62</td>
<td>Development of up-to-date knowledge and skills in the field being studied</td>
<td>4.15</td>
<td>4.16</td>
</tr>
<tr>
<td>4.55</td>
<td>4.62</td>
<td>Supervisors clearly advise on the standard of work required for the thesis</td>
<td>3.87</td>
<td>4.06</td>
</tr>
<tr>
<td>4.56</td>
<td>4.60</td>
<td>Development of oral and written communication skills</td>
<td>4.02</td>
<td>4.09</td>
</tr>
<tr>
<td>4.61</td>
<td>4.59</td>
<td>Inter-library loan services</td>
<td>4.14</td>
<td>4.26</td>
</tr>
<tr>
<td>4.41</td>
<td>4.53</td>
<td>Supervisors are available when needed</td>
<td>4.13</td>
<td>4.24</td>
</tr>
</tbody>
</table>

Performance ratings on the RSSS have been trending upwards (average improvement = .18), with the change from 2005 to 2007 being significant in three instances: IT helpdesk assistance (mean difference = .31), thesis writing skills support (mean difference = .34), and adequate support in securing resources (mean difference = .32). The particularly high performance ratings for the UWS library (overall average = 4.20) are especially significant, given its high overall importance ratings. This outcome aligns with the findings of other internal feedback surveys and UWS library’s AUQA audit commendation.

Despite this positive trend, a number of areas continue to attract performance ratings below 3.0, although not all of these attract high importance ratings. Eight aspects of the research student experience at UWS presented in Table 3 attracted a relatively high importance rating (4.45 or more) and a relatively low performance rating (3.25 or less). Three of these items are concerned with the quality of research support and infrastructure and five are concerned with the UWS Essential
Resources for higher degree research students’ policy. These outcomes are similar to the findings from the 2005 RSSS.

Table 3: The Means and Ranks of RSSS Items Rated High on Importance and Low on Performance in 2007

<table>
<thead>
<tr>
<th>Item</th>
<th>Importance 2007 Mean</th>
<th>Importance 2007 Rank</th>
<th>Performance 2007 Mean</th>
<th>Performance 2007 Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessing essential project funds for research activities</td>
<td>4.64</td>
<td>8</td>
<td>3.14</td>
<td>85</td>
</tr>
<tr>
<td>Essential resources policy provides adequate support in securing resources</td>
<td>4.54</td>
<td>17</td>
<td>3.23</td>
<td>81</td>
</tr>
<tr>
<td>Essential resources policy allows equal access to resources to all students</td>
<td>4.53</td>
<td>18</td>
<td>3.25</td>
<td>79</td>
</tr>
<tr>
<td>Essential resources policy is well administered by the college</td>
<td>4.50</td>
<td>25</td>
<td>3.12</td>
<td>86</td>
</tr>
<tr>
<td>Knowing where to go in the college for assistance about research or supervision</td>
<td>4.49</td>
<td>26</td>
<td>3.24</td>
<td>80</td>
</tr>
<tr>
<td>Knowing where to go at UWS for assistance about research or supervision issues which the college is unable to resolve</td>
<td>4.49</td>
<td>27</td>
<td>3.01</td>
<td>93</td>
</tr>
<tr>
<td>Clear explanation of the policy and knowing how to access the resources one is entitled to</td>
<td>4.45</td>
<td>34</td>
<td>2.89</td>
<td>100</td>
</tr>
<tr>
<td>Existence of clear pathways to follow in accessing resources</td>
<td>4.45</td>
<td>35</td>
<td>2.98</td>
<td>95</td>
</tr>
</tbody>
</table>

In terms of the perceived quality of research infrastructure and support, the key areas for the University to follow up are: that research students need to be confident about where to go for local (college or school) assistance regarding research or supervision; similarly, confidence about where to go for assistance if the college is unable to resolve such issues; and ability to access essential project funds for research activities. While the UWS Essential Resources Policy is clear, the survey responses suggest that the research support available to students may not be as widely known or taken up as it should be, with more attention to be directed towards supporting students in securing the resources they need; effectively administrating the policy at a local level; ensuring equal access to resources for all students; and communicating the policy and how to access the needed resources. The majority of high importance/low performance items identified for improvement attention in the 2005 RSSS have shown an upward trend in performance since that time. They include all of the items above. Further improvement in these areas will ensure they are at the level of performance that would constitute good practice.

