# Faculty of Science

## Student Research Experience Questionnaire Report

## Trends and key issues: 2006 - 2010

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## Contents



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# EXECUTIVE SUMMARY

## INTRODUCTION

Data on research higher degree students' perceptions of their research training experiences are gathered each year using the Student Research Experience Questionnaire (SREQ). The purpose of the SREQ is to provide the University community with a basis for strategic, faculty level academic development and curriculum review to further enhance the quality of research higher degrees. Analysis of this data provides a comprehensive picture of trends in the student experience, and the performance of the Faculty in relation to two of the University's Key Performance Indicators for Research: Supervision, and Overall Satisfaction with the research higher degree; and other related areas: Infrastructure; Research Climate; and Generic Skills.

Written observations, from respondents to the survey, about their experiences provide evidence to support the Faculty SREQ quantitative data results (percentage agreement scores), and provide detailed information about key issues in the Areas of best practice and Areas needing improvement, during their research training experience. The results are directly aligned with the scales and survey items used in the SREQ, with the addition of items that occur frequently in student comments.

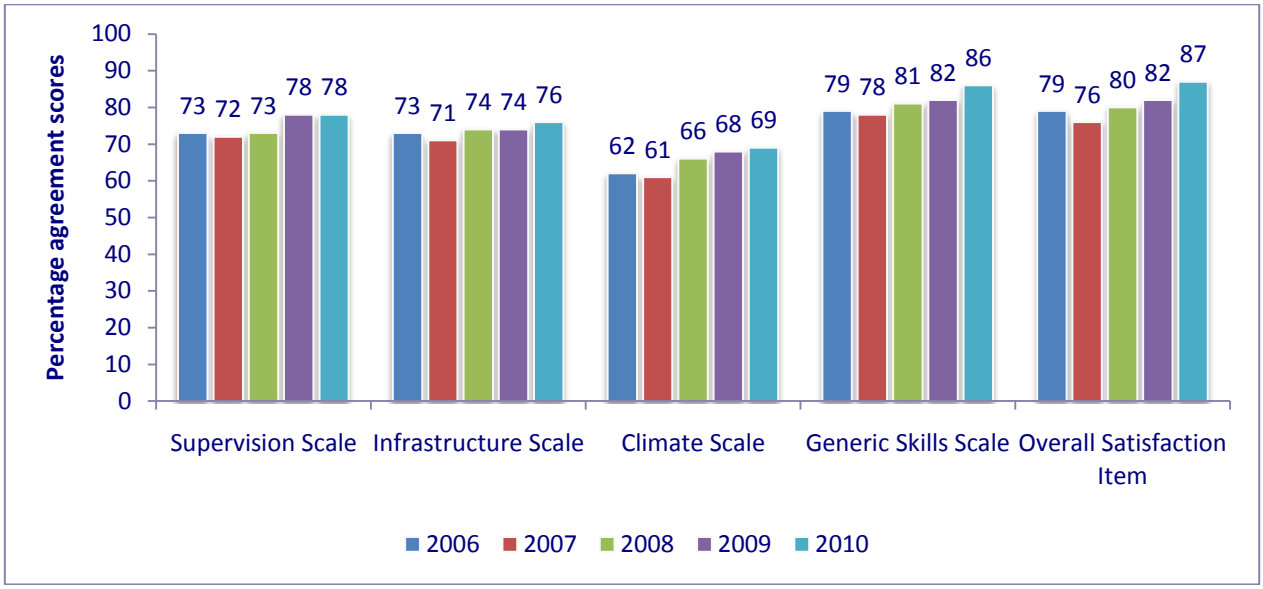
The analysis of qualitative data received between 2006 and 2009, and reported in this document, is based on written observations received from **all** respondents who answered the open questions in the SREQ. Results of the analysis of the 2010 data is further divided by Department/ School (as indicated in SREQ Department fields).

## COMPARATIVE DATA: 2006 – 2010[1]

### Quantitative data

The following chart provides a comparison of the results of the SREQ percentage agreement results (i.e. respondents who either agreed or strongly agreed with the survey items relating to each scale) for the Faculty of Science since 2006.

Figure 1: Faculty of Science: Percentage agreement results: SREQ 2006 - 2010




### Qualitative Data

#### *Comparative data: 2006 – 2010*

The charts on the following page provide an indication of those areas of the research higher degree student experience that respondents considered to be either of best practice or in need of improvement in their

[1] More detailed data, i.e. comparing the results by Department/ School, and from domestic and international students is available in the individual sections of the report. Statistical data regarding the number of students who responded to the SREQ, together with data on those who answered the open questions, can be found at Attachment One.

responses to the open questions in the SREQ 2006 – 2010. An average of 77% of respondents provide written observations about areas of best practice and 66% areas of improvement.

Figure 2: Faculty of Science: Areas of best practice: SREQ 2006 - 2010

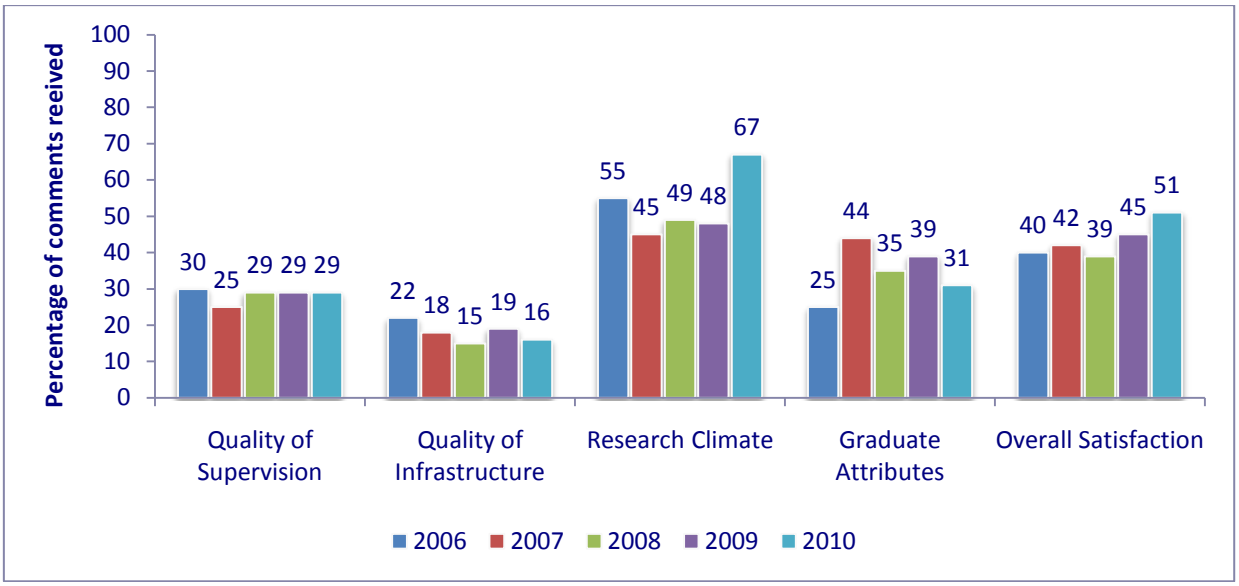
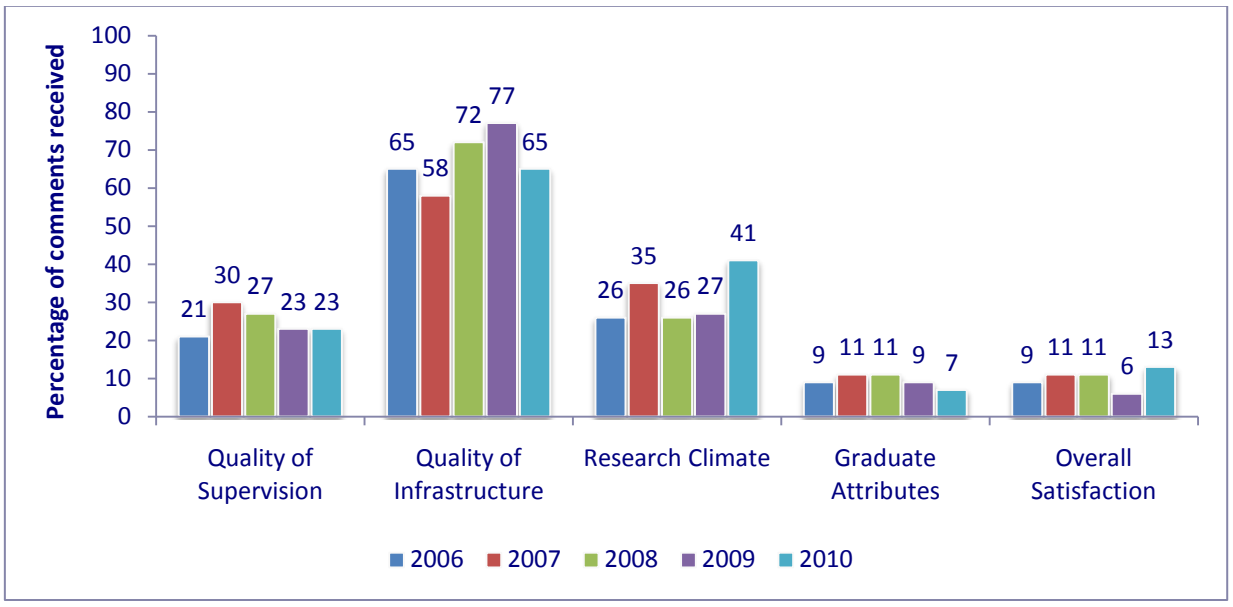



