

Working Paper Series
ISSN 1170-487X

Research Laboratory Survey

Kirsten Thomson

Working Paper: 09/02
November 2002

© 2002 Kirsten Thomson
Department of Computer Science
The University of Waikato
Private Bag 3105
Hamilton, New Zealand

The University of Waikato

Usability Laboratory

Department of Computer Science
University of Waikato
Private Bag 3105
Hamilton, New Zealand

tel: +64 (7) 858 5116 fax: +64 (7) 858 5095
email: usability@cs.waikato.ac.nz
web: <http://usability.cs.waikato.ac.nz>



The
University
of Waikato
Te Whare Wānanga
o Waikato

Research Laboratory Survey

Department of Computer Science
The University of Waikato

by Kirsten Thomson

The University of Waikato Usability Laboratory

Research conducted: July and August, 2002

Final report issued: Thursday, 31 October 2002

Executive Summary

This report represents the results of a survey conducted by the University of Waikato Usability Laboratory of the research laboratories at the Department of Computer Science, The University of Waikato, Hamilton, New Zealand. The study was conducted on behalf of the Department of Computer Science.

The goal of the research was to:

- Inform the development of future laboratories.
- Inform the process any of re-development of current laboratories.
- Provide information about the use and acceptance of the laboratories.

The survey took place over July and August 2002.

Findings in Summary

Laboratories should be provided with:

- Computers and workstations for each individual resident.
- Desks greater than 1400mm wide and preferably L-shaped. Easily accessible pin-boards at each desk. Under-desk lockable drawers and filing cabinets.
- Computers a minimum 15" flat or 17" (normal) screens. (Residents can place the computer boxes where they are most comfortable, however under the desk will provide more desk space.)
- Chairs with height and back adjustment.
- Shared work areas e.g. a central table, an accessible and semi-private whiteboard, and LIDS.
- Shared relaxing facilities e.g. comfy chairs, bean-bags, and coffee tables.
- Shared resources e.g. printers, pin-boards, bookshelves with technical books, research books and journals, and staplers. Easy access to a scanner should also be considered.
- Provisions to make the laboratories more attractive e.g. pictures, imitation plants.
- Good environmental management e.g. small and clean rubbish bins, comfortable air conditioning and regular cleaning.
- Good lighting and lighting maintenance including blinds or nets on external windows to dull any glare.
- Good security and privacy e.g. covering door-windows, placing furniture so that computer screens are not immediately visible from the door, security on external windows if in the basement, partitions that provide privacy but do not isolate.

Author

The report has been written on behalf of the Department of Computer Science by Kirsten Thomson (email: kthomson@cs.waikato.ac.nz, phone: +64 7 858 5116).

Contents

	<i>page</i>
Executive Summary	i
Findings in Summary	i
Author	ii
List of Tables and Figures	iii
1. Introduction	1
1.1. Previous Developments	1
1.2. Information	3
1.3. Survey of the Computer Science Research Laboratories	3
1.4. Terminology	3
1.5. Structure of the Report	3
2. Methodology	4
2.1. Goal	4
2.2. Questions	4
2.3. Distribution	4
2.4. Participants	5
2.5. Analysis	5
3. Analysis	7
4. Results	9
5. Summary	30
Appendix 1. Survey	31

List of Tables and Figures

	<i>page</i>
Figure 1.1. General position and initial shape of the Digital Library and Machine Learning laboratories.	1
Figure 1.2. Current shape of the Digital Library and Machine Learning laboratories.	1
Figure 1.3. L-shaped desks in laboratory: (i) birds-eye view and (ii) side view. (Drawing is not accurate.)	2
Figure 1.4. Desks as they are organised into pairs.	2
Figure 1.5. Desks as they were used by the laboratory inhabitants.	3
Table 2.1. Breakdown of participants by laboratory.	5
Table 2.2. Breakdown of the participant types.	5
Table 2.3. Attributes of survey participants.	6
Figure 4.6. Who is the person in charge of your lab?	9
Figure 4.7. Breakdown by degree of students who did not know who their laboratory supervisor was. (A) provides a breakdown for all the laboratories, (B) provides a breakdown by laboratory.	10
Figure 4.8. Breakdown of average hours spent in lab per week	10
Figure 4.9. Activities organised by laboratory. Graphs are (i) Digital Library, (ii) Distributed Systems, (iii) Entropy, (iv) Networks, and (v) Visual Communications/Formal Methods. The x-axis is 6-10, 11-20, 21-30, 31-40 and 41-50.	11
Figure 4.10. What activities do you do in your laboratory?	11
Figure 4.11. Activities organised by laboratory. Graphs are (i) Digital Library, (ii) Distributed Systems, (iii) Entropy, (iv) Networks, and (v) Visual Communications/Formal Methods. The x-axis is (A) write/type on the computer e.g. write assignments, program; (B) read on the computer e.g. read information found on the Internet, read email; (C) write on paper e.g. makes notes for other activities, drafts reports; (D) read paper-based artifacts e.g. books, papers, manuals; (E) interact with others through impromptu discussions that last longer than 15 minutes; (F) interact with others in planned meetings; and (G) interact with others about group work/assignments.	12
Figure 4.12. Have you ever consulted with any one over your OSH requirements?	12
Figure 4.13. Do you find your laboratory generally conducive to study?	13
Figure 4.14. Do you have to share your desk and computer with other people?	13
Figure 4.15. Do you generally enjoy spending time in your lab?	14
Figure 4.16. What areas of your laboratory would you define as a shared workspace?	14
Figure 4.17. Do you generally have sufficient personal space in your laboratory?	15
Figure 4.18. The general laboratory environments.	16
Figure 4.19. Laboratory environments organised by laboratory. Graphs are (i) Digital Library, (ii) Distributed Systems, (iii) Entropy, (iv) Networks, and (v) Visual Communications/Formal Methods. The x-axis is Noise, Character, Workability, Comfort, Enjoyability, Friendliness and Attractiveness.	16
Figure 4.20. Do you generally like to collaborate and interact with other people while in your laboratory?	17
Figure 4.21. Does the way that your laboratory is set up and its general environs encourage you to collaborate and interact with other people while in your laboratory? (A) provides a general breakdown, (B) provides a breakdown by laboratory.	17
Figure 4.22. How often do you find yourself collaborating and interacting with other people in your laboratory for 15 minutes or longer at one time?	18
Figure 4.23. Is this genuinely sufficient for your needs. (a) Is the computer screen a sufficient size, (b) if not, what is the size of the participant's monitor?	20
Figure 4.24. Where does your computer box sit?	21
Figure 4.25. Placement of computer box a help, neither or hindrance?	21

Figure 4.26. Would you like partitions in your lab? Includes (i) over all the participants who initially said no, (ii) break down of participants who do not want partitions. 23

Figure 4.27. How much do you like your lab? 28

Figure 4.28. Participant rating of laboratory. Graphs are (i) Digital Library, (ii) Distributed Systems, (iii) Entropy, (iv) Networks, and (v) Visual Communications/Formal Methods. The ratings are '1 I totally dislike my lab', '2 I do not like my lab', '3 I neither like or dislike my lab', '4 I like my lab' and '5 I really like my lab'. 28

1. Introduction

The Department of Computer Science at The University of Waikato has a number of research laboratories. The laboratories are for research students and assistants. The laboratories are organised around research projects (i.e. The Digital Library Laboratory) or research areas (i.e. Human Computer Interaction).

1.1 Previous Developments

Development and restructuring of laboratory space depends on the requirements of the research students and projects.

A Typical Example

An example of how research laboratories have developed in the past are the Digital Library and Machine Learning laboratories. Both laboratories co-habit the same space.

The space was initially an undergraduate computer laboratory. It is in the center of the building with no outside windows. When the two laboratories were first established, the space was rectangular (see Figure 1.1).

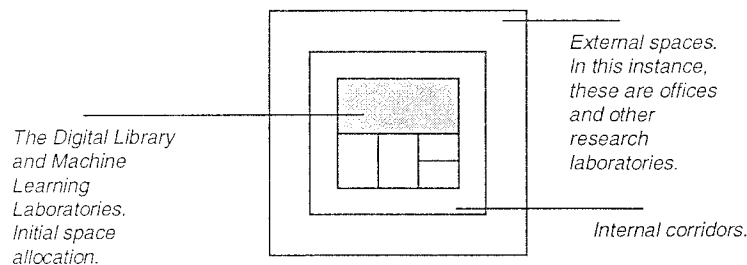


Figure 1.1. General position and initial shape of the Digital Library and Machine Learning laboratories.

Later, to accommodate the growing numbers of students and researchers, the laboratory was extended. It currently resembles an L-shape (see Figure 1.2).

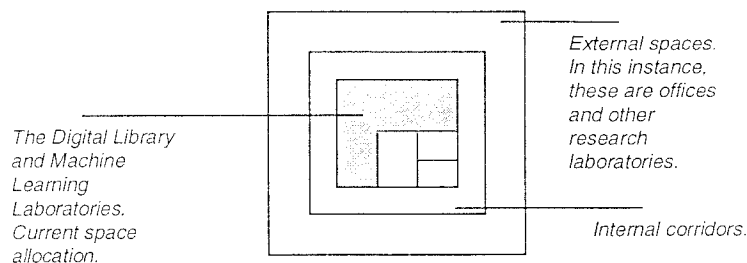


Figure 1.2. Current shape of the Digital Library and Machine Learning laboratories.

During initial development, based on anecdotal evidence from the development of other research laboratories within the Department, it was decided that L-shaped desks should be used. Each desk

had a long deep side and a short narrow side. Each desk had a partition extending above the level of the desk along the short narrow side. (See Figure 1.3.)

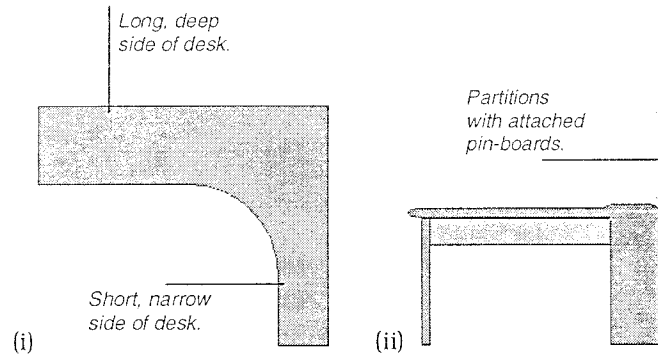


Figure 1.3. L-shaped desks in laboratory: (i) birds-eye view and (ii) side view. (Drawing is not accurate.)

The exact measurements and placement of the furniture was determined by measuring the lengths of the walls, taking into account the doorways, corners, columns, and so on. The desks were organised into pairs, with the L-shapes facing outwards. (See Figure 1.4.)