The survey also invites the respondents to write open-ended comments on each of the major areas on which it seeks information. The content analysis of these comments suggests that the recurring themes remained relatively similar between 2005 and 2007. Among the areas where improvement would be helpful, the participants identified: access to and communication with supervisors; supervisors’ experience in the area studied; help in designing survey, data collection and analysis; advice on academic writing; networking with other research students and University research centres; and off-campus support to research students. Most of the “best aspect” comments were focused on the outcomes of study including: having developed ability to work productively in a team; having knowledge of ethical issues in early stages of research; and having a clearer understanding of intellectual property issues.
Findings from the 2006 AUQA audit report

The AUQA recommendations for UWS related to quality in research education were consistent with the outcomes of the University’s internal assessment via the RSSS. The recommendations highlighted the strategic focus for enhancement of the UWS research degree experience that would continue to be: high quality supervision of research students; a supportive research culture; and the provision of adequate resources and infrastructure as well as an active program of workshops and seminars for research students. Among AUQA’s commendations of UWS was its effective use of a Register of Research Activity tracking individual staff performance in generating external research income, audited research publications and higher degree research completions. The University has explicitly linked the Register with supervision quality, requiring all supervisors to qualify on the Register. AUQA also commended UWS for providing professional development opportunities for higher degree research supervisors, in particular, through its graduate supervisor registration program. Supervising staff maintain registration on the Graduate Supervisor Register which gives opportunities for critical engagement in peer led forums with current international and Australian research in the area of doctoral training.

UWS improvement initiatives based on the RSSS and AUQA outcomes

The 2005 Research Student Satisfaction Survey results enabled the key research training and governance structures – the UWS Research Studies Committee, the UWS Strategy and Quality Committee, and the UWS Post Graduate Student Association to jointly establish a set of improvement actions including:

- Cementing the provision of log-on privileges and library privileges for research students equivalent to those available to academic staff;
- Increasing the number of college based scholarly forums and events to better engage research students with the UWS research community and to showcase their work;
- Reviewing resource requirements and entitlements for research students;
- Establishing a research student network through the Postgraduate Association of UWS.

These improvement actions undertaken as a direct result of student feedback were communicated to all research students via a hard copy – visually interesting “postcard”. When the 2007 RSSSS was conducted, research students also received the postcard along with the survey invitation to stress how the University had recognised their collective voice and addressed the issues raised. The 2007 RSSS results show that the improvement actions taken following the first survey were effective in most of the areas examined, with the changes from 2005 to 2007 being statistically significant in three instances at the university level. More areas with statistically significant trending upwards are evident at the college level. In summary, the following broad areas show significant improvement from 2005 to 2007 based on research student feedback: research supervision, administrative support, IT support, quality of and access to learning resources and infrastructure.
As we move towards the 2009 RSSS, UWS is refining and further focusing its quality agenda for the support of research trainees through the feedback received from the 2007 survey. For example, with more off-campus support for research students being sought (performance mean = 3.61), UWS is implementing the online Graduate Essentials program developed by the University of Melbourne. Piloted in the first semester 2008, the program includes interactional elements and will construct additional modules based on users’ feedback from the pilot and the 2009 RSSS. The University has expanded its academic writing support program with the development of intensive writing workshops for international students, and will establish support networks from these development activities responding to needs for “better advice on academic writing skills early on” and to “improve the international student service for HDR students” highlighted in the 2007 RSSS.

The biannual RSSS results enable the University to track the research student experience and to take timely and appropriate actions to enhance their satisfaction. At the same time, relationship between research student satisfaction with some university services and even with their overall study experience, and successful completion of their degree is a complex interaction of factors, rather than a simple causal link. Therefore, there is a need for more empirical evidence and further research in order to understand how and to what extent the improvement of a specific university service or approach can contribute to success of research students and the quality of graduates. The RSSS will need reworking in a number of ways to correspond to the University’s quality agenda in the future. In particular, “when researching doctoral education, it is critical to disaggregate data to the level of department [academic unit] and program” (Golde, 1998, p.20), since the core of the research student experience is the student-supervisor relationship within the discipline based academic unit.
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