Figure 3: Faculty of Science: Areas needing improvement: SREQ 2006 - 2010

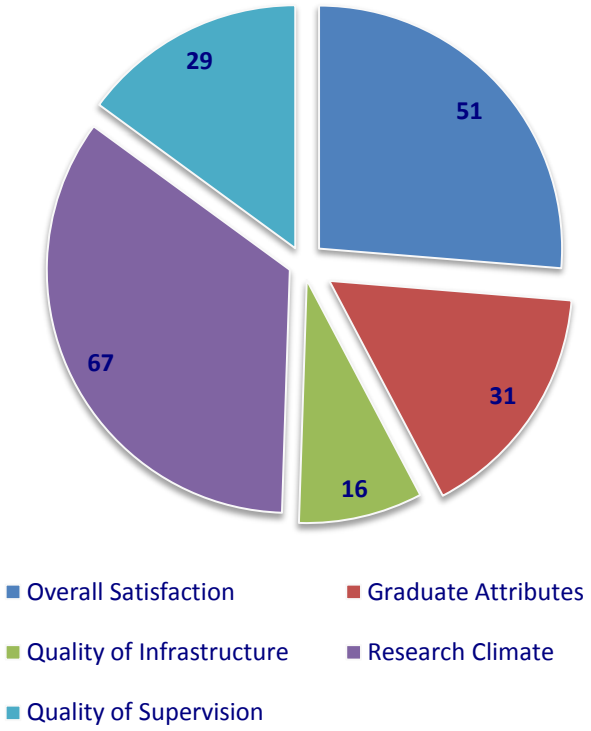
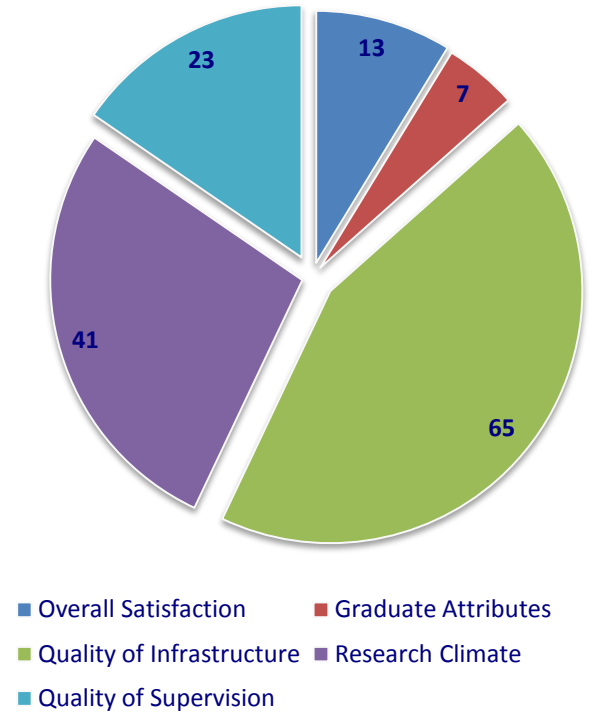



### *Key issues: 2010*

The charts on the following page provide an overview of the issues that were of importance to research higher degree students in the Faculty in 2010.

Narrative and proportional chart data show the percentage of the total number of comments received from respondents for each of the main categories of the research higher degree student experience, together with an indication of those components that were mentioned most frequently. The statistical data indicates the distribution within each scale and category. Further detail is provided in Sections 1 – 6 of this report.

NB: the numbers in each of the pie slices add up to more than 100% because students often mention more than one aspect of their experience in their answers, each of which is counted once. *(see Attachment Two for explanation on analysis and counting of comments)*

| Proportional distribution of comments | Focus of comments |
|---|---|
| **Best Practice**<br>  <br> | **Research Climate** 67%<br>***Research community***: Conferences, seminars, research culture/ group etc, publishing (30%)<br>***Work environment***: Challenging, welcoming, supportive, induction, respect (17%)<br>***Interaction with students***: Study related, social, support (9%)<br>**Overall Satisfaction** 51%<br>***Satisfaction with research***: Topic, contribution to field etc (20%)<br>***Flexibility of program***: Freedom, independence (23%)<br>**Graduate Attributes** 31%<br>***Research & Inquiry:*** Analytical, problem solving, critical thinking, research skills, expand knowledge (20%)<br>***Personal and intellectual autonomy***: learning to work independently, time management, confidence (7%)<br>**Quality of Supervision** 29%<br>***Supervisors***: Supervisor(s), feedback, meetings, understanding and empathy (25%)<br>**Quality of Infrastructure** 16%<br>***Facilities:*** Workspace, equipment, laboratories, buildings (9%) |
| **Needs improvement**<br>  <br> | **Quality of Infrastructure** 65%<br>***Facilities:*** Workspace, equipment, laboratories (31%)<br>***Funding***: for research, scholarships, grants, travel, conferences etc (20%)<br>**Research Climate** 41%<br>***Work environment***: Challenging, welcoming, supportive, induction, respect (15%)<br>***Research community***: Conferences, seminars, research culture/ group etc, publishing (12%)<br>***Interaction with students***: Study related, social, support (6%)<br>**Quality of Supervision** 23%<br>***Supervisors***: Supervisor(s), feedback on work (8%)<br>***Supervision process:*** Evaluation, training, general comments (8%)<br>***Management of candidature***: guidance, workload, APR (7%)<br>**Overall Satisfaction** 13%<br>**Graduate Attributes** 7%<br>***Research and inquiry:*** statistical, research and technical skills; analytical, problem solving, critical thinking (6%) |

*NB: It is important to remember, when looking at the results of the analysis of this data, that the absence of favourable comments on a particular aspect of research training does not reflect that this is not an area of best practice. Rather, it could be interpreted that the students were happy with their experiences, and prefer to focus on commenting about areas in need of improvement.*

## FOR MORE INFORMATION

***On the analysis and reporting of qualitative data***

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SREQ Faculty reports are at:
http:/ / sydney.edu.au/ learning/ evaluating/ research_higher_degree_reports.shtml

***On SREQ and how to interpret results***

Staff of the ITL are available to provide support to faculties in the interpretation of the SREQ data and the development of strategic responses to address any issues identified

Phone: + 61 2 9351 3725
Email: itl@sydney.edu.au

SREQ results and reports are at http:/ / www.itl.usyd.edu.au/ sreq/

# INTRODUCTION

## STUDENT RESEARCH EXPERIENCE QUESTIONNAIRE (SREQ)

In 2002 the Institute for Teaching and Learning (ITL) began collecting data for The University community on research higher degree students' perceptions of their research training experiences. This data is gathered each year using a survey specifically developed for this task, the "Student Research Experience Questionnaire" (SREQ). The purpose of the SREQ is to provide the University community with a basis for strategic, faculty level academic development and curriculum review to further enhance the quality of research higher degrees. The SREQ is based on a national survey of research higher degree students, the Postgraduate Research Experience Questionnaire (PREQ). Some of the information gathered by the SREQ survey also contributes to two of the University's Key Performance Indicators for research. These KPIs are the quality of Supervision, and Overall Satisfaction with the research higher degree.

The survey gathers data on students' perceptions of the quality and frequency of supervision, intellectual and social climate, infrastructure, approaches to research, and generic skills development in their research higher degree, as well as their perceptions of the administration and student support services. The ITL analyses this data and provides a range of reports to staff and students of the university through this web site.

Students are asked to respond to statements using a five point Likert Scale to indicate the extent to which they agree or disagree with each statement. As part of the questionnaires, students are also asked to comment on the following questions:

- *What are the best aspects of your research higher degree experience? Please explain why these aspects are good.*
- *What aspects are most in need of improvement? Please explain why*

Quantitative and qualitative data from the SREQ provide evidence of the success of University and Faculty initiatives to improve the overall student experience in general and the student experience of research training in particular.

## FOCUS OF THE REPORT

Based on the answers to the SREQ, this report seeks to provide an analysis of observable trends in the postgraduate research student experience in the Faculty of Science between 2006 and 2010. The report also provides detailed information on the key issues highlighted in the analysis of the 2010 SREQ qualitative data: by whole of Faculty and by Department/ School (as indicated in the SREQ Department/ School fields[2]).

*NB: As a general rule, only those aspects which receive over 5% of comments from the whole cohort (i.e. domestic and international combined) are considered significant enough to be included as specific issues in the report. Therefore within the report, results are only recorded where the total for the faculty is over 5% of comments received. Similarly, Departmental and School results below 6% are not included within the report.*

Information is arranged by the following areas of the research higher degree student experience: Quality of Supervision, Quality of Infrastructure, Research Climate, Graduate Attributes, and Overall Satisfaction, which, taken together, comprise the student experience of research training within the Faculty.

## FOCUS OF WRITTEN OBSERVATIONS FROM RESPONDENTS

By examining the foci of the students' comments in the 2010 SREQ, this report seeks to highlight areas that were of best practice in the students' experience, together with those that have been suggested as areas of improvement. The views of the research higher degree students, on their overall experience at the University, as received through the open response comments, are a valuable insight into what is important to them; what they consider to be areas of best practice; and what they consider are in need improvement.

It is important to remember, when looking at the results of the analysis of this data, that the absence of favourable comments on a particular aspect of research training does not reflect that this is not an area of best practice. Rather, it could be interpreted that the students were happy with their experiences, and prefer to focus on commenting about areas in need of improvement.

[2] See Attachment One for a list of Department/ Schools and number of respondents per Department/ School

## GLOSSARY

The following terms and phrases are used throughout the report

***SREQ*** Student Research Experience Questionnaire
Administered to postgraduate research students annually, during second semester

***Supervision Scale***
***Infrastructure Scale***
***Climate Scale***
***Generic Skills Scale***
***Overall Satisfaction Item***

The University of Sydney Student Research Experience Questionnaire (SREQ) is based upon the items included in the nationally administered Postgraduate Research Experience Questionnaire (PREQ). These items have been shown to cluster together to form factor scales:

- Supervision
- Infrastructure
- Climate
- Generic Skills
- Overall Satisfaction Item

Within the report, this naming convention is used to identify information relating to the analysis of the quantitative data (survey items)

***Faculty Scores***
***Percentage agreement***

SREQ item responses are combined and reported in terms of the proportions of students who agreed or disagreed that their research higher degree experience was positive in the areas of: Supervision; Generic Skills; Infrastructure; Climate; and Overall Satisfaction

***Quality of Supervision***
***Quality of Infrastructure***
***Research Climate***
***Graduate Attributes***
***Overall Satisfaction***

The University of Sydney Student Research Experience Questionnaire (SREQ) is based upon categories used in the SREQ Taxonomy:

- Quality of Supervision
- Quality of Infrastructure
- Research Climate
- Graduate Attributes
- Overall Satisfaction

Within the report, this naming convention is used as headings for each section of the report, and to identify information relating to the analysis of the qualitative data (written observations).

***Qualitative data***
***Focus of written observations***

Students' written observations received in response to open ended questions in the SREQ:

- What are the **best** aspects of your research higher degree experience? Please explain why these aspects are good
- What aspects are most in need of **improvement**? Please explain why

***Percentage of comments received***

The number of times an aspect is mentioned within written observations of respondents received from respondents is presented as a percentage of the total number of comments received from respondents to the SREQ in any particular year.