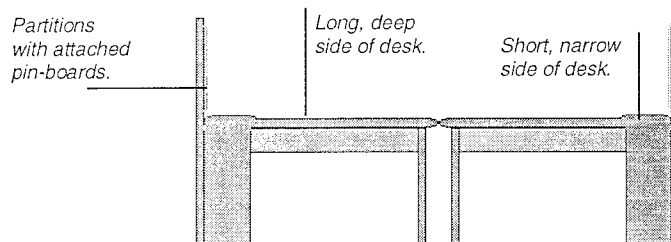


Figure 1.4. Desks as they are organised into pairs.

During later additions to the laboratory, the layout of the room and placement of the desks changed. So too did the shape of the new desks. These were rectangular in shape (with one or two having L-shaped extensions but without the curved piece) and without any partition.

During initial development, each work area was allocated to a specific laboratory resident by the laboratory supervisor. (In the previous laboratory, desk spaces were unallocated and residents used them on a daily first-come, first-served basis.) The residents were encouraged to use the space for themselves—to place material on the pin-boards, books on the desks, and so on.

Computers with specific configurations were allocated depending on the research and programming needs of the laboratory residents. The residents decided the placement of their computer monitors and boxes within their work areas. They tended to place the monitors on the larger curved part of the desk. The boxes were placed either beneath or beside the computer monitor, or beneath the desk (see Figure 1.5).

Resources, such as printers, staplers, and bookcases with reference materials, were placed in a central position. A whiteboard already existed on the wall just inside of the main doorway (a corridor-type arrangement). To date this has never been moved.

A shared workspace area (three rectangular desks sitting alongside each other and surrounded by chairs) was set up near the middle of the room. The shared workspace was for laboratory residents to work at, and for group meetings i.e. between members of the research project. Later a LIDS (Large Interactive Display Surface) was placed along part of one wall in the laboratory.

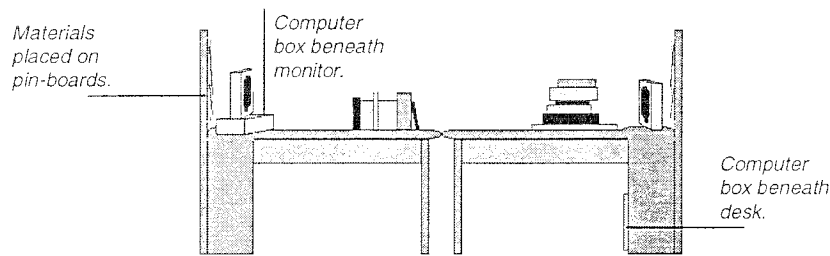


Figure 1.5. Desks as they were used by the laboratory inhabitants.

1.2 Information

Much historical data exists within the Department. However, the experiences of the developers in creating the workspaces, and the experiences of the laboratory residents as they utilize the workspaces have never been recorded. Thus, any development is based on anecdotal rather than researched evidence.

1.3 Survey of the Computer Science Research Laboratories

The Usability Laboratory has conducted a survey of the existing research laboratories within The Department of Computer Science over July and August 2002. The participants of the survey were the laboratory residents. The survey asked a range of questions regarding use of the laboratory that they occupied.

1.4 Terminology

A number of specific terms have been used in this report. These are listed below:

<i>Resident</i>	Throughout this report, the term "resident" has been used to refer to the research students and assistants that use the research laboratories within the Department of Computer Science.
<i>Participant</i>	Throughout this report, the term "participant" has been used to refer to those residents who took part in this survey.

1.5 Structure of the Report

The remainder of the report is structured as follows. Section 2, Methodology, describes the methods used for the survey and how it was conducted. Section 3, Analysis, describes the analysis of the results. Section 4, Results, provides the results from the survey. The final section of the report, Section 5, Summary, presents some concluding remarks and a summary of the recommendations.

2. Methodology

2.1 Goal

The goal of the research was to:

- Inform the development of future laboratories.
- Inform the process any of re-development of current laboratories.
- Provide information about the use and acceptance of the laboratories.

2.2 Questions

Fifty questions were asked in the survey. The topics included:

- Participant personal details (questions 1 to 5)
- Identifying the laboratory (questions 6 and 7)
- Purpose of being in the laboratory (questions 8 and 9)
- Use of the laboratory by the participant (questions 10 to 12)
- Occupational safety and health (question 13)
- Working in the laboratory (questions 14 to 21)
- Interacting and collaborating with other laboratory users (questions 22 to 24)
- Desks and computers (questions 25 to 31)
- Computers (questions 32 to 35)
- Partitions (questions 36 to 38)
- Whiteboards (questions 39 to 41)
- Lighting (questions 42 and 43)
- Shared spaces (questions 44 to 46)
- Summary questions (questions 47 to 50).

We sought qualitative and quantitative, and subjective and objective data. Participants answered closed (i.e. ratings, scales, yes/no) and open (i.e. opinions, thoughts and explanations, long and short answer questions).

A copy of the survey can be found in Appendix 1.

2.3 Distribution

Fifty copies of the survey were distributed around the research laboratories. A copy was placed on each computer. A memo from the research coordinator was also attached. It described the purpose of the survey and asked the participants to return the completed survey to the Department office as soon as possible.

Two weeks after the date of distribution, the Department secretary sent an email message to all laboratory residents reminding those who had not completed and returned the survey to do so. The survey close-off date was one week later.

2.4 Participants

Not all of the survey population completed a survey. Just over half (28) of the surveys were returned. Table 2.1 provides a breakdown of the number of participants by laboratory.

Name of Laboratory	No. of Participants
The Digital Library Laboratory	7
The Distributed Systems Laboratory	3
The Entropy Laboratory	6
The Human Computer Interaction and Software Development Laboratory	1
The LIDS Laboratory	0
The Machine Learning Laboratory	1
The Networks Laboratory	3
The Visual Communications/Formal Methods Laboratory	5
Other	2

Table 2.1. Breakdown of participants by laboratory

Table 2.2 provides a breakdown of the participant types.

Type	No. of Participants
Student	20
Research Assistant	3
Programming Assistant	4
Office Administration	1

Table 2.2. Breakdown of the participant types.

Table 3 lists the attributes of those that participated.

(Please note: For confidentiality we have not listed the name of the laboratory that the participant resides or the reason for being in the laboratory.)

2.5 Analysis

In most instances, analysis has been done question-by-question. Where relevant, results are divided by laboratory, or by some other characteristic e.g. years in laboratory.

We have not performed a rigorous statistical analysis on the closed questions (e.g. rating, scale and yes/no). Instead, we have provided counts, percentages, ranges, or averages. We have also incorporated graphs to clarify data presented.

Responses to open questions have been included. Where relevant, these help clarify statistical results. Where a comment can be directly attributed to a participant we indicate this by placing the participant number in brackets after the comment. An example of this is:

Addition of somewhere comfortable to lounge and read (P1).

Participant No.	Age (Range)	Gender	Writing Hand	Years In Laboratory	Avg. Hours Per Week In Laboratory
1	21-25	Female	Right	3	41-50
2	21-25	Male	Right	< 1	21-30
3	21-25	Male	Right	< 1	11-20
4	21-25	Female	Right	< 1	41-50
5	26-30	Male	Left	5	11-20
6	36-40	Female	Left	< 1	21-30
7	21-25	Male	Left	1	31-40
8	21-25	Male	Right	2	31-40
9	26-30	Male	Right	< 1	41-50
10	31-35	Female	Right	< 1	21-30
11	21-25	Male	Right	< 1	31-40
12	26-30	Male	Right	3	21-30
13	21-25	Female	Right	< 1	21-30
14	21-25	Male	Right	2	41-50
15	21-25	Male	Right	< 1	41-50
16	41-45	Female	Right	< 1	21-30
17	21-25	Male	Left	< 1	21-30
18	21-25	Male	Right	< 1	21-30
19	18-20	Male	Right	< 1	11-20
20	21-25	Female	Right	< 1	21-30
21	21-25	Female	Right	< 1	41-50
22	21-25	Female	Right	< 1	31-40
23	26-30	Female	Right	2	31-40
24	21-25	Male	Right	1	11-20
25	21-25	Female	Right	< 1	21-30
26	21-25	Male	Right	< 1	6-10
27	21-25	Male	Left	3	31-40
28	31-35	Female	Right	< 1	31-40

Table 2.3. Attributes of survey participants.

3. Analysis

The following is the analysis of the results found in section 4, Results. The results have no priority.

1. Most participants did not know the person in charge of their laboratory.
2. Most participants spend between 21 and 40 hours in their laboratory per week.
3. The most frequent activities are writing/typing and reading on the computer, and writing and reading paper-based materials. Less time is spent interacting with others in planned or impromptu sessions.
4. Only one participant has consulted with any one about his/her OSH requirements.
5. Most participants found their laboratory conducive to study and enjoyed spending time in it. Those who did not, typically shared their computer (in some way) with other people in a way that significantly affected their work.
6. Most participants defined their computer and desk as their own personal workspace. Some also indicated their pin-boards. Most participants found they had sufficient personal space. The most common shared resource was a laboratory's meeting area/shared table, followed by the whiteboard and printer.
7. The participants found workability, friendliness, enjoyability and comfort to be the most appealing aspects of the laboratories. Attractiveness, noise and character were the least liked aspects.

To improve the laboratories attractiveness some additional furnishing could be provided, e.g. pictures could be placed on the walls, comfy reading chairs or bean-bags and coffee tables could be placed around the rooms. Additionally there could be better environmental management of the spaces e.g. small rather than large rubbish bins, clean rubbish bins, better air conditioning, and regular cleaning.

The participants seemed to appreciate the resources provided in the rooms. The laboratories should aim to provide individual computers and workspaces for each person, reliable printers (that also print pdf files), staplers, whiteboards, group and individual pinboards, shared tables, personal under-desk drawers and filing cabinets, and shared bookcases. Easy access to a scanner should also be considered.

8. The participants were also concerned about security and privacy. They were worried about theft, too many miscellaneous people walking in, computer screens being immediately visible from the door and the door-window, and security on windows if in the basement.
9. Most participants like to collaborate and interact with other people in their laboratory, and tended to for 15 minutes or more at one time multiple times a week. Most participants thought the way the laboratories were set-up encouraged their interaction.
10. Most laboratories provide pin-boards at the resident's workstations. Those without pin-boards would use them, if provided.
11. Desks that are L-shaped and wider than 1400mm tend to provide the most useful work spaces. Rectangular desks that are less than this width do not provide sufficient workspace. All the desks, whether rectangular or L-shaped, are comfortable to sit at. Most chairs were comfortable, although those that provide height and back adjustment are preferable.

12. Fifteen inch flat-screen or 17" (normal) are the smallest monitors should be. Flat-screened monitors are lighter and take up less room on the desks. They are also easier to tilt and when on the desk are less likely to be raised by computer boxes or books. Computer boxes that are placed under the desks provide more space on the desks. Currently, most participants use the boxes to raise their monitors to sufficient eye-level.
13. Most laboratories have partitions. The participants liked their use as they provide added privacy—away from distractions and onlookers, and provide sufficient personal space. The most suitable height has not been established but those that provide privacy without isolating residents are recommended.
14. Most laboratories have a whiteboard. If easily accessible and reasonably private the residents use them for a range of individual and group activities.
15. The participants found the laboratories adequately lit, although some find the fluorescent lighting too bright or distracting when the lights flicker.

