

## Occupational Overuse Syndrome (OOS) and computer use among NTEU members at Central Queensland University

A C Lynn Zelmer  
Central Queensland University  
July 2000

### Preface

A study such as this on OOS and computer use could not have been conducted 10 years ago as most academic staff did not use computers to a significant extent at that time. Technical staff were more likely to have used computers or typewriters ten years ago, but among the general staff as a whole keyboard usage has increased many fold. This study, therefore, is a preliminary snapshot of the result of roughly the first ten years of computer use among the staff of one university. Unfortunately, the responses appear to indicate significant problems which will only get worse unless staff change their work practices and working conditions are improved.

### Summary

This paper reports on a pilot study of Occupational Overuse Syndrome (OOS) and computer use conducted in March 2000 with members of the National Tertiary Education Industry Union (NTEU) at Central Queensland University (CQU). OOS is a musculoskeletal disease. Formerly known as Repetitive Strain Injury (RSI) or sometimes Cumulative Trauma Disorder (CTD), it refers to the injuries, often long-term and very painful, that result from repeated physical movements damaging tendons, nerves, muscles, and other soft body tissues. In other words, OOS results from ignoring the aches associated with repetitive tasks or the maintenance of constrained postures, particularly when associated with poorly designed or equipped workplaces.

The author has been the NTEU representative to the CQU Health and Safety Committee for some years and recently retired from CQU after an OOS incident resulting from prolonged keyboard/mouse use. CQU is a multicampus university and distance education provider which, like most Australian educational institutions, has requirements for both staff and students to use computers on a regular basis. OOS and stress, seemingly related in many cases, are two major reasons for lost work days at CQU and anecdotal evidence suggested that many students are similarly affected. The CQU Branch of the NTEU, representing the majority of the full time staff of the university and a much smaller proportion of casual staff, authorised the pilot study to help determine the union's response to this health/industrial issue.

While some individuals have indicated to the author, perhaps in jest, that they were 'too busy' or 'too stressed out' to complete the questionnaire, a 22.6% raw response rate (n=72) was received for the three page questionnaire distributed to a membership list of 319 academic and general staff on CQU's several campuses.

The survey results indicate that OOS and related issues of workplace hygiene are concerns for CQU staff, that many, if not most, computer workstations at CQU lack basic ergonomic design features, and that OOS is likely to continue to result in significant lost time at CQU unless this situation is improved.

The survey was designed to preserve the confidentiality of respondents, thus it is not possible to follow-up individual cases. However, a likely further step is to conduct in-depth interviews with a selected sample of members to collect additional information and to explore options for improving the situation. The CQU Student Association has also indicated a desire to conduct a similar survey among students.

### Background

By 1998-99 it was apparent that Occupational Overuse Syndrome (OOS) and seemingly related stress problems had become major causes of lost work time at CQU. Anecdotal evidence to the author indicated that the problem might be even more serious with students in heavy computer use courses such as Information Technology, Information Systems and Multimedia.

In 1999 the University Health and Safety Committee (UH&SC) requested an academic from the School of Health and Human Performance to determine the extent of the potential problems by surveying CQU staff and students. While this was planned for early 2000, the departure of that academic late 1999 effectively meant that the survey was abandoned.

As a result the Executive of the CQU Branch of the National Tertiary Education Union (NTEU) authorised a pilot survey of members to initiate the process. It was anticipated that this might lead to further studies with the Student Association in particular having expressed an interest in surveying the student body.

The author, a NTEU life member and recently retired, agreed to supervise the survey. The author has been the NTEU representative to the UH&SC for some years and himself suffers from the effects of prolonged keyboard/mouse use. A request for assistance in conducting the pilot survey was made of union activists but no response was received. However, assistance was received from the Queensland Workers Health Centre and is gratefully acknowledged, as is the assistance of the Branch Secretary in preparing mailing labels and sending out reminder notices, but the author accepts responsibility for any faults in the survey and its analysis.

### Survey Procedure and Limitations

The survey instrument (Appendix A) was primarily designed from the author's knowledge of OOS as it results from computer use. The survey attempts to collect enough demographic data to analyse the results, information on computer use, extent of adverse effects, and a description of the individual's general computer work place. Respondents were assured that replies to the survey would be kept confidential and the results only presented in aggregate form.

The instrument contained a general explanation and rationale for the survey, the survey questions and a page of further information entitled 'RSI on the Internet' from the Spring 1999 issue of the ACT RSI Support Group Newsletter. This latter page had a blank back which, when folded to the outside, received the address label for delivery via internal campus mail and could be removed to ensure confidentiality of the reply.

A total of 319 survey forms were distributed using the most recent (mid-March 2000) version of the NTEU membership list. Unfortunately, while there was considerable staff turn-over at the end of 1999, departing members remain on the membership list until the end of March unless they explicitly advise the union of their departure. It may also take some time for new members to appear on the membership list for printing address labels.