***Key issues***

As a general rule, only those aspects which receive over 5% of comments from the whole cohort (i.e. domestic and international combined; all respondents per degree) are considered significant enough to be included as key issues in the report.

## ATTACHMENTS

The following attachments are provided at the end of the report:

1 Statistical data: number of respondents to the SREQ by Faculty and by Department/ Institute
2 Analysis and counting of comments
3 SREQ Factors

# 1 QUALITY OF SUPERVISION

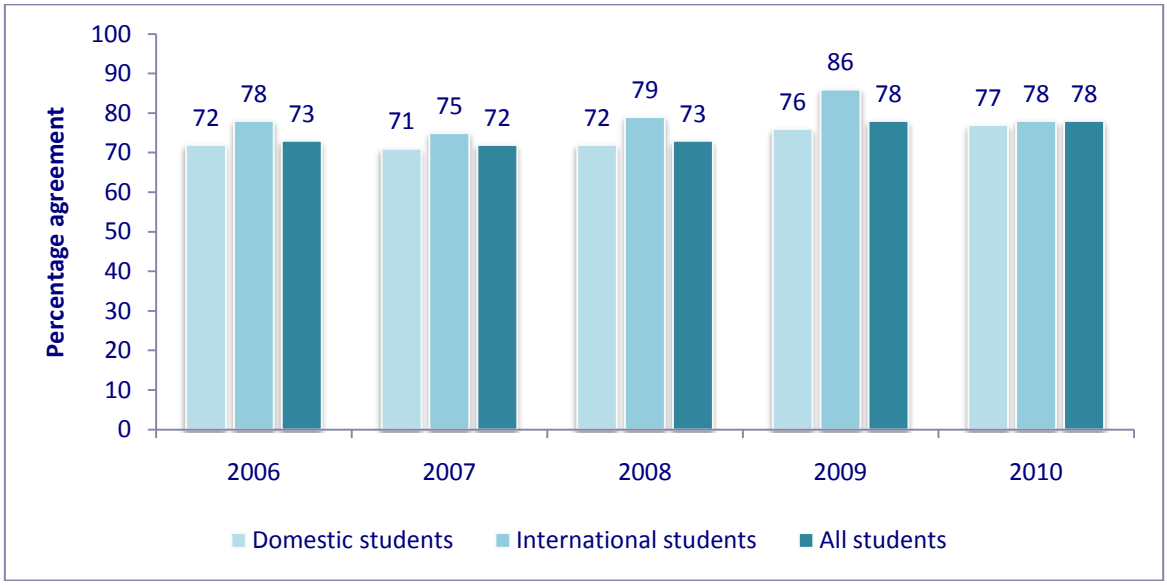
## 1.1 BACKGROUND INFORMATION

The *Supervision Scale* covers aspects of supervision including: supervision being available when needed; understanding by the supervisor(s) of difficulties; provision of additional information relevant to the thesis topic by the supervisor; provision of guidance in topic selection and refinement; provision of helpful feedback on progress; provision of good guidance in literature search; and overall satisfaction with quality of supervision.

## 1.2 COMPARATIVE RESULTS: QUANTITATIVE DATA: 2006 - 2010

The following graph shows the proportion of students who either agreed or strongly agreed with relevant Supervision Scale survey items in the SREQ between 2006 and 2010.

Figure 4: SREQ Supervision Scale: Percentage agreement results: 2006 - 2010




## 1.3 COMPARATIVE RESULTS: FOCUS OF WRITTEN OBSERVATIONS: 2006 – 2010

The following chart provides an indication of trends in the research higher degree student experience of the Quality of Supervision, as indicated in their responses to the open questions in the 2006 - 2010 SREQ. It demonstrates the relationship between areas of best practice, and areas in need of improvement. Results are reported as a percentage of the total number of comments received from all respondents who supplied written observations.

Figure 5: Quality of Supervision: Focus of written observations: 2006 - 2010

## 1.4 KEY ISSUES FOR RESEARCH HIGHER DEGREE STUDENTS (SREQ 2010)

### 1.4.1 Areas of best practice

| ***Quality of Supervision*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 20% | 33% | **27%** |
| Biological Sciences | 36% | 24% | **31%** |
| History and Philosophy of Science | | | **29%** |
| Psychology | 45% | 100% | **49%** |
| School of Chemistry | 13% | 9% | **12%** |
| School of Geosciences | 37% | 13% | **29%** |
| School of Mathematics and Statistics | | | **42%** |
| School of Molecular Bioscience | 35% | 13% | **28%** |
| School of Physics | 14% | 8% | **13%** |
| ***Faculty*** | ***31%*** | ***22%*** | ***29%*** |

| - ***Supervisor(s)*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 0% | 33% | **18%** |
| Biological Sciences | 32% | 24% | **29%** |
| History and Philosophy of Science | | | **29%** |
| Psychology | 39% | 100% | **44%** |
| School of Chemistry | 9% | 9% | **9%** |
| School of Geosciences | 30% | 13% | **24%** |
| School of Mathematics and Statistics | | | **38%** |
| School of Molecular Bioscience | 35% | 13% | **28%** |
| School of Physics | 9% | 8% | **9%** |
| ***Faculty*** | ***26%*** | ***22%*** | ***25%*** |

***Sample comments***

Domestic students

- Both my primary and associate supervisors are very supportive, and have helped me to overcome organisational and motivational struggles I had early in my degree. This improved my capacity to achieve my research goals. When addressing any problems, both supervisors have maintained very high standards that they expected from me, and this helped build my confidence and achieve a high quality of work that I was happy with
- The best aspects of my research degree is the freedom I am being given by my research supervisor who respects my ideas but also gives support and inputs along with guidance. This makes me feel empowered and possess a feeling of ownership in regard to my research topic and achievements
- My supervisor is fantastic- he is knowledgeable and approachable and takes every opportunity to mentor me, both in regards to my research and career progression

International students

- A good supervisor who is supportive without being overbearing. He is knowledgeable, enthusiastic and resourceful
- the support I get from my supervisor, and the guidance I get when I need support or things are not going so well
- My supervisor is amazing. She's always available (even at weird hours) and really supportive. She Trusts me, and gives me freedom in my research

### 1.4.2 Areas needing improvement

| ***Quality of Supervision*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 0% | 20% | **14%** |
| Biological Sciences | 0% | 31% | **13%** |
| History and Philosophy of Science | | | **14%** |
| Psychology | 27% | 40% | **28%** |
| School of Chemistry | 18% | 20% | **19%** |
| School of Geosciences | 30% | 27% | **29%** |
| School of Mathematics and Statistics | | | **14%** |
| School of Molecular Bioscience | 42% | 36% | **41%** |
| School of Physics | 13% | 11% | **12%** |
| ***Faculty*** | ***22%*** | ***25%*** | ***23%*** |

| - ***Supervisor(s)*** | Domestic | International | **All** |
|---|---|---|---|
| Biological Sciences | 0% | 19% | **8%** |
| Psychology | 7% | 20% | **8%** |
| School of Geosciences | 11% | 13% | **12%** |
| School of Molecular Bioscience | 15% | 27% | **18%** |
| ***Faculty*** | ***6%*** | ***13%*** | ***8%*** |

| - ***Supervision process)*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 0% | 20% | **14%** |
| Psychology | 14% | 0% | **13%** |
| School of Chemistry | 8% | 10% | **8%** |
| School of Geosciences | 11% | 7% | **10%** |
| School of Molecular Bioscience | 12% | 9% | **11%** |
| ***Faculty*** | ***8%*** | ***8%*** | ***8%*** |

| - ***Management of candidature*** | Domestic | International | **All** |
|---|---|---|---|
| History and Philosophy of Science | | | **14%** |
| Psychology | 7% | 20% | **8%** |
| School of Chemistry | 8% | 0% | **6%** |
| School of Geosciences | 7% | 7% | **7%** |
| School of Mathematics and Statistics | | | **10%** |
| School of Molecular Bioscience | 15% | 0% | **11%** |
| School of Physics | 9% | 0% | **7%** |
| ***Faculty*** | ***8%*** | ***4%*** | ***7%*** |

***Sample comments***

Domestic students

- Quality control of supervision. Frequent or available supervision does not equal good supervision and it is hard to provide that sort of feedback without repercussions
- Quality of the supervisors. They are gifted and capable academically, but not all supervisors are good leaders. For the process of accepting new academics into the university, I have not heard of anything that examines their leadership abilities. This is a significant problem in disciplines where supervisors often look after groups of 3 or more postgraduate students at a time

- * A set of very clear ethical guidelines and/or a statement by the University on appropriate student-supervisor relationships. * Support services for female PhD students. * Online documentation should be provided regarding difficulties that young female PhD students might face who are working under male supervisors. * The University should not ignore difficult subjects regarding male supervision of female students and the problems that might (and frequently do) arise. The University has a responsibility in this regard, and should provide some support and guidance for those facing problems of an ethical nature. Support and guidelines should be available not only for the student, but also for supervisors. It was disappointing that the University does not appear to have a clear code of ethics on appropriate student-supervisor relationships

International students

- better supervision is needed, they try to make us independent but they should monitor us more closely - if we had closer supervision it would mean we could solve problems more quickly and publish more papers
- The annual review process is constantly undergoing changes, though never improvements
- Mostly international students should be supervised in a special way