If a laboratory had outside windows, the light was suitable in most cases. In some instances the light could be too bright suggesting the need for blinds or nets across the windows.
16. Most laboratories have a shared space with many residents taking advantage of this resource.

4. Results

Results are presented by question. Where relevant results are broken down by influencing factors, such as laboratory, number of years in laboratory, hours per week spent in laboratory, and so on.

We start with question 7, as questions 1 to 5 address the participants' personal details and question 6 asks which laboratory the participants reside. The responses to questions 8, the reason for being in the laboratory, and 9, the degree currently studied, are not analysed. However, the results are taken into account when analysing other questions. The responses to questions 10 and 11, the length of time the participants have been in their laboratory and the amount of time that they spend in their laboratory each week, respectively, are included in Table 2.3. After question 7, we continue with question 11. We do not analyse questions 28 and 29, as these are drawings of the participants' work areas and measurements of desks. Please note: we have combined the analysis of some related questions.

Your Laboratory

Question 7: Who is the person in charge of your lab?

Eighteen participants could not identify the person in charge of their laboratory. Eight participants did know, while two questioned the correctness of their response. (See Figure 4.1.)

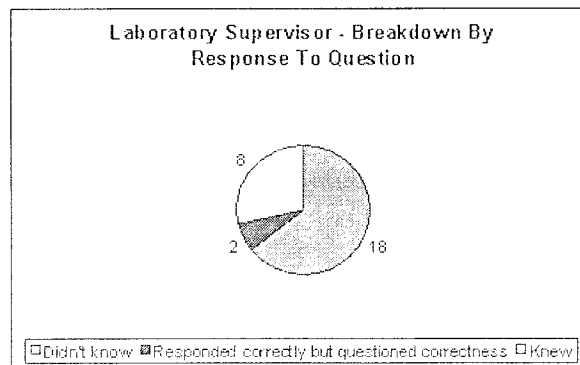


Figure 4.1. Who is the person in charge of your lab?

Six of the participants who did not know the laboratory supervisor were students. Seven were honours students, five were masters (MSc and MCMS) students, two were doctoral (PhD) students, and two were postgraduate diploma students. (See Figure 4.2 for a breakdown.)

When the results were categorised by laboratory, we learned that all participants from the Entropy, HCI&SD, Visual Communications/Formal Methods laboratories, and nearly half the participants from the Digital Library Laboratory did not know who the person in charge of the laboratory was. Only one Distributed Systems Laboratory participant was not sure of the person in charge of that laboratory.

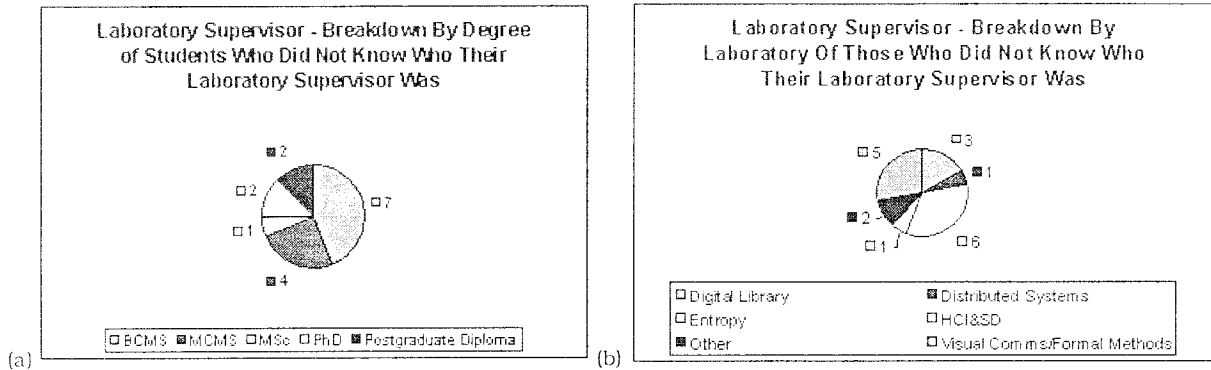


Figure 4.2. Breakdown by degree of students who did not know who their laboratory supervisor was. (A) provides a breakdown for all the laboratories. (B) provides a breakdown by laboratory.

Your Use of Your Laboratory

Question 11: On average, how many hours per week do you spend in your lab?

Sixty-one percent of participants spend 21 to 40 hours in the laboratories per week. Twenty-one percent spend 41 to 50 hours, while 14% spend 11 to 20 hours in the laboratories per week. Figure 4.3 provides this breakdown in graphic form.

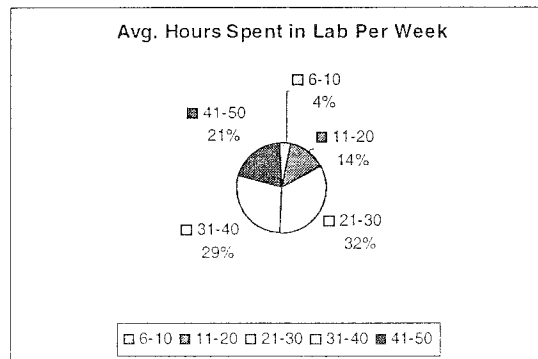


Figure 4.3. Breakdown of average hours spent in lab per week

Figure 4.4 provides a break down by research laboratory.¹

¹ Only the Digital Library, Distributed Systems, Entropy, Networks and Visual Communications/Formal Methods laboratories have been broken down further. Note the changes in scale on the graphs for each laboratory. The remaining laboratories, the HCI/SD, Machine Learning and Other, have not been charted as they do not contain enough data.

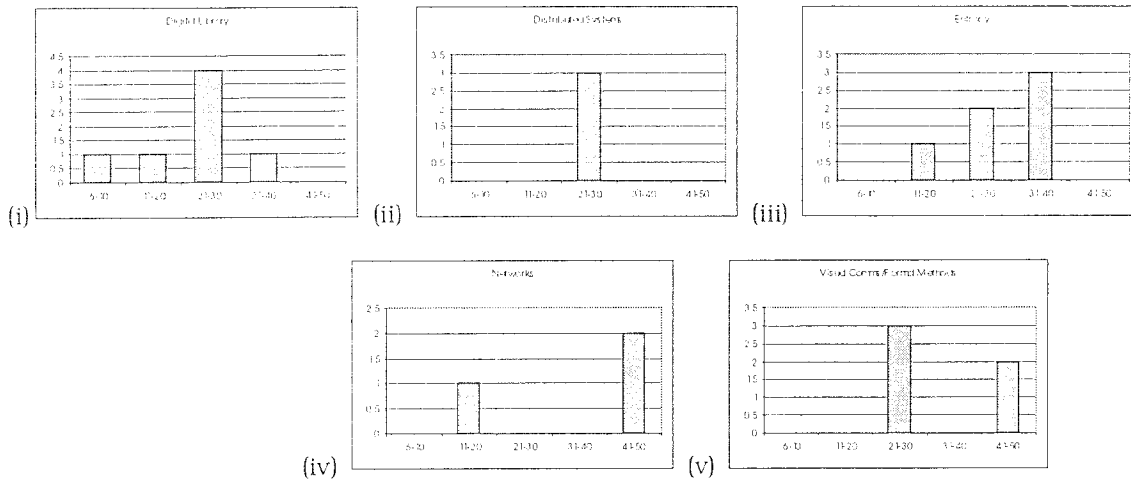
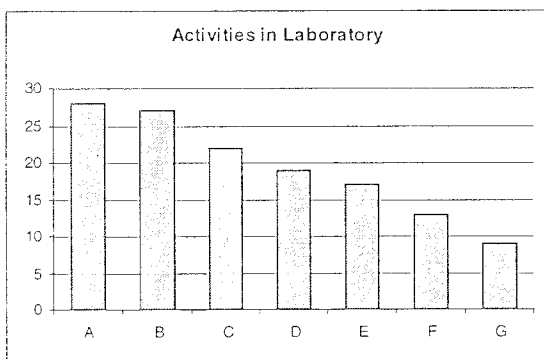


Figure 4.4. Activities organised by laboratory. Graphs are (i) Digital Library, (ii) Distributed Systems, (iii) Entropy, (iv) Networks and (v) Visual Communications/Formal Methods. The x-axis is 6-10, 11-20, 21-30, 31-40 and 41-50.

Question 12: What activities do you do in your lab?

Figure 4.5 depicts the participants' activities:

- (A) Write/type on the computer e.g. write assignments, program;
- (B) Read on the computer e.g. read information found on the Internet, read email;
- (C) Write on paper e.g. makes notes for other activities, drafts reports;
- (D) Read paper-based artifacts e.g. books, papers, manuals;
- (E) Interact with others through impromptu discussions that last longer than 15 minutes;
- (F) Interact with others in planned meetings; and
- (G) Interact with others about group work/assignments.



- (A) Write/type on the computer e.g. write assignments, program;
- (B) Read on the computer e.g. read information found on the Internet, read email;
- (C) Write on paper e.g. makes notes for other activities, drafts reports;
- (D) Read paper-based artifacts e.g. books, papers, manuals;
- (E) Interact with others through impromptu discussions that last longer than 15 minutes;
- (F) Interact with others in planned meetings; and
- (G) Interact with others about group work/assignments.

Figure 4.5. What activities do you do in your laboratory?

The most frequent activities are (A) writing and typing on the computer, and (B) reading on the computer. The least frequent activities are (G) interacting with others about group work/assignments, and interacting with others in (F) planned meetings and (E) impromptu discussions that last longer than 15 minutes.

Figure 4.6 provides a break down by research laboratory.²

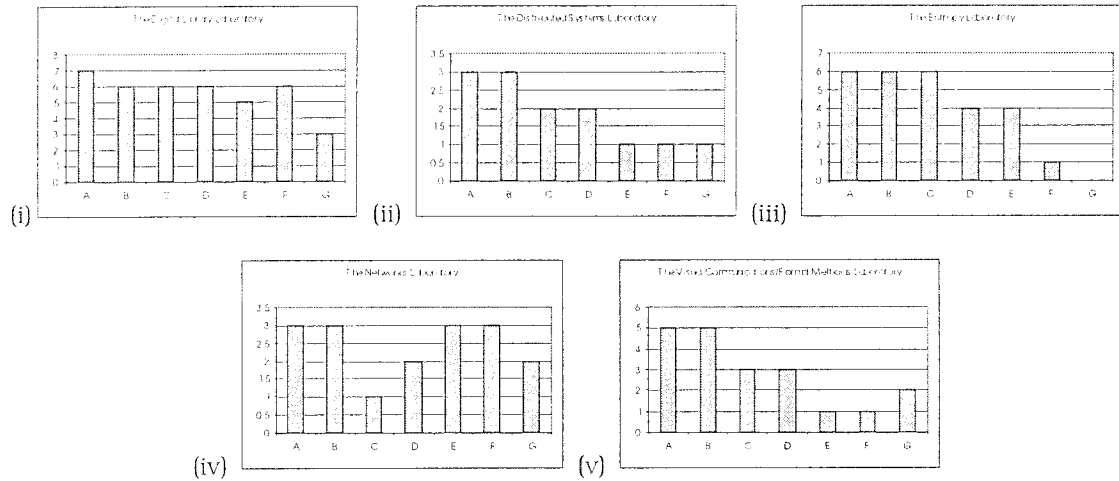


Figure 4.6. Activities organised by laboratory. Graphs are (i) Digital Library, (ii) Distributed Systems, (iii) Entropy, (iv) Networks, and (v) Visual Communications/Formal Methods. The x-axis is (A) write/type on the computer e.g. write assignments, program; (B) read on the computer e.g. read information found on the Internet, read email; (C) write on paper e.g. makes notes for other activities, drafts reports; (D) read paper-based artifacts e.g. books, papers, manuals; (E) interact with others through impromptu discussions that last longer than 15 minutes; (F) interact with others in planned meetings; and (G) interact with others about group work/assignments.