# 2 QUALITY OF INFRASTRUCTURE

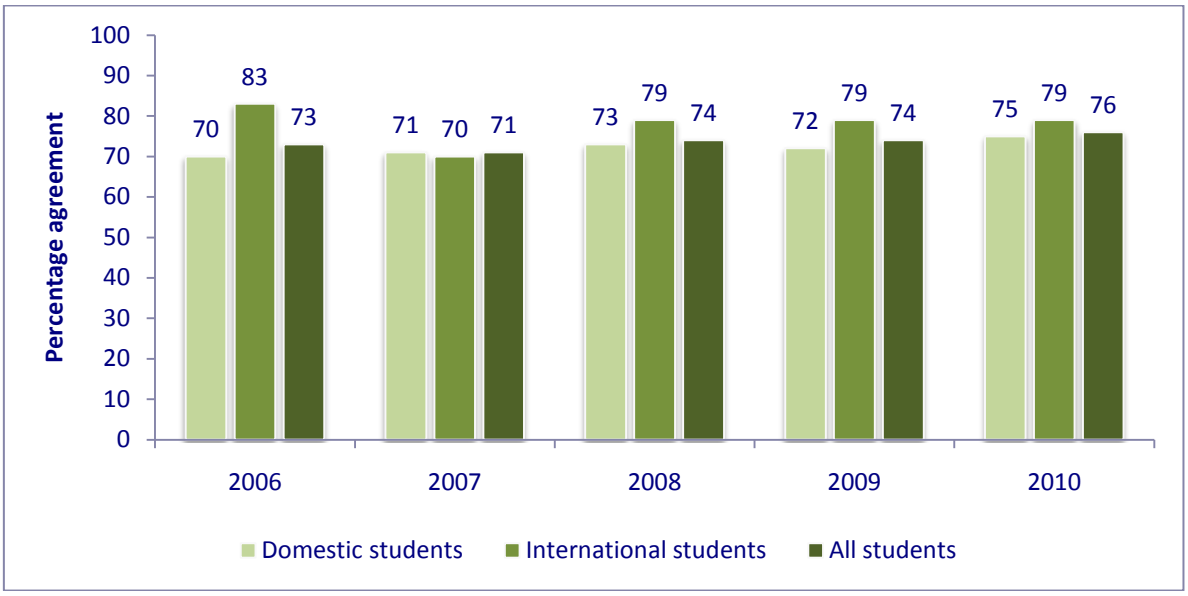
## 2.1 BACKGROUND INFORMATION

The *Infrastructure Scale* covers aspects of the infrastructure available to research students, including: access to a suitable working space; access to technical support; access to a common room; access to necessary equipment; access to computing facilities and resources; appropriate financial support; and overall satisfaction with the quality of services and facilities.

## 2.2 COMPARATIVE RESULTS: QUANTITATIVE DATA: 2006 - 2010

The following graph shows the proportion of students who either agreed or strongly agreed with Infrastructure Scale survey items in the SREQ between 2006 and 2010.

Figure 6: Quality of Infrastructure: Percentage agreement results: SREQ 2006 - 2010




## 2.3 COMPARATIVE RESULTS: FOCUS OF WRITTEN OBSERVATIONS: 2006 – 2010

The following chart provides an indication of trends in the research higher degree student experience of the Quality of Infrastructure, as indicated in their responses to the open questions in the 2006 – 2010 SREQ. It demonstrates the relationship between areas of best practice and areas in need of improvement. Results are reported as a percentage of the total number of comments received from all respondents who supplied written observations.

Figure 7: Quality of Infrastructure: Focus of written observations: SREQ 2006 - 2010

## 2.4 KEY ISSUES FOR RESEARCH HIGHER DEGREE STUDENTS (SREQ 2010)

### 2.4.1 Areas of best practice

| ***Quality of Infrastructure*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 0% | 33% | **18%** |
| History and Philosophy of Science | | | **14%** |
| Psychology | 29% | 0% | **27%** |
| School of Chemistry | 15% | 36% | **19%** |
| School of Geosciences | 0% | 20% | **7%** |
| School of Mathematics and Statistics | | | **8%** |
| School of Molecular Bioscience | 22% | 19% | **21%** |
| School of Physics | 19% | 17% | **18%** |
| ***Faculty*** | ***16%*** | ***18%*** | ***16%*** |

| - ***Facilities*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 0% | 50% | **27%** |
| Psychology | 14% | 0% | **13%** |
| School of Chemistry | 9% | 27% | **12%** |
| School of Geosciences | 0% | 20% | **7%** |
| School of Molecular Bioscience | 16% | 6% | **13%** |
| School of Physics | 9% | 8% | **9%** |
| ***Faculty*** | ***9%*** | ***13%*** | ***9%*** |

***Sample comments***

Domestic students

- Having a good working space where I am located with others who are at similar stages of their candidature is helpful. This enables me to discuss ideas, and normalise frustrations with processes or things that come up as a natural part of the research process
- financial support (APA scholarship) has made it possible to focus more research ability to work independently on won ideas - which increases the enjoyment of the research overall
- Having desk in office in the department so I can get to talk to academics and students whenever it is helpful to do so

International students

- I am an international student so able to use the expensive equipments around here which I would not have been able to use back in my home country and also being able to meet people from various cultures
- The library services are very good
- The facilities needed to carry out my research are well provided especially chemicals and technical support

### 2.4.2 Areas needing improvement

| ***Quality of Infrastructure*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 50% | 60% | **57%** |
| Biological Sciences | 91% | 38% | **69%** |
| History and Philosophy of Science | | | **71%** |
| Psychology | 75% | 60% | **73%** |
| School of Chemistry | 71% | 100% | **77%** |
| School of Geosciences | 52% | 27% | **43%** |
| School of Mathematics and Statistics | | | **57%** |
| School of Molecular Bioscience | 61% | 73% | **64%** |
| School of Physics | 63% | 56% | **61%** |
| ***Faculty*** | ***68%*** | ***56%*** | ***65%*** |

| - ***Funding and scholarships*** | Domestic | International | **All** |
|---|---|---|---|
| Biological Sciences | 26% | 13% | **21%** |
| History and Philosophy of Science | | | **29%** |
| Psychology | 29% | 0% | **27%** |
| School of Chemistry | 13% | 20% | **15%** |
| School of Geosciences | 19% | 7% | **14%** |
| School of Mathematics and Statistics | | | **24%** |
| School of Molecular Bioscience | 18% | 27% | **20%** |
| School of Physics | 19% | 44% | **24%** |
| ***Faculty*** | ***21%*** | ***19%*** | ***20%*** |

| - ***Facilities*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 50% | 20% | **29%** |
| Biological Sciences | 48% | 6% | **31%** |
| History and Philosophy of Science | | | **29%** |
| Psychology | 29% | 40% | **30%** |
| School of Chemistry | 39% | 70% | **46%** |
| School of Geosciences | 22% | 7% | **17%** |
| School of Mathematics and Statistics | | | **29%** |
| School of Molecular Bioscience | 39% | 36% | **39%** |
| School of Physics | 28% | 11% | **24%** |
| ***Faculty*** | ***33%*** | ***23%*** | ***31%*** |

***Sample comments***

Domestic students

- The things that most need improving are those pretty much out of my control. The Safety Committee in my School is being forced to adopt some incredibly short-sighted OH&S policies as mandated by the University administration. Unfortunately, I presume for litigious reasons, paperwork and box ticking seem to take precedence over addressing some more glaring breaches of safety. There have been several occasions where I have felt the labs here haven't been as safe to work in as they could be. Also, there are several scientific instruments in the School which are being neglected due to lack of funding for professional officers, who play a vital role in maintaining them. I was highly disappointed to discover the University prioritises rebranding itself, at a cost of tens of millions of dollars, over providing much-needed funding to look after infrastructure for research purposes. Shortage of funding in the School is impacting on my ability to access working instruments

- I am in an open-plan office, and other PhD students can be extremely distracting at times. There are no rules in place to stop people from bothering others, and as it is only students and no supervisors, some people don't get a lot of work done and nobody is there to call them up on it
- Currently we have no technician in charge of maintaining the powder diffractometer which is one of the most important pieces of equipment in our field. Whole weeks have been wasted because the machine would break down either because users are not receiving the appropriate training (or not receiving training at all) or because the machine is not undergoing any kind of maintenance work. For a piece of equipment so expensive and so vital to my research it is unacceptable that this has happened

International students

- More travel grant for the students to attend conference/gain access to special facilities. So far each PhD candidate is only qualified for 3 travel grant (one each year) and the money has to be divided among all the other students. Sometimes we only get a few hundreds which is not sufficient to travel overseas for conferences and to gain access to facilities
- The facilities provided are very poor. old pcs that are very slow on internet and programs, laboratory settings that are extremely dirty and old with non functioning equipment and very low standards overall, very slow ethics committee administration that brings all the research to be slow and the space available is limited so for this there are many dead times during the research to wait until appropriate space for me is available
- The Physics building I am sitting in is not in a good condition. Instead of refurbishing the foyer the school should have invested in insulation, modernized the bathroom and fixed the leak in the roof of my office that I have reported several times already

# 3 RESEARCH CLIMATE

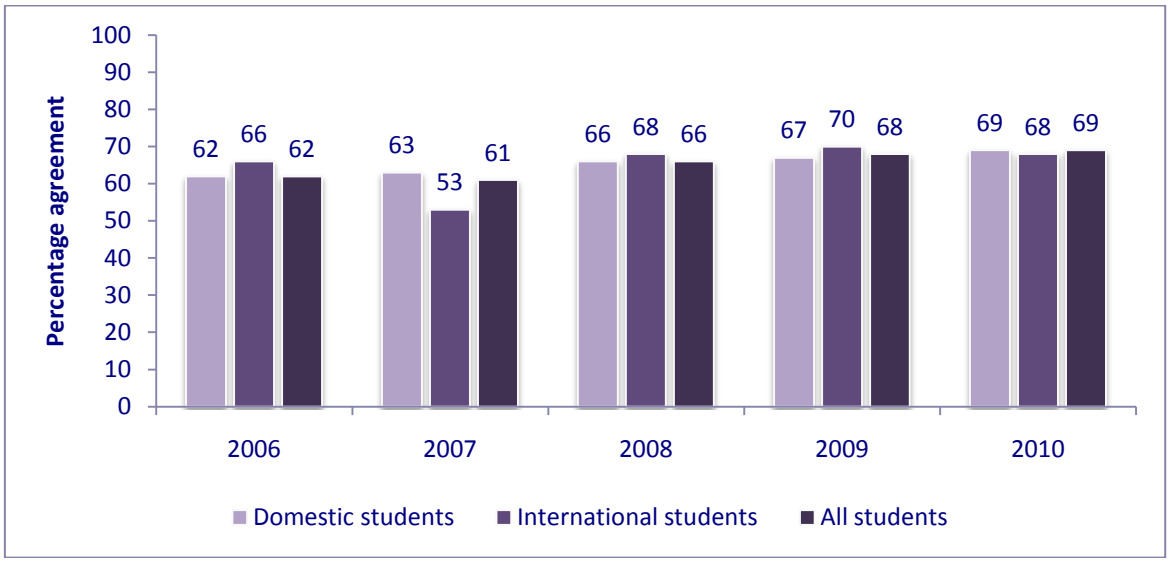
## 3.1 BACKGROUND INFORMATION

The *Climate Scale* covers aspects of the prevailing research climate in a students' school/ department, including: opportunities for social contact with other postgraduate students; integration into the school/ department community; opportunities to become involved in the broader research culture; perception of other research students as supportive; feelings of isolation within the school/ department; encouragement of interaction with other research students; provision of a good seminar programme; stimulation of personal work by the prevailing research ambience; provision of a supportive work environment; and feeling respected as a fellow researcher.