Occupational Safety and Health

Question 13: Have you ever consulted with any one (e.g. Harry Johnson) over your OSH requirements?

Figure 4.7 indicates that only 1 participant has consulted about his/her OSH requirements.

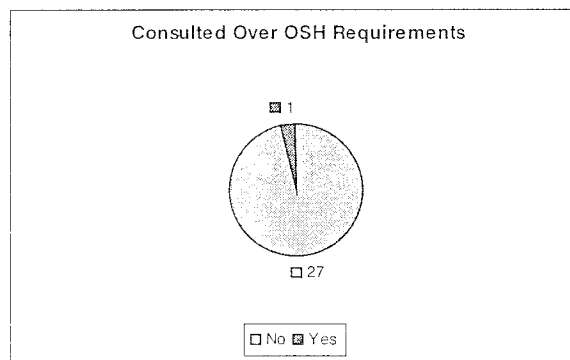


Figure 4.7. Have you ever consulted with any one over your OSH requirements?

² Only the Digital Library, Distributed Systems, Entropy, Networks and Visual Communications/Formal Methods laboratories have been broken down further. Note the changes in scale on the graphs for each laboratory. The remaining laboratories, the HCI/SD, Machine Learning and Other, have not been charted as they do not contain enough data.

Working In Your Laboratory

Question 14: Do you find your laboratory is generally conducive to study?

Twenty-six participants found their laboratory conducive to study. (See Figure 4.8.)

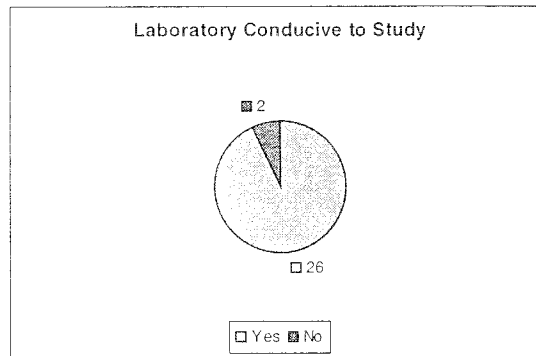


Figure 4.8. Do you find your laboratory generally conducive to study?

The two remaining participants found that too many discussions took place (Networks) and that the space was not utilised enough for working (Visual Communications/Formal Methods).

Question 15. Do you have to share your desk and computer with other people?

Question 16. Do you share your desk and computer with other people infrequently, sometimes, often or frequently?

Question 17. Do you find that sharing your desk and computer with other people inhibits the way that you work significantly, sometimes, or not really?

Three participants indicated that they share their desk and computer with other people. (See Figure 4.9.)

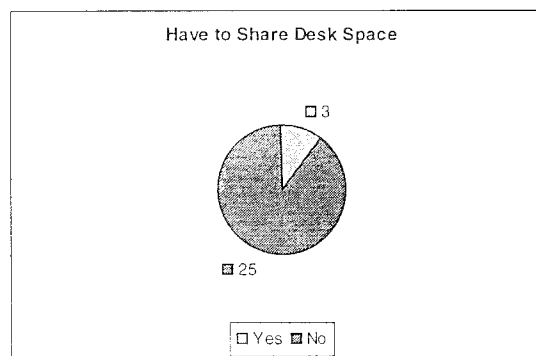


Figure 4.9. Do you have to share your desk and computer with other people?

One participant was from the Digital Library Laboratory, another from the Networks Laboratory. These two sometimes shared their desk and computer. The third participant was from the Visual Communications/Formal Methods Laboratory and had to share their computer frequently.

Two of the participants that shared with other people, also indicated that their laboratory was not conducive to study.

Two participants (one from the Digital Library Laboratory, the other from the Visual Communications/Formal Methods Laboratory) found sharing computer significantly inhibited their work. Reasons included remote users being able to log on to compile applications making the system slow, and little space for easy use of the computer mouse.

Question 18. Do you generally enjoy spending time in your lab?

As seen in Figure 4.10, 25 participants enjoy spending time in their laboratory.

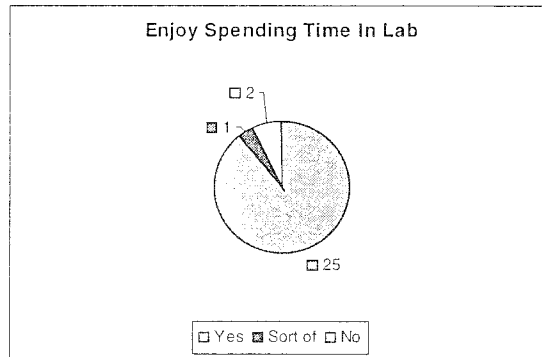


Figure 4.10. Do you generally enjoy spending time in your lab?

Two participants did not, and these participants were from the Digital Library and Visual Communications/Formal Methods laboratories. Note: these are the two participants who found sharing their computer and desk significantly inhibited their work.

Question 19. What areas of your laboratory would you define as your-own, or a shared workspace?

Most participants defined their computer and desk as their own personal workspace. Some also indicated their pin boards.

Figure 4.11 indicates that 32% of the participants thought the meeting area/shared table was the most common shared resource, followed by the whiteboard (24%) and the printer (12%).

(Eleven participants did not list a shared resource.)

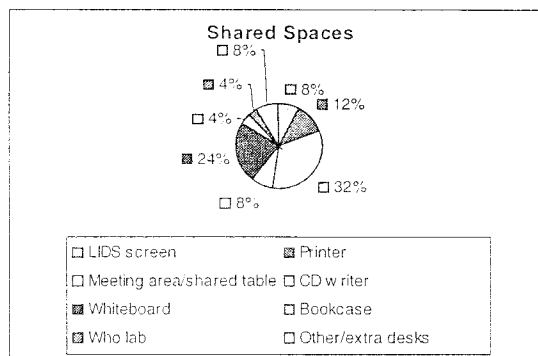


Figure 4.11. What areas of your laboratory would you define as a shared workspace?

Question 20. Do you generally have sufficient personal space in your laboratory?

Figure 4.12 indicates that 24 participants found they had sufficient personal space, while four participants did not.

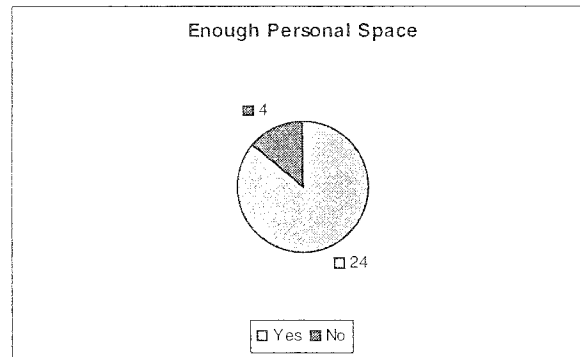


Figure 4.12. Do you generally have sufficient personal space in your laboratory?

Of those who indicated that they did not have sufficient personal space, two were from the Digital Library Laboratory and one was from the Visual Communications/Formal Methods Laboratory. Two of these participants had earlier indicated that sharing a desk and computer significantly inhibited their work.

Question 21. Please rate the general environment within your lab along the following scales: Noisy – Quiet, Impersonal – Personal, Unworkable – Very workable, Uncomfortable – Comfortable, Unenjoyable – Enjoyable, Unfriendly – Friendly, Unattractive – Attractive.

The participants rated the laboratories along the following scales:

- Noise: noisy to quiet.
- Character: impersonal to personal.
- Workability: unworkable to workable.
- Comfort: uncomfortable to comfortable.
- Enjoyability: unenjoyable to enjoyable.
- Friendliness: unfriendly to friendly.
- Attractiveness: unattractive to attractive.

The participants rated workability highest, followed by friendliness, enjoyability and comfort. Attractiveness, noise and character were rated lowest. (See Figure 4.13.)

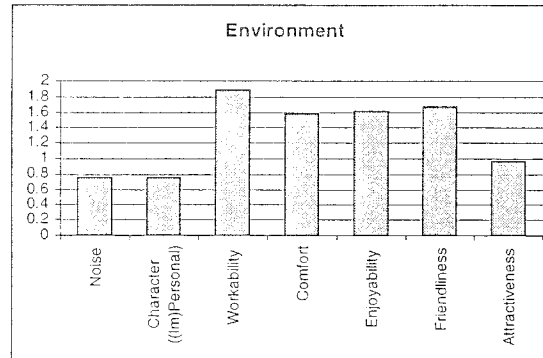


Figure 4.13. The general laboratory environments

Figure 4.14 gives a breakdown for each laboratory.

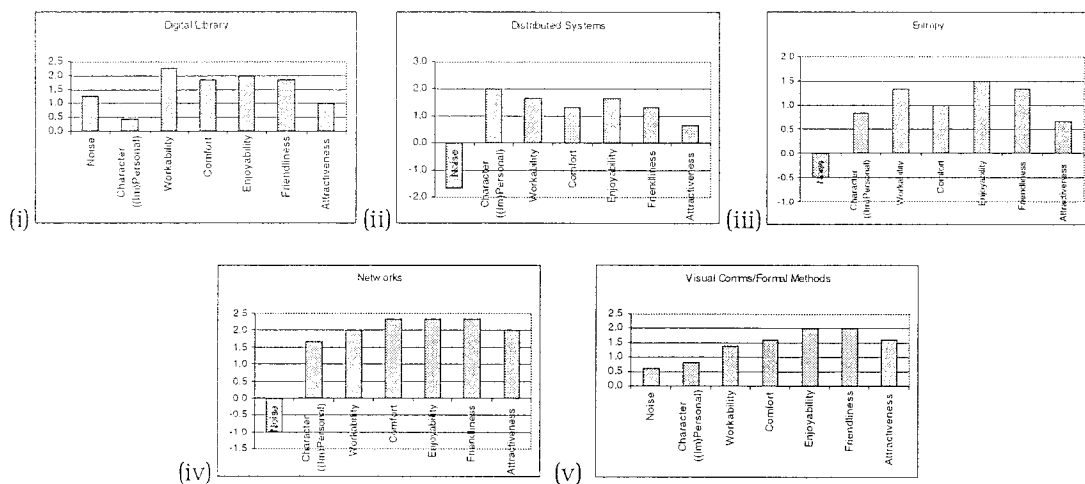


Figure 4.14. Laboratory environments organised by laboratory. Graphs are (i) Digital Library, (ii) Distributed Systems, (iii) Entropy, (iv) Networks, and (v) Visual Communications / Formal Methods. The x-axis is Noise, Character, Workability, Comfort, Enjoyability, Friendliness and Attractiveness.