## 3.2 COMPARATIVE RESULTS: QUANTITATIVE DATA: 2006 - 2010

The following graph shows the proportion of students who either agreed or strongly agreed with Climate Scale survey items in the SREQ between 2006 and 2010.

Figure 8: Climate Scale: Percentage agreement results: SREQ 2006 - 2010




## 3.3 COMPARATIVE RESULTS: FOCUS OF WRITTEN OBSERVATIONS: 2006 – 2010

The following chart provides an indication of trends in the research higher degree student experience of Research Climate, as indicated in their responses to the open questions in the 2006 – 2010 SREQ. It demonstrates the relationship between areas of best practice and areas in need of improvement. Results are reported as a percentage of the total number of comments received from all respondents who supplied written observations.

Figure 9: Research Climate: Focus of written observations: SREQ 2006 - 2010

## 3.4 KEY ISSUES FOR RESEARCH HIGHER DEGREE STUDENTS (SREQ 2010)

### 3.4.1 Areas of best practice

| ***Research Climate*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 80% | 50% | **64%** |
| Biological Sciences | 68% | 53% | **62%** |
| History and Philosophy of Science | | | **86%** |
| Psychology | 100% | 100% | **100%** |
| School of Chemistry | 63% | 91% | **68%** |
| School of Geosciences | 57% | 53% | **56%** |
| School of Mathematics and Statistics | | | **33%** |
| School of Molecular Bioscience | 49% | 63% | **53%** |
| School of Physics | 56% | 83% | **62%** |
| ***Faculty*** | ***67%*** | ***67%*** | ***67%*** |

| - ***Research community/ culture*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 40% | 17% | **27%** |
| Biological Sciences | 21% | 24% | **22%** |
| History and Philosophy of Science | | | **57%** |
| Psychology | 30% | 20% | **30%** |
| School of Chemistry | 33% | 36% | **33%** |
| School of Geosciences | 30% | 27% | **29%** |
| School of Mathematics and Statistics | | | **21%** |
| School of Molecular Bioscience | 37% | 31% | **28%** |
| School of Physics | 26% | 58% | **33%** |
| ***Faculty*** | ***28%*** | ***33%*** | ***30%*** |

| - ***Work environment*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 20% | 0% | **9%** |
| Biological Sciences | 18% | 6% | **13%** |
| History and Philosophy of Science | | | **57%** |
| Psychology | 14% | 60% | **17%** |
| School of Chemistry | 20% | 36% | **23%** |
| School of Geosciences | 17% | 7% | **13%** |
| School of Mathematics and Statistics | | | **8%** |
| School of Molecular Bioscience | 16% | 13% | **15%** |
| School of Physics | 14% | 25% | **16%** |
| ***Faculty*** | ***17%*** | ***16%*** | ***17%*** |

| - ***Interaction with other research higher degree students*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 20% | 0% | **9%** |
| Biological Sciences | 21% | 12% | **18%** |
| Psychology | 12% | 20% | **13%** |
| School of Chemistry | 7% | 9% | **7%** |
| School of Geosciences | 7% | 20% | **11%** |
| School of Molecular Bioscience | 3% | 13% | **6%** |
| School of Physics | 9% | 0% | **7%** |
| ***Faculty*** | ***9%*** | ***10%*** | ***9%*** |

***Sample comments***

Domestic students

- I have been given the opportunity to interact with a diverse range of postgraduates and academics in my area of research. This has given me inspiration for my future work, and also the sense that I am part of a wider research community
- The best aspect is the active encouragement by the postgraduate coordinators to engage with areas of research not directly related to your own, so as to improve your ability to conduct interdisciplinary research or at least research that is informed from multiple psychological fields
- All the support and help available from fellow PhD students. Often talking with others can help solve experimental problems, and make you think about issues you did not consider previously

International students

- I have been given the opportunity and support by my department to interact with other researchers from other universities. This indeed broadens up my research network not only within my own department but beyond. Through this interaction, it enables me to exchange and learn the different experience and knowledge that we have from each other among the researchers
- The department provides opportunities for me to become involved in broader research culture
- The school itself (psych) is really supportive as well and is really welcoming and friendly environment

### 3.4.2 Areas needing improvement

| ***Research Climate*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 50% | 40% | **43%** |
| Biological Sciences | 83% | 13% | **54%** |
| History and Philosophy of Science | | | **29%** |
| Psychology | 39% | 40% | **39%** |
| School of Chemistry | 24% | 40% | **27%** |
| School of Geosciences | 52% | 53% | **52%** |
| School of Mathematics and Statistics | | | **29%** |
| School of Molecular Bioscience | 48% | 27% | **43%** |
| School of Physics | 44% | 56% | **46%** |
| ***Faculty*** | ***43%*** | ***36%*** | ***41%*** |

| - ***Work environment*** | Domestic | International | **All** |
|---|---|---|---|
| Biological Sciences | 26% | 0% | **15%** |
| History and Philosophy of Science | | | **14%** |
| Psychology | 17% | 0% | **16%** |
| School of Chemistry | 13% | 0% | **10%** |
| School of Geosciences | 33% | 7% | **24%** |
| School of Mathematics and Statistics | | | **10%** |
| School of Molecular Bioscience | 21% | 0% | **16%** |
| School of Physics | 13% | 33% | **17%** |
| ***Faculty*** | ***18%*** | ***5%*** | ***15%*** |

| - ***Research community/ culture*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 0% | 40% | **29%** |
| Biological Sciences | 26% | 13% | **21%** |
| Psychology | 10% | 20% | **11%** |
| School of Chemistry | 5% | 10% | **6%** |
| School of Geosciences | 15% | 27% | **19%** |
| School of Mathematics and Statistics | | | **10%** |
| School of Molecular Bioscience | 9% | 9% | **9%** |
| School of Physics | 9% | 11% | **10%** |
| ***Faculty*** | ***11%*** | ***16%*** | ***12%*** |

| - ***Interaction with other research higher degree students*** | Domestic | International | **All** |
|---|---|---|---|
| Biological Sciences | 13% | 0% | **8%** |
| History and Philosophy of Science | | | **14%** |
| Psychology | 10% | 20% | **11%** |
| School of Physics | 9% | 0% | **7%** |
| ***Faculty*** | ***6%*** | ***8%*** | ***6%*** |

***Sample comments***

Domestic students

- I think the current research culture in the school and across departments are highly resistant to previous attempts to increase social interactions. Students are not necessarily interested in joint seminars or department-provided sharing services. However, they will likely to agree to Friday-night beers if not otherwise occupied. In these four years I have also never managed to make it to *any* of the Ph.D. Orientation workshops/seminar/Day/whatever they are called. The timing of these "survival tips" has never coincided with my timetable (I volunteer Thursday mornings) or my trips (I was overseas for conference X, or visiting family). That was part of the reason why I'm taking 4 years for this degree instead of three
- Although out department provides opportunities for students to integrate and share research knowledge and experiences, I don't feel that it supports or respects its postgrad students as much as it should
- There should be more communication and collaboration between research groups. I find it odd that there are several vision research groups which rarely seem to talk to each other or share ideas. It may be something to do with the physical structure of the building, but I feel there should be more informal and open discussions about research between the groups

International students

- I work in a very small group (4 people) and feel nearly no connection to other researchers anywhere else in the uni. I am not sure if this is because I'm missing out on social/networking opportunities or if there are so few other researchers working on my area

- Student-student interaction. There are not enough organized opportunities for postgraduate students to meet and discuss progress and to widen the possibilities of future career direction. Far to many students get caught up in their project and fail to see opportunities outside their specialized field or even worse outside of their institution or lab. This is particularly true at SMB. Need a lot more cross-disciplinary interaction as well. Seminars should also be something supervisors should strongly encourage their students to attend. It is far too easy for students not to attend if the supervisor doesn't make it a point to nudge them
- the school should provide more opportunities for candidates to join various events in multiple topic. omnifarious knowledge is the most important aspect in research

# 4 GRADUATE ATTRIBUTES

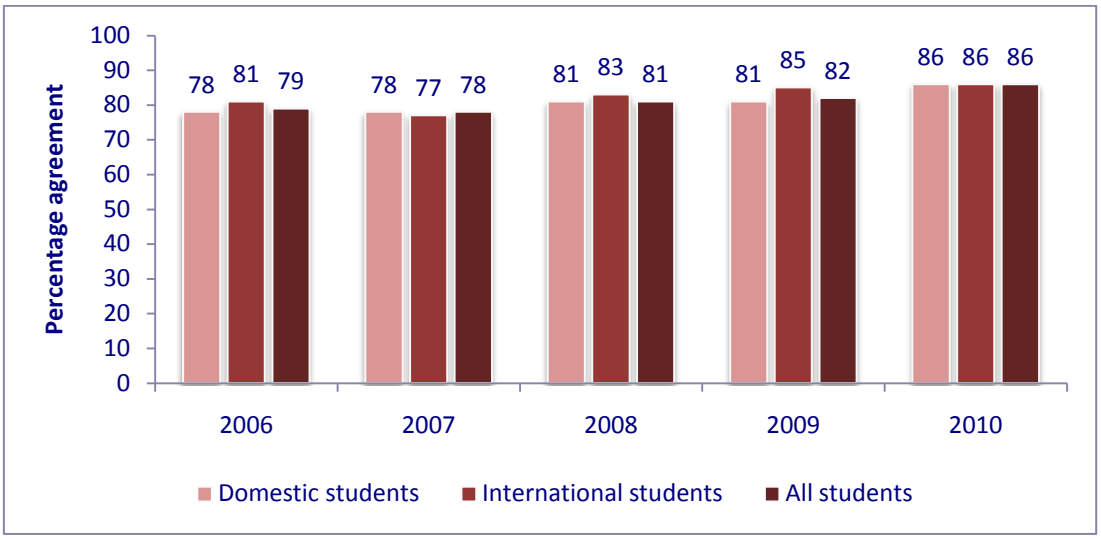
## 4.2 BACKGROUND INFORMATION

The *Generic Skills* scale reflects the extent to which students perceive their studies to have fostered the development of the generic skills recognised by the university as being a valuable outcome of university education, in addition to discipline specific skills and knowledge. Skills include problem solving; oral and written communication; development of ideas and their written presentation; collaboration with other researchers; analytical skills; planning; confidence in tackling unfamiliar problems; and ability to learn independently

## 4.3 COMPARATIVE RESULTS: QUANTITATIVE DATA: 2006 - 2010

The following graph shows the proportion of students who either strongly agreed or agreed with Generic Skills Scale survey items in the SREQ between 2006 and 2010.