Digital Library

Character and attractiveness were rated lowest for the Digital Library. Anecdotal evidence suggests that the large area taken by the laboratory, and the layout of the room could contribute to the low ratings.

Distributed Systems

The participants from the Distributed Systems Laboratory rated noise lowest (it received a negative score). Attractiveness also received a relatively low score.

Entropy

Noise (it received a negative score) and attractiveness were rated lowest for the Entropy Laboratory.

Networks

The participants from the Networks Laboratory rated noise lowest.

Visual Communications/Formal Methods

Noise and character rated lowest for the Visual Communications/Formal Methods Laboratory.

Interacting and Collaborating With Other Laboratory Users

Question 22. Do you generally like to collaborate and interact with other people while in your laboratory?

Figure 4.15 indicates that 23 participants liked to collaborate and interact with other people in their laboratory. Five indicated that they did not.

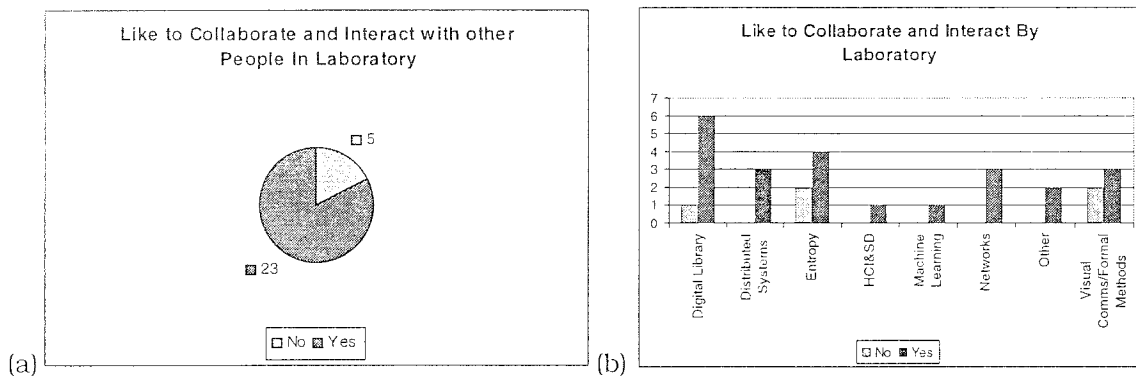


Figure 4.15. Do you generally like to collaborate and interact with other people while in your laboratory?

Those who do not like to collaborate and interact were from the Digital Library (one participant), the Entropy Laboratory (two participants) and the Visual Communications/Formal Methods Laboratory (two participants).

Question 23. Does the way that your laboratory is set up and its general environs encourage you to collaborate and interact with other people while in your laboratory?

As seen in Figure 4.16, 19 of 23 participants thought the general environs of their laboratory encouraged collaboration and interaction with other people.

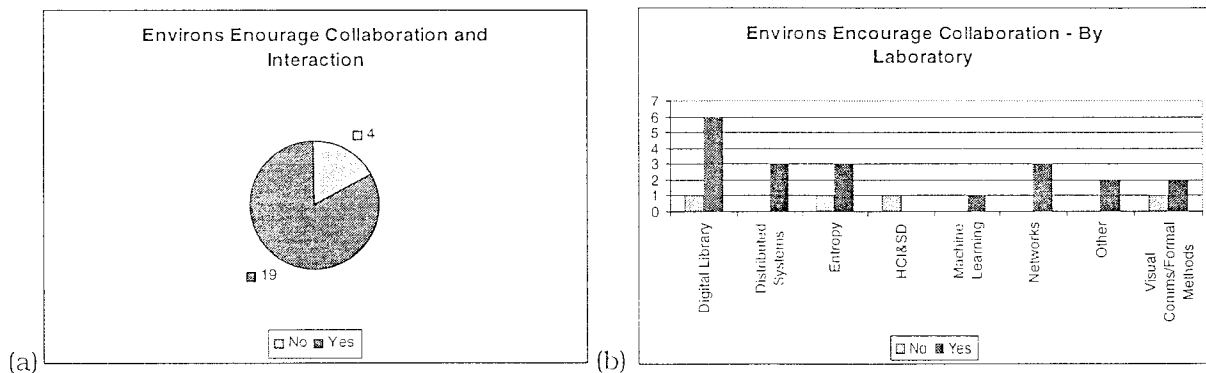


Figure 4.16. Does the way that your laboratory is set up and its general environs encourage you to collaborate and interact with other people while in your laboratory? (A) provides a general breakdown, (B) provides a breakdown by laboratory.

The four participants who did not were equally distributed around the Digital Library, Entropy, HCI&SD, and Visual Communications/Formal Methods laboratories.

Question 24. How often do you find yourself collaborating and interacting with other people in your laboratory for 15 minutes or longer at one time?

The participants collaborate with other people for more than 15 minutes at a time multiple times a week. The distribution across all the laboratories can be found in Figure 4.17.

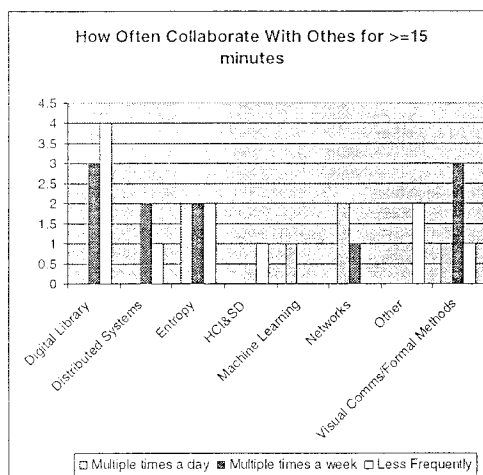


Figure 4.17. How often do you find yourself collaborating and interacting with other people in your laboratory for 15 minutes or longer at one time?

Question 25. Do you have a pin board at your workspace?

Question 26. Do you use your pin board?

Question 27. If one was made available to you, do you think you would use it?

Twenty-one participants indicated that they had a pin board at their workspace, of which 13 use them in some way. Of the seven without a pin board, six would use one if made available.

Question 30. Taking into account all the activities that you do at your desk, do you find that the shape of your desk provides a useful work area?

Twenty-three participants replied to this question. Four found the shape of their desks did not provide a useful work area.

Comments from these participants:

My main desk is to narrow [950mm wide] so I have to use neighbouring table. (P2) (Participant's desk measured at 950 mm wide.)

Preferred previous corner desk more working surface and the computer was further away. (P9) (Participant's desk measurements were not given.)

An "L" shape would be better. I end up moving my keyboard and mouse out of the way to write. (P10)

Doesn't lend itself to working at anything other than the computer. (P25) (Participant's desk measured at 1100 mm wide x 850mm deep).

Four participants with rectangular desks found them to be useful workspaces. Comments from these participants included:

Its size, weight, colour, texture all suit very nicely thanks. (P5) (Participant's desk measurements were not given.)

Quite a bit of space, but it would be nice to have curved areas to the left and right of me. (P18) (Participant's desk measured at 2000mm wide x 900mm deep.)

My keyboard moves far enough forward to provide me with room to write if I have to. (P24) (Participant's desk measured at 1400mm wide x 600mm deep.)

Comments from those participants with L-shaped desks, who found their desks useful workspaces included:

Good storage area for books, cds etc/ still room to write, read. (P1) (Participant's desk measurements were not given.)

The curve in the desk gives me workspace on either side of my computer. Top left is unaccessable. (P7) (Participant's desk measurements were 1150mm + 500mm wide x 900mm + 300mm deep)

Enough room especially for writing. (P11) (Participant's desk measurements were 500mm + 1100mm wide x 950mm + 250mm deep.)

Can sit in the middle and put stuff on both sides - I like it better than a flat desk. (P23) (Participant's desk measurements were 1200mm + 500mm wide x 900mm + 900mm deep.)

Corner desks are good, room on both sides of computer. (P26) (Participant's desk measurements were 1500mm wide + 1500 deep.)

Shape is fine, however it is too cluttered as I have nowhere to keep my infrequently used stuff. (P27) (Participant's desk measurements were 500mm + 500mm wide x 750mm + 900mm deep.)

Everything is within arms reach / Lots of space. (P12) (Participant's desk measurements were 1000mm + 600mm wide x 1000mm + 800mm deep.)

Its shape allows me to multi task; ie phone, email, accounts with easy movement. (P16) (Participant's desk measurements were 1180mm + 570mm wide x 1180mm + 570mm deep.)

The "L" shape is good only have to turn my chair to reach workspace. (P17) (Participant's desk measurements were 1000mm + 600mm wide x 1000mm + 600mm deep.)

Enough space to place a lot of paper material; place enough away from the computer screen. (P13) (Participant's desk measurements were 1300mm + 480mm wide x ? + 900mm deep)

The position of the computer is a little awkward due to the angle but has sufficient room for writing and storage. (P22) (Participant's desk measurements were 1700mm wide (total) + 850mm + ? deep.)

Its big enough to do what I have to do. (P8) (Participant's desk measurements were 1300mm + 500mm wide x 900mm + 700mm deep.)

I can position myself so that access to all areas of my desk is easy. (P20) (Participant's desk measurements were 1700mm wide (total) + 850mm + ? deep.)

Surrounds me, gives easy access to all the things I need. (P14) (Participant's desk measurements were 12700mm + 800mm wide x 1070mm + 780mm deep.)

Room for computer books and writing area. (P15) (Participant's desk measurements were 1700mm wide (on 2 sides) x 600mm - 750mm deep.)

Computer is in front - work areas to the sides. (P19) (Participant's desk measurements were 920mm + 800mm wide x 1300mm + 600mm deep.)

It is close to the window, round shape easy for me to spread things, close to the phone. (P4) (Participant's desk measurements were not given.)

I like its angled shape much better than the rectangular works station: more comfortable. It lets me turn around and do other things. (P21) (Participant's desk measurements were 1500mm wide (both sides); depth was not given.)

Question 31. Is your desk generally comfortable to sit at?

All participants indicated that their desks were comfortable to sit at.

Question 31a. Is your chair generally comfortable to sit at?

Four participants indicated that their chair was uncomfortable. Comments included:

- Adjustable back and a contoured seat (as found in much newer models). (P2)*
- Better chairs would be nice and a lot more comfortable – it's not properly adjustable. (P20)*
- The chairs aren't properly adjustable (back of chair). (P22)*
- Chairs are a bit old (new fancy chairs please!!). (P24)*

Your Computer

Question 32. What size is your computer screen?