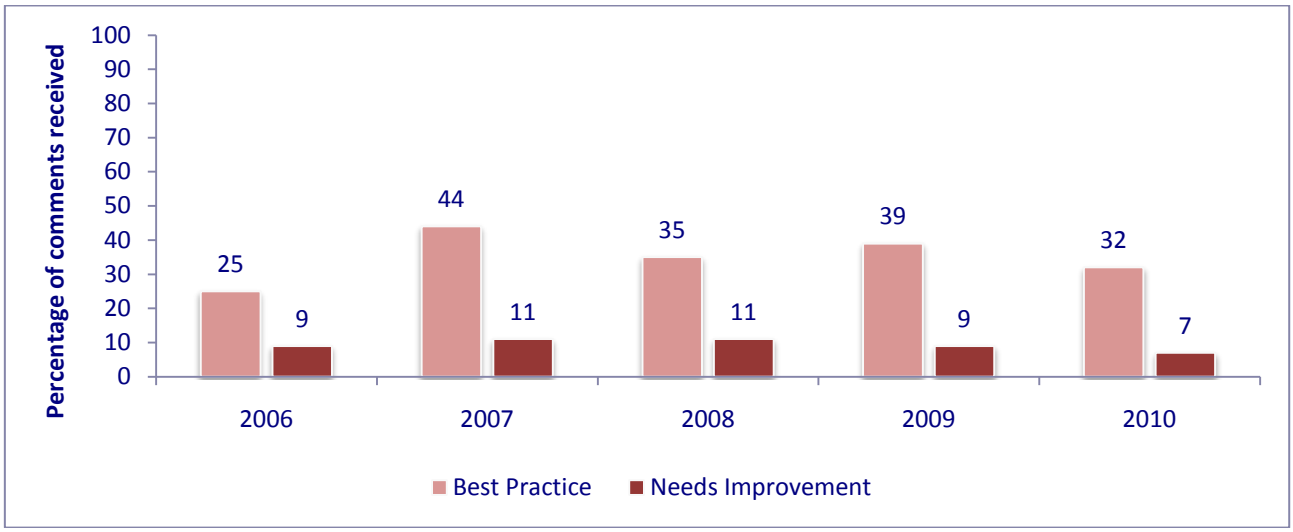
Figure 10: Generic Skills: Percentage agreement results: SREQ 2006 - 2010




## 4.4 COMPARATIVE RESULTS: FOCUS OF WRITTEN OBSERVATIONS: 2006 – 2010

The following chart provides an indication of trends in the research higher degree student experience relating to the enhancement of University Graduate Attributes, as indicated in their responses to the open questions in the 2006 – 2010 SREQ. It demonstrates the relationship between areas of best practice and areas in need of improvement. Results are reported as a percentage of the total number of comments received from all respondents who supplied written observations.

Figure 11: Graduate Attributes: Focus of written observations: 2006 - 2010



## 4.4 KEY ISSUES FOR RESEARCH HIGHER DEGREE STUDENTS (SREQ 2010)

### 4.4.1 Areas of best practice

| ***Graduate Attributes*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 60% | 33% | **45%** |
| Biological Sciences | 50% | 88% | **64%** |
| History and Philosophy of Science | | | **57%** |
| Psychology | 26% | 0% | **24%** |
| School of Chemistry | 15% | 36% | **19%** |
| School of Geosciences | 30% | 33% | **31%** |
| School of Mathematics and Statistics | | | **17%** |
| School of Molecular Bioscience | 27% | 50% | **34%** |
| School of Physics | 26% | 17% | **24%** |
| ***Faculty*** | ***27%*** | ***46%*** | ***31%*** |

| - ***Research and inquiry*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 60% | 33% | **45%** |
| Biological Sciences | 32% | 53% | **40%** |
| History and Philosophy of Science | | | **43%** |
| Psychology | 15% | 0% | **14%** |
| School of Chemistry | 7% | 18% | **9%** |
| School of Geosciences | 17% | 20% | **18%** |
| School of Mathematics and Statistics | | | **13%** |
| School of Molecular Bioscience | 19% | 38% | **25%** |
| School of Physics | 14% | 17% | **15%** |
| ***Faculty*** | ***16%*** | ***32%*** | ***20%*** |

| - ***Personal and intellectual autonomy*** | Domestic | International | **All** |
|---|---|---|---|
| Biological Sciences | 7% | 24% | **13%** |
| History and Philosophy of Science | | | **14%** |
| Psychology | 6% | 0% | **6%** |
| School of Chemistry | 7% | 9% | **7%** |
| School of Geosciences | 3% | 13% | **7%** |
| School of Mathematics and Statistics | | | **8%** |
| School of Molecular Bioscience | 5% | 13% | **8%** |
| ***Faculty*** | ***6%*** | ***11%*** | ***7%*** |

***Sample comments***

Domestic students

- The ability to work on a research project continuously over a number of years allows me to gain an understanding on how to structure and carry out a research project. The degree has provided many opportunities for me to present my work in front of a variety of scientific audiences, which will be an invaluable skill in my scientific career. The degree has also given me a good grasp of the various written skills required to work as a researcher
- I have enjoyed thinking independently and critically about a subject, I believe I will apply this skill in many contexts
- I am encouraged to devise my own research path, which I believe is good because I will learn how to think/plan independently

International students

- Development of writing and speaking skills in English. Develop a research that will contribute to solve practical problems. Development of analytical/statistical skills. Opportunity to meet/integrate with researchers from other countries
- Thus, my PhD experience has augmented my creativity with respect to writing, presentation, and also a nuanced analysis of the research question
- Learning to do your own research. This helps me become independent to be able to carry on future research by myself

### 4.4.2 Areas needing improvement

| ***Graduate Attributes*** | Domestic | International | **All** |
|---|---|---|---|
| Biological Sciences | 9% | 31% | **18%** |
| Psychology | 7% | 0% | **6%** |
| School of Chemistry | 8% | 0% | **6%** |
| School of Geosciences | 4% | 13% | **7%** |
| School of Molecular Bioscience | 6% | 18% | **9%** |
| ***Faculty*** | ***5%*** | ***12%*** | ***7%*** |

| - ***Research and inquiry*** | Domestic | International | **All** |
|---|---|---|---|
| Biological Sciences | 4% | 13% | **8%** |
| Psychology | 7% | 0% | **6%** |
| School of Chemistry | 8% | 0% | **6%** |
| School of Geosciences | 4% | 13% | **7%** |
| School of Molecular Bioscience | 6% | 18% | **9%** |
| ***Faculty*** | ***5%*** | ***8%*** | ***6%*** |

***Sample comments***

Domestic students

- Statistical consulting: a dedicated person who's job is to help students with their statistical analysis (most universities have this!)
- Training in qualitative research would be beneficial as we don't really receive this and I am doing a qualitative project
- Not enough support in terms of planning and time management, how to write a thesis/dissertation, how to give a good presentation, in short, how to finish your PhD. I have been to some learning centre courses in the past which were very helpful, but I feel the school/ faculty could do more. Also, maybe a support group service to discuss issues such as depression, anxiety, procrastination etc. associated with doing research

International students

- Statistical skills, because they are basic to design good experiments. Ability to write good grant proposals (it is important for the development independence of my researcher)
- Written, analytical and presentation skills would help me
- Developing my English particularly listening and speaking skills so that I could better express my ideas, discuss research related issues with others, and learn things faster

# 5 OVERALL SATISFACTION

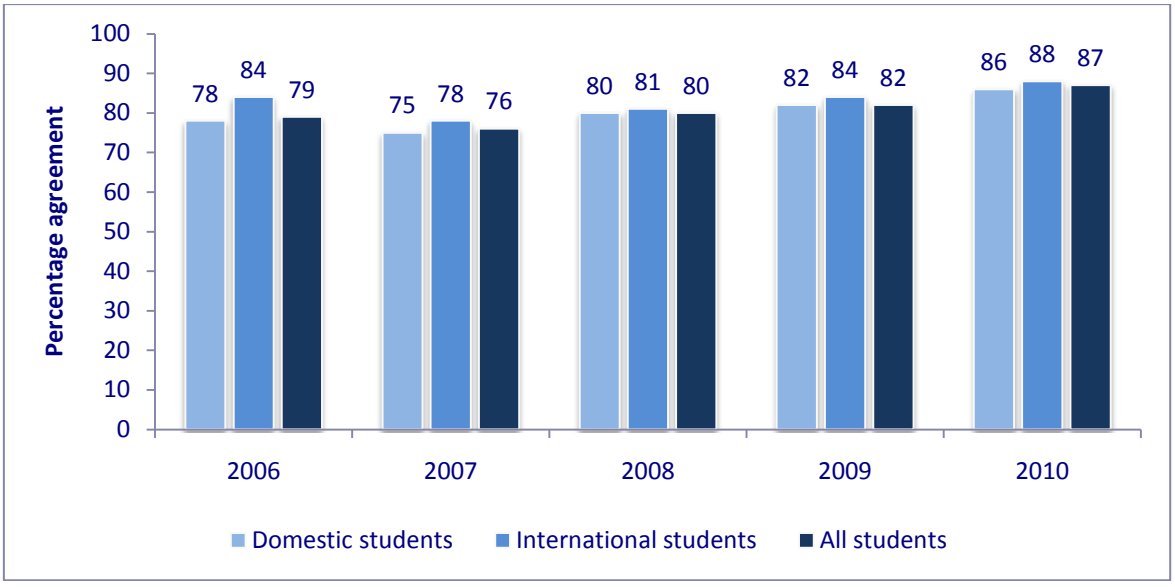
## 5.1 BACKGROUND INFORMATION

This single item asks students about their overall level of satisfaction with their research higher degree experience. In the analysis of the qualitative data, additional aspects, which are not covered in other areas of the survey, but which contribute to the overall satisfaction of the research higher degree student experience area included e.g. satisfaction with research, flexibility of programme, quality of degree (pressure to complete, coursework, field work, overseas research), and reputation of the university/ faculty.

## 5.3 COMPARATIVE RESULTS: QUANTITATIVE DATA: 2006 - 2010

The following graph shows the proportion of students who either strongly agreed or agreed with the Overall Satisfaction item in the SREQ between 2006 and 2010.

Figure 12: Overall Satisfaction Item: Percentage agreement results: SREQ 2006 - 2010




## 5.4 COMPARATIVE RESULTS: FOCUS OF WRITTEN OBSERVATIONS: 2006 – 2010

The following chart provides an indication of trends in the research higher degree student experience aspects which fall within the remit of Overall Satisfaction, as indicated in their responses to the open questions in the 2006 – 2010 SREQ. It demonstrates the relationship between areas of best practice and areas in need of improvement. Results are reported as a percentage of the total number of comments received from all respondents who supplied written observations.

Figure 13: Overall Satisfaction: Focus of written observations: SREQ 2006 - 2010

## 5.4 KEY ISSUES FOR RESEARCH HIGHER DEGREE STUDENTS (SREQ 2010)

### 5.4.1 Areas of best practice

| ***Overall Satisfaction*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 20% | 17% | **18%** |
| Biological Sciences | 57% | 59% | **58%** |
| History and Philosophy of Science | | | **43%** |
| Psychology | 47% | 0% | **44%** |
| School of Chemistry | 50% | 36% | **47%** |
| School of Geosciences | 67% | 47% | **60%** |
| School of Mathematics and Statistics | | | **46%** |
| School of Molecular Bioscience | 49% | 50% | **49%** |
| School of Physics | 70% | 42% | **64%** |
| ***Faculty*** | ***54%*** | ***43%*** | ***51%*** |

| - ***Satisfaction with research*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 0% | 17% | **9%** |
| Biological Sciences | 18% | 35% | **24%** |
| History and Philosophy of Science | | | **14%** |
| Psychology | 15% | 0% | **14%** |
| School of Chemistry | 13% | 0% | **11%** |
| School of Geosciences | 27% | 13% | **22%** |
| School of Mathematics and Statistics | | | **29%** |
| School of Molecular Bioscience | 16% | 13% | **15%** |
| School of Physics | 40% | 33% | **30%** |
| ***Faculty*** | ***21%*** | ***17%*** | ***20%*** |

| - ***Flexibility of programme*** | Domestic | International | **All** |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 20% | 0% | **9%** |
| Biological Sciences | 39% | 18% | **31%** |
| History and Philosophy of Science | | | **29%** |
| Psychology | 18% | 0% | **17%** |
| School of Chemistry | 33% | 18% | **30%** |
| School of Geosciences | 30% | 7% | **22%** |
| School of Mathematics and Statistics | | | **13%** |
| School of Molecular Bioscience | 22% | 38% | **26%** |
| School of Physics | 26% | 8% | **22%** |
| ***Faculty*** | ***25%*** | ***17%*** | ***23%*** |

***Sample comments***

Domestic students

- I enjoy the work and feel very fortunate to have the opportunity to do research on a topic I find so interesting and stimulating
- It is also fantastic for graduate students to have the opportunity to visit another lab overseas to do a research project, or attend a short course at an overseas institution- I have benefited from both of these experiences and they added a lot to the quality of my PhD

- Also the flexibility to take the project in which ever direction I choose. This way it makes it feel like my decisions are influencing the outcome and making a difference/improving upon pre-existing ideas

International students

- The independence to do the research you want to do, because I like to do my own things
- Meeting a lot of local people in the fieldwork expends your knowledge beyond what written in the textbook. At the same time, you can learn about reality and new skills to cope with unexpected issues and events
- the best part is I am getting to do what I like and that it will have the help me and the field I am working in the future or so I hope

### 5.4.2 Areas needing improvement

| ***Overall Satisfaction*** | Domestic | International | **All** |
|---|---|---|---|
| Biological Sciences | 9% | 13% | **10%** |
| History and Philosophy of Science | | | **14%** |
| Psychology | 8% | 0% | **8%** |
| School of Chemistry | 26% | 0% | **21%** |
| School of Geosciences | 15% | 27% | **19%** |
| School of Mathematics and Statistics | | | **19%** |
| School of Molecular Bioscience | 12% | 18% | **14%** |
| School of Physics | 9% | 11% | **10%** |
| ***Faculty*** | ***13%*** | ***13%*** | ***13%*** |

***Sample comments***

Domestic students

- The clinical psychology registration process. I have to wait at least three months if not more for my thesis to be examined and this delays my ability to gain registration and find employment...despite all clinical training and coursework components of the degree being completed
- Also more project autonomy in the Sciences (more problem for colleagues than me). Gives more academic autonomy to postgraduate students
- Training/coaching for postgraduate research, particularly PhD. There is a lot of technique and tips, know-how etc. to learn which I think should be formally taught rather than left to happen as it seems to be now in the school of Geosciences

International students

- The structure in the PhD program. There is hardly anything at the moment, which makes it easy to 'float'
- Maybe to provide more classes/ seminars/tutorials to improve communication and writing skills especially for non-English speakers
- Support, particularly for international students, to explore archival materials. Lack of available funds and lack of support for international tuition has made me rush through this degree because of the cost -- which ultimately affects the quality of my thesis and the university's reputation for excellence and contributions by foreign students attending the university

# ATTACHMENT ONE: STATISTICAL DATA

## 1 QUANTITATIVE DATA ANALYSIS

| ***Number of research higher degree students surveyed/ enrolled 2006 – 2010*** | | | | | |
|---|---|---|---|---|---|
| | *2006* | *2007* | *2008* | *2009* | *2010* |
| | n= | n= | n= | n= | n= |
| Total | 590 | 544 | 594 | 653 | 689 |

| ***Number of respondents to the SREQ 2006 – 2010*** | | | | | |
|---|---|---|---|---|---|
| | *2006* | *2007* | *2008* | *2009* | *2010* |
| | n= | n= | n= | n= | n= |
| Domestic students | 275 | 272 | 341 | 300 | 367 |
| International students | 56 | 57 | 81 | 80 | 110 |
| **Total** | **331** | **329** | **422** | **380** | **477** |
| *% who responded* | *56%* | *60%* | *71%* | *58%* | *69%* |

## 2 QUALITATIVE DATA ANALYSIS

### 2.1 Faculty level: 2006 - 2010

The analysis of the qualitative data is based on responses to the open questions received from **ALL** respondents to the SREQ from the Faculty of Science.

| ***Number of respondents who answered the open questions SREQ 2006 – 2010*** | | | | | | |
|---|---|---|---|---|---|---|
| | *Date of survey* | *2006* | *2007* | *2008* | *2009* | *2010* |
| | | n= | n= | n= | n= | n= |
| *Areas of best practice* | Domestic students | 222 | 224 | 257 | 216 | 282 |
| | International students | 45 | 59 | 71 | 70 | 87 |
| | Total | **267** | **283** | **328** | **286** | **369** |
| | *% who provided comments* | *81%* | *86%* | *78%* | *75%* | *77%* |

| | | | | | | |
|---|---|---|---|---|---|---|
| *Areas of improvement* | Domestic students | 203 | 210 | 208 | 184 | 239 |
| | International students | 40 | 50 | 56 | 65 | 75 |
| | Total | **243** | **260** | **264** | **249** | **314** |
| | *% who provided comments* | *73%* | *79%* | *63%* | *66%* | *66%* |

### 2.2 Department/ School level: 2010

The analysis of the qualitative data is based on responses to the open questions received from respondents to the SREQ from each Department/ School[3] within the Faculty of Science.

The tables on the following pages show the distribution of comments received from research higher degree students who provided written observations in the SREQ.

The tables should be read in conjunction with Note 3: Reliability of qualitative data.

[3] This information was provided by the ITL with the SREQ qualitative data and is taken from FlexSis. It refers to the Department/ School in which the student is enrolled.

### 2.2.1 Areas of best practice

| Department/ School | Domestic | International | All |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 5 | 6 | 11 |
| Biological Sciences | 28 | 17 | 45 |
| History and Philosophy of Science | 4 | 3 | 7 |
| Psychology | 66 | 5 | 71 |
| School of Chemistry | 46 | 11 | 57 |
| School of Geosciences | 30 | 15 | 45 |
| School of Mathematics and Statistics | 23 | 1 | 24 |
| School of Molecular Bioscience | 37 | 16 | 53 |
| School of Physics | 43 | 12 | 55 |
| Science Faculty | 0 | 1 | 1 |

### 2.2.1 Areas needing improvement

| Department/ School | Domestic | International | All |
|---|---|---|---|
| Australian Centre for Microscopy and Microanalysis | 2 | 5 | 7 |
| Biological Sciences | 23 | 16 | 39 |
| History and Philosophy of Science | 4 | 3 | 7 |
| Psychology | 59 | 5 | 64 |
| School of Chemistry | 38 | 10 | 48 |
| School of Geosciences | 27 | 15 | 42 |
| School of Mathematics and Statistics | 21 | 0 | 21 |
| School of Molecular Bioscience | 33 | 11 | 44 |
| School of Physics | 32 | 9 | 41 |
| Science Faculty | 0 | 1 | 1 |

## 3 RELIABILITY OF QUALITATIVE DATA

The following information on the reliability of statistical data in the above tables should be taken into consideration when reading this report:

Where the number of respondents is less than 5, results are excluded from the report as they are likely to be unreliable. In these cases, results from the department are reported for the whole cohort (domestic and international combined). In the case of the Science Faculty respondent, results of the analysis are not reported separately, but subsumed into the overall total.

Where the number of respondents is between 5 and 20 results should be viewed with caution. The minimum sample size recommended for statistical analysis is 20.