Question 33. Is this genuinely sufficient for your needs?

Fifteen participants have a 17" monitor, while 7 have a 15" monitor and 6 have a 19" monitor.

Three participants found the size of their monitor insufficient. Two of these participants had 15" monitors, while one had a 19" monitor. (See Figure 4.18.)

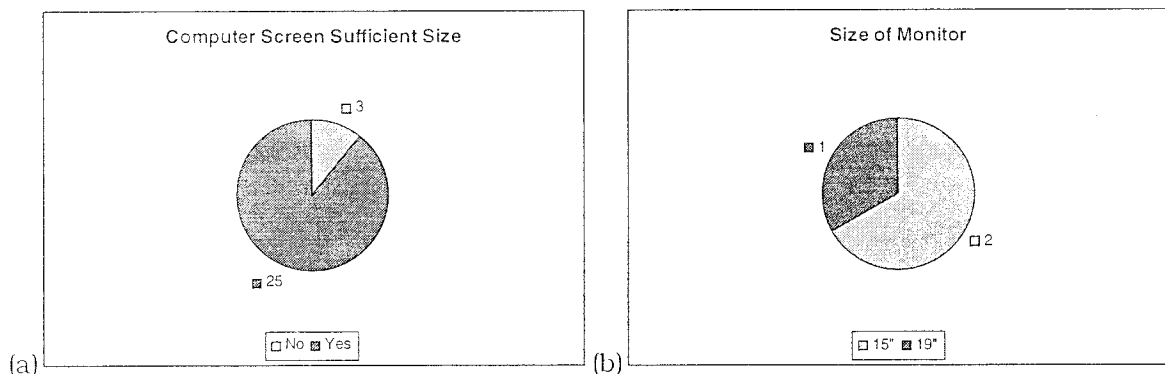


Figure 4.18. Is this genuinely sufficient for your needs. (a) Is the computer screen a sufficient size. (b) if not, what is the size of the participant's monitor?

Question 34. Where does your computer box sit?

Question 35. Do you find the position of your box a help or a hindrance?

Figure 4.19 indicates that twenty-three participants placed their computer box under their monitor. Three placed their computer box beside their monitor, while two placed it under their desks.

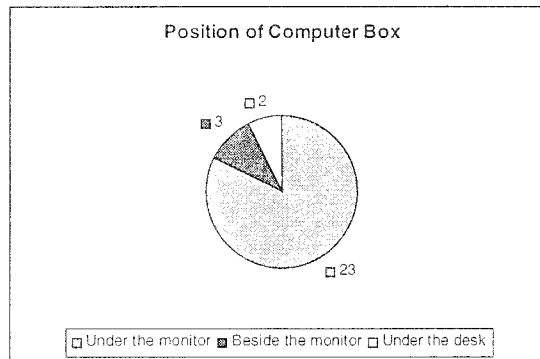


Figure 4.19. Where does your computer box sit?

The participants were asked whether they found the position of the computer box a help, hindrance or neither. (See Figure 4.20.)

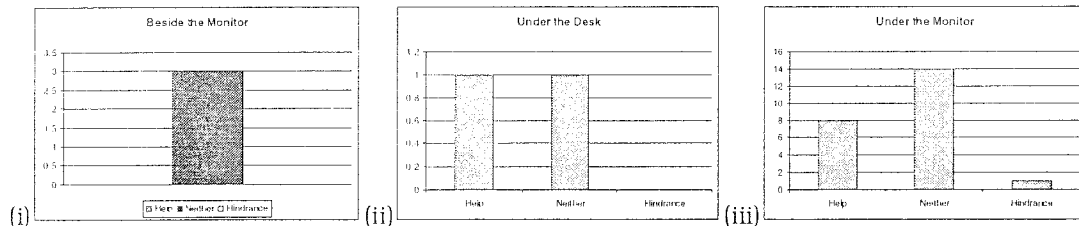


Figure 4.20. Placement of computer box a help, neither or hindrance?

The participants indicated:

- Beside the monitor to be neither a help nor a hindrance.
- Under the desk not to be a hindrance, with one participant (P15) indicating:

Can move monitor, mouse and keyboard further back, more room, can rest arms on desk, less strain. (P15)

- Under the monitor to be a help (8 participants), neither (14 participants), or hindrance (1 participant). These participants indicated that placing the computer box beneath their monitor helped raise their monitor to a more useful height. Comments included:

Raises monitor to nice height. (P1)

Lifts the monitor up to eye height. (P7)

It raises the screen. (P9)

Raises the monitor. (P11) expire

Allows the monitor to be at the same height as my head. (P14)

Raises the monitor to an acceptable height. (P22)

Raises the monitor to an acceptable height but it does take up a bit of room. (P23)

Inserting disks and cds is easier and plugging in headphones. (P13)

It's actually not that bad but considering moving the monitor to reduce eyestrain. (P18)

Partitions

Question 36. Does your lab have partitions?

Not all the laboratories have partitions, with 7 of the 28 participants in laboratories that did not.

Question 37. Do you like the way the partitions are used?

Of the 21 participants whose laboratory had partitions 3 did not answer this question. Sixteen participants liked the way the partitions were used. Comments included:

Gives everyone a pinboard and helps break up what would be otherwise a huge lab. (P1)

Blocks people from outside the lab observing me while allowing me to converse with others in the lab. (P3)

Because I feel comfortable. (P6)

Helps keep focus on the work by avoiding distractions. (P8)

Helps to create individual workspace. (P10)

A little bit of privacy without going too far. (P11)

Partially open/ partially closed gives a comfortable level of privacy. (P13)

Obvious workspace, still see everyone. (P14)

Corner style partitions, not cubicles. (P15)

Allows for privacy. (P16)

The partition is my pinboard. (P17)

They don't bother me. (P19)

Makes no difference. (P20)

Prevents me from disturbing others and vice-versa, creates a private space for personal use. (P21)

Some privacy. (P22)

The remaining two participants were from the HCI & SD and the Distributed Systems laboratories. Comments passed by these two participants included:

The lab is yet to be renovated so the issue is soon to be rectified. (P2)

Some isolate members of the lab (maybe their preference) Good for dividing desks so that material does not go on to other people's desk. (P12)

Question 38. Would you like partitions in your lab?

Of the seven participants who originally indicated that they did not have partitions in their laboratory, six said that they did not want partitions in their laboratory. These participants are from the Digital Library (two participants), Entropy (one), Machine Learning (one) and other (two) laboratories. (See Figure 4.21.)

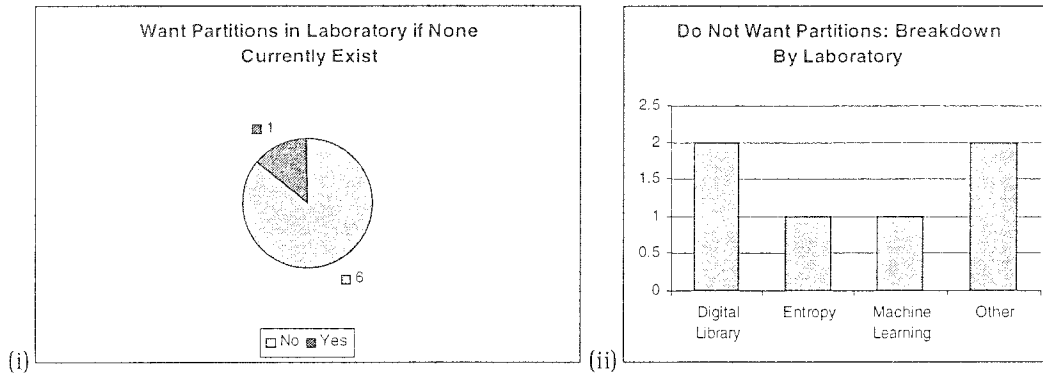


Figure 4.21. Would you like partitions in your lab? Includes (i) over all the participants who initially said no, (ii) break down of participants who do not want partitions.

Whiteboard

Question 39. Does your lab have a whiteboard?

Question 40. Do you use the whiteboard to help with any of your work?

Twenty-six participants had a whiteboard in their laboratory. Fourteen used the whiteboard to help with their work. Comments from these participants indicated that they used the whiteboard when:

Drawing preliminary designs which are easy to modify on the whiteboard. (P2)

To form a picture of what I am doing or want to - problem solving. (P3)

Group Discussion. (P4)

To ask or answer questions with another member of the lab. (P8)

When explaining to a group or to leave messages to other lab users. (P12)

Discussions, explanations, one-on-one tutorials. (P14)

Notes, sketches of network diagrams, equations etc. (P15)

<Person> explains the use of tags on web pages on it. (P16)

I use it to brainstorm ideas prior to some implementations. (P18)

To explain and diagram things. (P19)

When its clear and nobody else is working with material already on it. (P20)

Brain storming ideas / refining thoughts. (P22)

[For writing] notes. (P28)

Twelve participants did not use the whiteboard. Comments include:

Don't really need it and it is in the doorway. (P1)

I've got paper. (P5)

I use paper instead. (P6)

Not in a good place (way over by the door not near the meeting area). Hav[ing] a large display screen [is] much handier. (P7)

It's in a bad position (behind door) no whiteboard markers. (P10)

A long way from my desk, paper is much more convenient. (P11)

Its too public for me. (P13)

Usually use a pen and spare paper. (P17)

No pen to use on it can be found. It might be useful though. (P21)

Don't need it. (P25, P26)

The need doesn't arise very often. (P27)

Question 41. Would you like a whiteboard in your lab?

The two participants whose laboratories do not have a whiteboard said they would like one provided. Comments include:

I like to think and communicate visually. (P9)

The walls are a weird lime green and other colours would be nice. (P24)

Lighting

Question 42. Do you feel that your lab provides you with adequate lighting for each of your activities?

All participants thought their laboratory provided adequate lighting. However, some participants passed comments about the fluorescent lights:

Fluorescence - too bright. (P1)

Until the fluorescent lights die or flicker. (P27)

Question 43. Do you find the light coming in through the windows too bright and uncomfortable?

Twelve participants answered this question. Two participants found the outside light too bright. One participant was from the Distributed Systems Laboratory and another was from the Visual Communications/Formal Methods Laboratory.

Shared Space

Question 44. Does your lab have a shared space (e.g. table in the centre of the room that every one can share)?

Question 45. Do you use the shared space while in the lab?

Eighteen participants indicated that their laboratory had a shared space. Thirteen used the shared space. Comments included:

Formal group meetings, impromptu meetings, reading (away from computer) marking. (P1)

At times it is useful for meetings. (P5)

Have a cup of tea with others. (P6)

During meetings or group discussions. (P7)

Mainly playing CD's on a shared computer. (P9)

For marking assignments when I need some clear space away from my desk; or meetings. (P12)

Marking and discussions. (P14)

Dumping extra stuff, writing/markings, lunch. (P15)

Meetings etc. (P17)

To put things on, discussions. (P19)

Group work, meetings, lunch. (P21)

Meetings, discussions with more than 3 people. (P23)

Meetings of three or more people, Need writing or drawing space. (P27)

Six do not use the shared space. Comments included:

It's a small table pushed against the wall behind the door and next to the giant dirty bin. (P10)

Not needed. (P11)

There has been no need to. (P16)

I have no need to. (P24)

Don't need it. (P26)

Question 46. Would you use a shared space if made available in your lab?