# ATTACHMENT TWO: NOTES ON ANALYSIS AND COUNTING OF COMMENTS

## 1 ANALYSIS OF COMMENTS

The components of categories and sub-categories used in the analysis of qualitative data are based on:

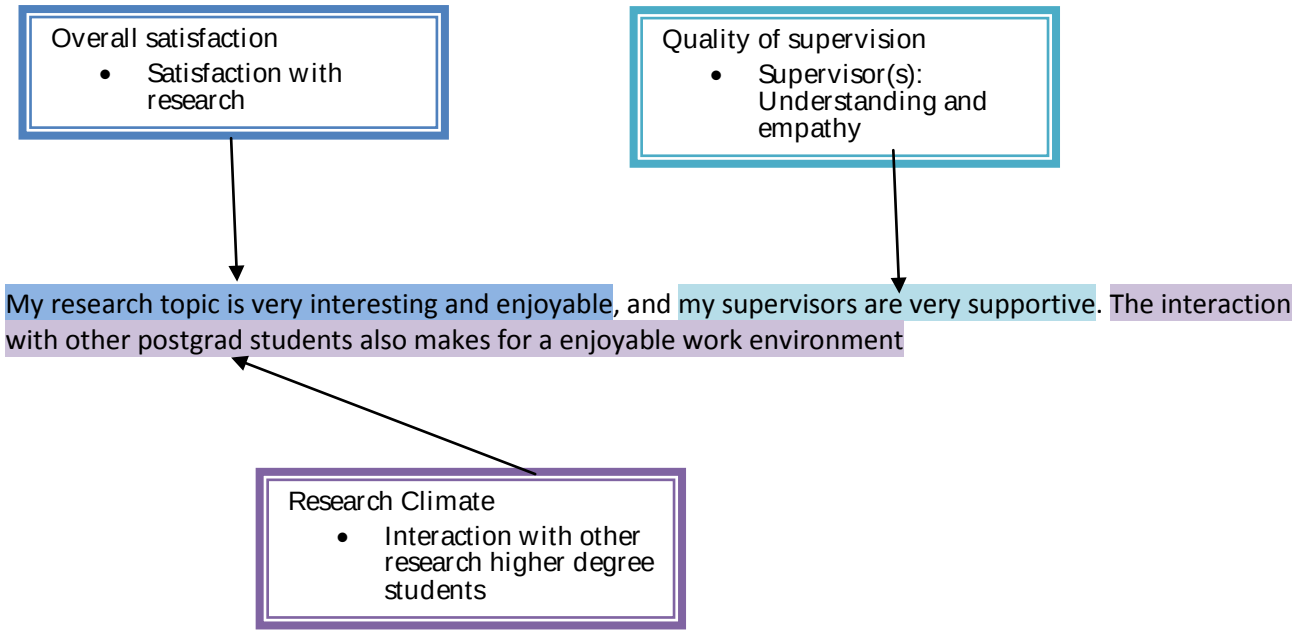
- Characteristics that define the area of the student experience
- SREQ survey items
- recurring themes in students' comments and have been developed over many years of analysing qualitative data from students' surveys.

Together, they represent the range of features of each aspect which are considered to be essential to student satisfaction with their research training experience

## 2 COUNTING OF COMMENTS

Each comment is analysed according to the *Taxonomy for analysing qualitative data from the SREQ*, which is based on the Factors used in the SREQ. Based on the premise that a comment is what is written by an individual respondent in response to one of the open response questions, and a tally in the statistics being a specific phrase or sentence referring to one aspect of the student experience, the total number of times an aspect is mentioned in any one set of comments is calculated as a percentage of comments received in the year of the survey. As a general rule, only those aspects which receive over 5% of comments from the whole cohort (i.e. domestic and international combined) are considered significant enough to be included as specific issues in the report.

For example, the following comment is counted as ONE COMMENT RECEIVED; but as it is mentioned in Research Climate (Interaction with other research higher degree students); Overall Satisfaction (Satisfaction with research) and Supervision (Supervisor; Understanding and empathy), each of the aspects mentioned is counted ONCE i.e. 3 aspects in one comment



# ATTACHMENT TWO: SREQ SCALES: COVERAGE OF QUANTITATIVE AND QUALITATIVE DATA

The University of Sydney Student Research Experience Questionnaire (SREQ) is based upon the items included in the nationally administered Postgraduate Research Experience Questionnaire (PREQ). These items have been shown to cluster together to form factor scales: Supervision, Climate, Infrastructure, and Generic Skills. These items, together with recurring themes in students' comments are used as the basis for categories, sub-categories and components for the analysis of qualitative data. This attachments lists the relevant survey items and sub-categories and components used in the analysis of qualitative and quantitative data from the SREQ.

## 1 SUPERVISION SCALE/ QUALITY OF SUPERVISION

### 1.1 SREQ Survey items

1 Supervision is available when I need it
5 My supervisor(s) make(s) a real effort to understand difficulties I face
13 My supervisor(s) provide(s) me with additional information relevant to my topic
18 I am given good guidance in topic selection and refinement
22 My supervisor(s) provide(s) helpful feedback on my progress
26 I have received good guidance in my literature search
36 Overall, I am satisfied with the quality of my supervision

### 1.2 Qualitative data analysis

There are 4 sub-categories within *Quality of Supervision*, against which students comments are analysed. Each of these sub-categories may be further broken down into relevant aspects (or components) of the research student experience of Supervision. The components of these sub-categories are based on the SREQ survey items together with recurring themes in students' comments:

- Supervisor(s) *(supervisor/ associate supervisor; usefulness of sessions with; availability and frequency of meetings with; feedback on work; understanding and empathy)*
- Supervision processes within faculty *(general comments on supervision; evaluation of supervisors by faculty; training)*
- Management of Candidature *(guidance on thesis, literature review; topic etc; workload; progress reports)*
- IP and plagiarism

## 2 INFRASTRUCTURE SCALE/ QUALITY OF INFRASTRUCTURE

### 2.1 SREQ Survey items

2 I have access to a suitable working space
6 I have good access to the technical support I need
10 I have access to a common room or a similar type of meeting place
12 I am able to organise good access to necessary equipment
19 I have good access to computing facilities and services
28 There is appropriate financial support for research activities
35 Overall I am satisfied with the quality of the services and facilities

### 2.2 Qualitative data analysis

There are 7 sub-categories within *Quality of Infrastructure*, against which students comments are analysed. Each of these sub-categories may be further broken down into relevant aspects (or components) of the research students' perceptions of the quality of infrastructure. The components of these sub-categories are based on the SREQ survey items together with recurring themes in students' comments.

- Administration (*enrolment and admission; communication between faculty and students; general comments on administration (faculty and university); postgraduate coordinator*)
- Facilities (*PGARC*; *common room; workspace, buildings, etc; computer hardware and software; equipment; external facilities; transport and parking*)
- Finance and funding (*funding for resources, equipment etc; scholarships and grants; travel grants*)
- Research resources (*provided by faculty; provided by internal and external libraries and archive centres*)
- Student support services (*Ethics Office; Research Office; International Office etc*)
- Support (*IT; technical; laboratory*)

# 3 CLIMATE SCALE/ RESEARCH CLIMATE

## 3.1 SREQ Survey items

3 The department / school provides opportunities for social contact with other postgraduate students
8 I feel integrated into the department's / school's community
15 The department / school provides opportunities for me to become involved in the broader research culture
16 I feel that other postgraduate students in my department / school are supportive
20 I tend to feel isolated within this department / school
23 Interaction with other postgraduate students is actively encouraged in this department / school
24 A good seminar program for postgraduate students is provided
25 The research ambience in the department / school or faculty stimulates my work
29 I feel that this department / school provides a supportive working environment
31 I feel respected as a fellow researcher within my department / school

## 3.2 Qualitative data analysis

There are 6 sub-categories within *Research Climate*, against which students comments are analysed. Each of these sub-categories may be further broken down into relevant aspects (or components) of the student experience of the prevailing research climate within the faculty. The components of these sub-categories are based on the SREQ survey items together with recurring themes in students' comments.

- Social inclusion (*cultural diversity; equity, discrimination, and harassment*)
- Research community (*general comments; faculty seminars, workshops, and discussion groups; networking/ collaborating; participation in conferences; opportunities for and encouragement to publish*)
- Work environment (*challenging and stimulating; induction/ orientation programme; integration into faculty/ department/ school; isolation (emotional); respect as fellow researcher; supportive environment; support for part-time , distance, international students*)
- Interaction with other research higher degree students (*academic; social; support of peers*)
- Location and physical environment *(location of institute etc; location of student where this affects experience e.g. interstate; physical structure of buildings e.g. state of repair*
- Career preparation (*academic or research (e.g. availability of tutoring, lecturing); general comments*)

# 4 GENERIC SKILLS SCALE/ GRADUATE ATTRIBUTES

## 4.1 SREQ Survey items

4 My research has further developed my problem-solving skills
7 Doing my research has helped to develop my written communication skills
9 I have learned to develop my ideas and present them in my written work
11 As a result of my research, I have developed the ability to work collaboratively with other researchers
14 My research has sharpened my analytical skills
17 Doing my research has helped to develop my oral communication skills
21 Doing my research has developed my ability to plan my own work
27 As a result of my research I feel confident about tackling unfamiliar problems
30 As a result of my research I have developed the ability to learn independently

## 4.2 Qualitative data analysis

There are 5 sub-categories within Graduate Attributes, against which students comments are analysed. These match the five main University Generic Graduate Attributes. The components of these sub-categories are allied to the skills and abilities for each attribute provided in the University policy framework for Graduate Attributes.

- Communication (*oral communication; written communication)*
- Ethical, social, professional understanding (*collaboration/ team work; ethical, social, cultural understanding; professional skills including academic*)
- Information literacy (*retrieval and use of information; computing skills e.g. using endnote, searching databases etc; referencing*)
- Personal and intellectual autonomy (*independent learning; planning own work; intellectually curious; new ways of thinking, etc*)
- Research and inquiry (*analytical, critical, problem solving; expanding knowledge base; creativity and imagination; statistical skills; research skills*)

# 5 OVERALL SATISFACTION

## 5.1 SREQ Survey item

43 Overall, I am satisfied with the quality of my research higher degree experience.

## 5.2 Qualitative data analysis

There are 9 sub-categories within Overall Satisfaction. They represent the range of aspects of the postgraduate research student experience which are considered to have a major influence on the quality of the research degree experience, and which are not covered elsewhere.

- General comments
- Quality of degree/ program (*length; inclusion of coursework, practical aspects, including field work and visits to other institutions in Australia and overseas)*
- Pressure to complete (*i.e. within time frame set by APA conditions etc*)
- Satisfaction with research (*topic, contribution to field*)
- Flexibility of the program (*freedom to follow own research; choose own topics; compared to undergraduate degree; flexible working hours*)
- Reputation/ prestige of university/ faculty/ department/ academic staff
- Quality of students
- Staffing issues and resources (*i.e. that affect students overall experience*)
- Writing and completing the thesis