Three participants would use a shared space, if made available. These participants came from the HCI and SD, and Entropy laboratories. Comments included:

Meetings, reading writing. (P2)

If I am tired of sitting near the computer can do some paper based work away from desk. (P13)

Paper work however space required makes this very unlikely. (P25)

Seven participants would not use a shared space, if made available. Comments included:

No need for it; all can be done at desk. (P3)

Don't have any group meetings. (P8)

As long as I have sufficient personal space I see no need for it. (P18)

No room for one, it's a small enough lab for it not to be. (P20)

Not enough room at computer (desk for all my activities) including meetings with supervisor and group work. (P22)

Summary

Question 47. What are (up to) five things that you like about your lab?

The participants listed:

Friendly atmosphere, large desks, pictures on walls, well equipped, good environment. (P1)

Air conditioning, play music without annoying anyone else. About to be renovated. (P2)

Friendly atmosphere. Ability to work uninterrupted. Small group, good PC, artwork. (P3)

Windows, Partitions gives privacy but still have contact with others, Phone, Pinboard, no shared space. (P4)

Spacious, Good lighting, good equipment good people reasonably quiet. (P5)

The view through the window, the people. (P6)

Modern computer, large spacey area, very workable desk. (P7)

Spacious, not over crowded. (P8)

Less people doing interesting things, change of people from previous environment, can play music loudly. (P9)

Workspace, relaxed atmosphere, often empty, desks are around wall edges, facing out see daylight. (P10)

People in the lab, Air conditioning. (P11)

Windows, Chairs with wheels, the printer is close, the AC unit is effective. (P12)

Enough personal work space, peaceful environment, Workspace faces away from other people, small compact, adjustable temperature, relaxing room. (P13)

Desk layout, good chairs, pleasant environment socially/work. (P15)

Quiet, nice people, comfortable desk and computer set-up, view from window, tidy. (P16)

Good lighting, big table enough work area, controllable air condition, printer in lab. (P17)

Quiet, Whiteboard, Own Machine, Lad buddies, own printer. (P18)

The people in it, the computer, the size. (P20)

The window and view keep my mind fresh/unsleepy, Partitions and their placement, large desk space and space under table. Computer is positioned. (P21)

People, privacy but it is not too isolated, resources. (P22)

The people, my computer, printer is close, have my own desk space, close to the tearoom. (P23)

Have own workspace, Computer fast/reliable, Mouse is optical, Screen is big, We can have coffee while we work. (P24)

It provides me an area to do work. (P25)

Good lighting, Good Desk. (P26)

Lots of floor space, people aren't too crowded, Good access to printers, spare machine. (P27)

Private, Can agree with labmate about preference eg music. (P28)

Question 48. What are (up to) five things that you do not like about your lab?

The participants listed:

Fluorescent lighting, lack of windows, no comfy reading chairs. (P1)

Lack of other students, Bit messy. (P2)

Printer does not work properly, scanner is missing, printer does not print pdf files and all lecture notes are in pdf form. (4)

Windows. (P5)

The big rubbish bin, the green broken unused chair, the printer does not work properly. (P6)

No daylight. (P7)

Access to the whiteboard, no windows, everybody looks into the lab when walking by, no reference books. (P8)

To close to the students I tutor, no real natural light, need to turn computer off every night, not enough space, worry about theft. (P9)

It rarely cleaned, Huge dirty bin behind the door, extremely hot in summer (one fan not enough) Over crowded, Can get too noisy. (P10)

No Windows. (P11)

Distracting when people from other labs pick up stuff off the printer, High pitch whine of the cooling fans, only one phone, not enough chairs. (P12)

No Windows, slow printer. (P13)

Too quiet. (P16)

Desk is a bit low. (P17)

Lack of colour, nowhere to relax, no windows, printer does not work properly, [no] adjustable chairs. (P18)

Size of the whiteboard, To many miscellaneous people walking in, the chairs. (P20)

Printer is often troublesome often has problems and doesn't work. (P21)

Computer screen is directly/immediately visible from the door, Air conditioning works obscurely, Printer is erratic. Chairs. (P22)

The lighting, No outside window, It is cold. (P23)

System can be a little noisy, chairs are old, I can't listen to music on my computer. (P24)

Layout, environmental management (lab boiling @ night/ 1st thing) as windows closed to keep warmth in, not the best stable environment to keep machines in. (P25)

Should have 21" monitors. (P26)

Need personal or shared filing cabinets or more shelves, No windows or natural light. (P27)

Temperature, Unlockable Window. (P28)

Question 49. On the scale of 1 to 5, below, please indicate how much you like your lab?

The average rating across all the laboratories was 4.1 ("I like my lab"). (See Figure 4.22.)

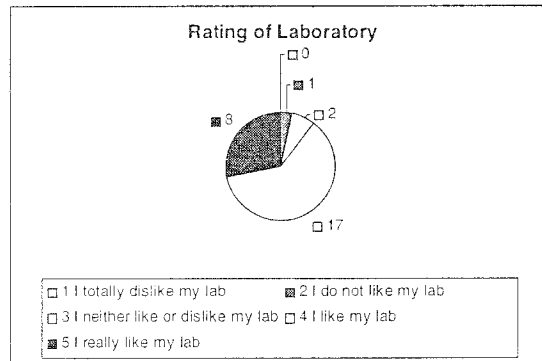


Figure 4.22. How much do you like your lab?

Figure 4.23 provides a breakdown by laboratory. Most of the ratings are either '4 I like my lab' or '5 I really like my lab'.

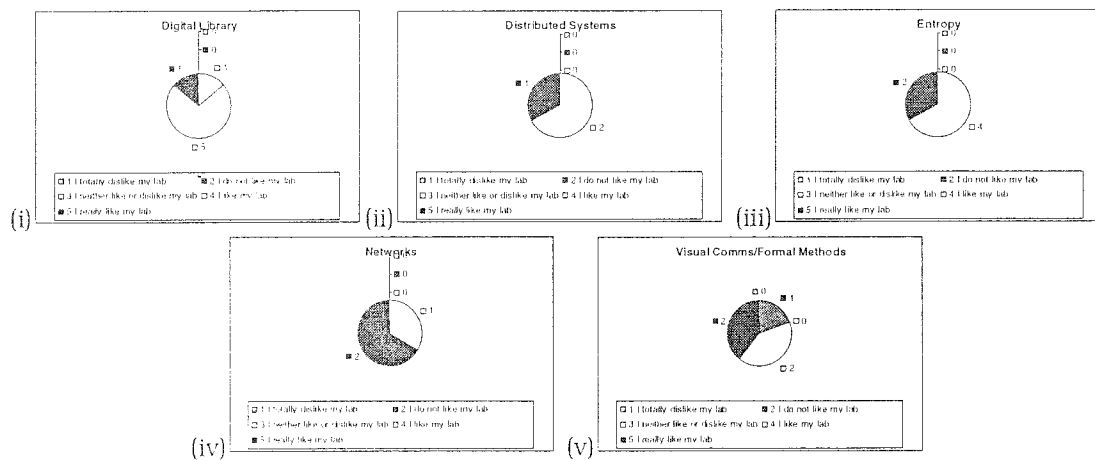


Figure 4.23. Participant rating of laboratory. Graphs are (i) Digital Library, (ii) Distributed Systems, (iii) Entropy, (iv) Networks, and (v) Visual Communications/Formal Methods. The ratings are '1 I totally dislike my lab', '2 I do not like my lab', '3 I neither like or dislike my lab', '4 I like my lab' and '5 I really like my lab'.

Question 50. How could your lab be improved to help you work better? Take into account things like a shared library, a personal bookcase, a filing cabinet, better access to printers, and so on.

The participants listed:

Digital Library

Comfortable to lounge and read, change the lighting, adding a draw to the desk, coat hooks, shared article library. (P1)

Install a Playstation. (P7)

Comfortable place to read. Adjustable chairs, coat hooks. (P23)

Bigger monitors. (P26)

Filing cabinets or small drawers under each desk. More bookshelf space. (P27)

Distributed Systems

Flat panel monitors would increase desk space and reduce glare. (P12)

A filing cabinet. (P16)

Entropy

A shared library, personal bookcase, better access to the whiteboard. (P3)

Few books in the bookshelves, removing the window on the door would be nice. (P8)

Better printer. (P13)

Few posters, small couch or comfy chair for reading purposes and relaxing, fix the printer. (P18)

More privacy from people who come in and just look around, printer is temperamental, better chairs. (P20)

More books, Better Printer, Better Chairs, Spare Linux machine that anyone can use. (P22)

Machine Learning

A bookcase would be nice. (P24)

Networks

Couches, In chair massages. (P15)

Other

Security on windows, currently all computer with Led screens must be turned off – theft. (P9)

Visual Communications/Formal Methods

Personal Bookcase, Filing cabinet attached to each desk, reliable printers, Vacuum the lab once a week (doesn't get cleaned, Smaller dust bin. (P4)

Layout need to be different, regular cleaning, replace bin, useable communal room, air conditioning or more heaters, small drawers for our desks, get rid of the trailing wire across the middle of the room. (P10)

Personal Bookcase, Sleeping bag from home to put under my desk if I have a really late night. (P21)

Better space and environmental management. (P25)

Summary

This report represents the results of a survey conducted by the University of Waikato Usability Laboratory of the research laboratories at the Department of Computer Science, The University of Waikato, Hamilton, New Zealand. The study was conducted on behalf of the Department of Computer Science.

The goal of the research was to:

- Inform the development of future laboratories.
- Inform the process any of re-development of current laboratories.
- Provide information about the use and acceptance of the laboratories.

The survey took place over July and August 2002.

Summary of Findings

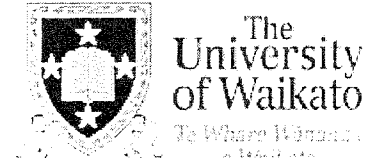
Laboratories should be provided with:

- Computers and workstations for each individual resident.
- Desks greater than 1400mm wide and preferably L-shaped. Easily accessible pin-boards at each desk. Under-desk lockable drawers and filing cabinets.
- Computers a minimum 15" flat or 17" (normal) screens. (Residents can place the computer boxes where they are most comfortable, however under the desk will provide more desk space.)
- Chairs with height and back adjustment.
- Shared work areas e.g. a central table, an accessible and semi-private whiteboard, and LIDS.
- Shared relaxing facilities e.g. comfy chairs, bean-bags, and coffee tables.
- Shared resources e.g. printers, pin-boards, bookshelves with technical books, research books and journals, and staplers. Easy access to a scanner should also be considered.
- Provisions to make the laboratories more attractive e.g. pictures, imitation plants.
- Good environmental management e.g. small and clean rubbish bins, comfortable air conditioning and regular cleaning.
- Good lighting and lighting maintenance including blinds or nets on external windows to dull any glare.
- Good security and privacy e.g. covering door-windows, placing furniture so that computer screens are not immediately visible from the door, security on external windows if in the basement, partitions that provide privacy but do not isolate.

The University of Waikato

Usability Laboratory

Department of Computer Science
University of Waikato
Hamilton, New Zealand



Survey of the Computer Science Research Laboratories

To: Computer Science post-graduate, graduate and 420 students (and other research laboratory residents)

From: Kirsten Thomson

Date: Tuesday, 16 July 2002

Re: Survey of the Computer Science Research Laboratories

The Usability Laboratory is conducting this survey on behalf of the Department of Computer Science at the University of Waikato. The main purpose of the survey is to evaluate the research laboratories, with the aim to inform the development of future laboratories.

Please find the survey enclosed. In it, we ask a range of questions relating to personal details, your use of your laboratory, occupational safety and health issues, your thoughts of your laboratory use including your interaction and collaboration with other laboratory users, and your general laboratory environs including your desk and computer, whiteboards, lighting, shared spaces and so on.

We would appreciate it if you could fill in this survey and return it to Pauline in the Department of Computer Science office as soon as possible.

If you require any further information, please do not hesitate to contact me. (My extension is x5116 and my e-mail address is kthomson@cs.waikato.ac.nz.)

Thank you in advance for your time and efforts.

Kirsten Thomson

*Manager,
The University of Waikato Usability Laboratory.*

The University of Waikato

Usability Laboratory

Department of Computer Science
University of Waikato
Hamilton, New Zealand



The
University
of Waikato
Te Whare Wānanga
o Waikato

Thank you for participating in this survey.

The main purpose of this survey is to evaluate the research laboratories in the Department of Computer Science (at the University of Waikato). Please note, confidentiality and participant anonymity will be strictly maintained. All information gathered will be used for statistical analysis only; no names or other identifying characteristics will be stated in the final or any other reports.

Researcher

Kirsten Thomson, the manager of the Usability Laboratory is administering this study.

Finding Out About Results

To learn about the results of the study contact Kirsten Thomson (07 858 5116 or by email at usability@cs.waikato.ac.nz) after the completion of the study.

Survey

Personal Details

1. Name:

2. Age:

(Select only one option.)

18-20

21-25

26-30

31-35

36-40

41-45

>46

3. Gender:

(Select only one option.)

Female.

Male.

4. Email address:

5. Are you left- or right- handed?

(Select only one option.)

Left-handed.

Right-handed.

Please answer the questions below to the best of your ability.

Your Laboratory

6. Which laboratory do you work in?

(Please note, if you work in more than one laboratory, you will need to fill one survey form for each lab that you work in. Spare surveys can be found with Pauline, at the Department of Computer Science office, or Kirsten Thomson, in the Usability Laboratory (G1.14).)

(Select only one option.)

Digital Library Lab (G2.01)

Distributed Systems Lab (G1.04)

Entropy Lab (G2.12)

Formal Methods Lab (G2.27)

Human-Computer Interaction & Software Development Lab (G1.31)

LIDS Lab (GB.20)

Machine Learning Lab (G2.01)

Usability Lab (G1.13)

Visual Comms Lab/Formal Methods Lab (G2.06)

Networks Lab (G1.03)

Wand Lab (G1.32)

Other. Please specify:.....

7. Who is the person in charge of your lab?

(Select only one option.)

I do not know.

Please specify the person's name:.....

Purpose of Being in Your Lab

8. What is the main reason for you being in your laboratory?

(Select only one option.)

- I am here as a student. Please go to question 9.
- I am here as a research assistant. Please go to question 10.
- I am here as a programming assistant. Please go to question 10.
- I use the lab for a purpose other than those listed above.

Please specify:..... and then go to question 10.

9. Please indicate which degree you are currently completing.

(Select only one option.)

- BCMS
- BSc
- Postgraduate Diploma
- MCMS
- MSc
- MPhil
- PhD
- Other. Please specify.....

Your Use of Your Lab

10. How many years have you been in your lab?

(Select only one option.)

- <1
- 1
- 2
- 3
- 4
- 5
- >5

11. On average, how many hours per week do you spend in your lab?

(Select only one option.)

- <5
- 6-10
- 11-20
- 21-30
- 31-40
- 41-50
- 51-60
- >60

12. What activities do you do in your lab?

(Select those options that apply.)

- Writing/typing on the computer.
- Reading on the computer.
- Writing on paper.
- Reading paper-based artifacts e.g. books, papers, manuals.
- Interacting with others through impromptu discussions (that last longer than 15 minutes at one time).
- Interacting with others in planned meetings.
- Interacting with others about group work/assignments.
- Other(s): Please specify.....
.....
.....

Occupational Safety and Health (OSH)

13. Have you ever consulted with any one (e.g. Harry Johnson) over your OSH requirements?

(Select only one option.)

- No.
- Yes.

Working in Your Lab

14. Do you find that your lab is generally conducive to study?

(Select only one option.)

No. Please explain:

.....

Yes.

15. Do you have to share your desk and computer with other people?

(Select only one option.)

No. Please go to question 18.

Yes.

16. Do you share your desk and computer with other people:

(Select only one option.)

Infrequently

Sometimes

Often

Frequently

17. Do you find that sharing your desk and computer with other people inhibits the way that you work?

(Select only one option.)

Significantly. Please explain how:.....

.....

Sometimes. Please explain how:

.....

Not really.

18. Do you generally enjoy spending time in your lab?

(Select only one option.)

No.

Yes.

19. What areas of your lab would you define as your own or a shared workspace?

20. Do you generally have sufficient personal space in your lab?

(Select only one option.)

No.

Yes.

21. Please rate the general environment within your lab along the following scales.

(Circle the number nearest the term that best matches your feelings.)

Noisy.....3.....2.....1.....0.....1.....2.....3.....Quiet

Impersonal.....3.....2.....1.....0.....1.....2.....3.....Personal

Unworkable.....3.....2.....1.....0.....1.....2.....3.....Very workable

Uncomfortable.....3.....2.....1.....0.....1.....2.....3.....Comfortable

Unenjoyable.....3.....2.....1.....0.....1.....2.....3.....Enjoyable

Unfriendly.....3.....2.....1.....0.....1.....2.....3.....Friendly

Unattractive.....3.....2.....1.....0.....1.....2.....3.....Attractive

Interacting and Collaborating with Other Lab Users

22. Do you generally like to collaborate and interact with other people while in your lab?

(Select only one option.)

No. Please go to question 24.

Yes.

23. Does the way that your lab is set up and its general environs encourage you to collaborate and interact with other people while in your lab?

(Select only one option.)

No.

Yes.

24. How often do you find yourself collaborating and interacting with other people in your lab for 15 minutes or longer at one time?

(Select only one option.)

- Multiple times a day.
- Multiple times a week.
- Less frequently than either option above.

Your Desk and Computer

25. Do you have a pin board at your workspace?

(Select only one option.)

- No. Please go to question 27.
- Yes.

26. Do you use your pin board?

(Select only one option.)

- Yes. Please go to question 28.
- No. Please go to question 28.

27. If one was made available to you, do you think you would use it?

(Select only one option.)

- Yes.
- No.

28. In the space provided below, please draw your desk and your workspace. Include the shape of your desk, the position of your computer, mouse and keyboard, the position of any other artifacts (e.g. books, papers) that you frequently keep on your desk, and the area of the desk that you use to write.

29. Using the paper measure provided, please measure the height, depth and length of your desk. Please indicate the measurements on your drawing above.

30. Taking into account all the activities that you do at your desk, do you find that the shape of your desk provides a useful work area?

(Select only one option.)

Yes. Please explain why:

.....

No. Please explain why not:

.....

31. Is your desk generally comfortable to sit at?

(Select only one option.)

Yes.

No. Please explain what would make your desk more comfortable:

.....

31. Is your chair generally comfortable to sit in?

(Select only one option.)

Yes.

No. Please explain what would make your chair more comfortable:

.....

Your Computer

32. What size is your computer screen?

(Select only one option.)

15"

17"

19"

21"

Other. Please specify:.....

33. Is this genuinely sufficient for your needs?

(Select only one option.)

- Yes.
- No.

34. Where does your computer box sit?

(Select only one option.)

- Under the monitor
- Beside the monitor
- Under the desk
- Other. Please specify:.....

35. Do you find the position of your box a help or a hindrance?

(Select only one option.)

- I find it a help. Please explain:
.....
- I neither find it a help or a hindrance.
- I find it a hindrance. Please explain:
.....

Partitions

36. Does your lab have partitions?

(Select only one option.)

- Yes. Please go to question 37.
- No. Please go to question 38.

37. Do you like the way the partitions are used?

(Select only one option.)

- Yes. Please explain why:
.....and then go to question 39.
- No. Please explain why not:
.....and then go to question 39.

38. Would you like partitions in your lab?

(Select only one option.)

Yes. Please explain why:

.....

No. Please explain why not:

.....

Whiteboard

39. Does your lab have a whiteboard?

(Select only one option.)

Yes. Please go to question 40.

No. Please go to question 41.

40. Do you use the whiteboard to help with any of your work?

(Select only one option.)

Yes. Please explain the circumstances in which you use the whiteboard:

.....

.....and then go to question 42.

No. Please explain why not:

.....and then go to question 42.

41. Would you like a whiteboard in your lab?

(Select only one option.)

Yes. Please explain why:

.....

No. Please explain why not:

.....

Lighting

42. Does you feel that your lab provides you with adequate lighting for each of your activities?

(Select only one option.)

Yes.

No. Please explain for which activity and why you feel that not enough lighting is provided:

43. Does you find the light coming in through the windows too bright and uncomfortable?

(Select only one option.)

Yes.

No.

This question does not apply to my lab.

Shared Space

44. Does your lab have a shared space (e.g. table in the centre of the room that every one can share)?

(Select only one option.)

Yes. Please go to question 45.

No. Please go to question 46.

45. Do you use the shared space while in the lab?

(Select only one option.)

Yes. Please explain the circumstances in which you use the shared space:.....
.....and then go to question 47.

No. Please explain why not:

46. Would you use a shared space if it was made available in your lab?

(Select only one option.)

Yes. Please explain the circumstances in which you use the shared space:.....

.....
.....

No. Please explain why not:

.....
.....

Summary

47. What are (up to) five things that you like about your lab?

- 1.
- 2.
- 3.
- 4.
- 5.

48. What are (up to) five things that you do not like about your lab?

- 1.
- 2.
- 3.
- 4.
- 5.

49. On the scale of 1 to 5, below, please indicate how much you like your lab?

(Select only one option.)

1	2	3	4	5
I totally dislike my lab	I do not like my lab	I neither like or dislike my lab	I like my lab	I really like my lab

50. How could your lab be improved to help you work better? Take into account things like a shared library, a personal bookcase, a filing cabinet, better access to printers, and so on.

Thank you for your time and efforts.

Please return this survey to Pauline at the Department of Computer Science office.