Reminder notices were sent by e-mail to the activists mailing list and to the complete staff list. Several members responded that they had lost or thrown out their forms and requested another, resulting in some forms being received after the initial survey deadline. A separate count was not kept of these individuals as they had initially received the form.

One form was returned indicating that the addressee was no longer at CQU; 71 were returned all or partially completed; and one individual responded by e-mail indicating that "[I found] the survey tedious and consigned it to the round file". Counting the e-mail message, there was a 22.6% response rate. Anecdotal comments to the author indicated, perhaps in jest, that others were either "too stressed" or "too busy" to respond.

Reviewing the completed form it is obvious that some questions were unclear, and thus misunderstood. For example, Question 7 "Number of hours per day spent using the computer over the last month" sometimes received replies for either a weekly or monthly total. These were converted to a daily total using a month of four weeks and a week of five days. Similar interpretations for other questions were made consistently and are noted in the results section.

Clarifying these questions, and simplifying or eliminating others, is required prior to the survey instrument being used for a wider audience.

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Finally, it should be remembered that the results are self-reported and some staff obviously had considerable difficulty either remembering or categorising their activities. This is particularly so for the quantitative replies (hours per day, minutes between breaks, etc.) but also means that descriptors such as heavy or light have different meanings for each individual.

### Survey Results

**Demographics:** Table 1 provides details of the age range and category of respondent (Question 4 by 1 and 2). The small number of part-time staff responses can be partly explained by the NTEU's lack of success in recruiting significant numbers of CQU staff in the younger age ranges, however, both academic and general full-time staff were well represented across the age ranges. No respondents indicated that they occupied a 'supervisory' position, although the NTEU does have a number of members in such positions. Gender was not requested in the survey.

	Age: 26-35	36-45	46-55	56+	N/A	%	Total
<b>Acad F/T</b>	4	8	20	5	0	51.4%	37
<b>Acad P/T</b>	-	2	-	4	0	8.3%	6
<b>Gen F/T</b>	4	12	8	1	0	34.7%	25
<b>Gen P/T</b>	-	2	-	-	1	4.2%	3
<b>N/A</b>	-	-	-	-	1	1.4%	1
<b>%</b>	11.1%	33.3%	38.9%	13.9%	2.8%	100%	-
<b>Total</b>	8	24	28	10	2	-	N=72

Table 1: Respondents by age and category of employment

The degree of rapid "two-finger" typing skill reported (Table 2, Question 5 by sorted by Questions 1 and 2) would not be a surprise to anyone visiting a university office or work area, although some observers might argue that respondents were sometimes over-stating their level of skill. In any event, the low proportion of academics able to touch type (30.2%) likely indicates that a large proportion also have poor posture when using the computer. Individuals who are forced to watch the keyboard while typing, however fast they type, almost certainly slump over their keyboard as they work.

Anecdotal evidence would also suggest that many academics simply do not believe that institutional policies and reminder signs about periodic breaks from keyboards, the utility of ergonomic work stations, or the desirability of proper lighting apply to them.

Keyboard Use:	Hunt & Peck	Rapid Two-Finger	Touch Type	Total
<b>Academic</b>	7.0%, n=3	62.8%, n=27	30.2%, n=13	43
<b>General</b>	12%, n=3	28%, n=7	60%, n=15	25
<b>%</b>	8.8%	50%	41.2%	N=68

Table 2: Keyboard use by category of employment

It is important to remember that the responses to Question 6 (years using computer/typing) are indicating how long respondents have been using a keyboard, not a computer. A decade ago almost 100% of CQU's computer users would have been a relatively insignificant number of staff in either in the Computer Centre (general staff) or academics in the Department of Mathematics and Computing. A much larger proportion of staff would have been typewriter users, either as a function of their employment (general staff) or in order to prepare their own papers and reports (academic and general staff).

Almost all of the academic staff and a large proportion of the general staff respondents had been using a keyboard for more than five years (98% and 60% respectively), and a significant number for 16 or more years (39.4%).

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<b>Years Using Computer:</b>	<b>&lt;5</b>	<b>5-10</b>	<b>11-15</b>	<b>16+</b>	<b>Total</b>
<b>Acad F/T</b>	1	11	11	14	37
<b>Acad P/T</b>	-	2	1	3	6
<b>Gen F/T</b>	3	9	2	11	25
<b>Gen P/T</b>	1	2	-	-	3
<b>%</b>	7%	33.8%	19.7%	39.4%	
<b>Total</b>	5	24	14	28	N=71

Table 3: Years using computer by category of employment (Questions 1, 2 & 6)

If computer use was not common a decade ago, its use now is not only commonplace, but appears to have overtaken all other forms of activity for many members. Table 4a breaks down the usage by hours per day while Table 4b provides a statistical summary of use (Question 7).

The personal health implications of the amount of time on a computer keyboard are significant. The industrial implications, however, are even more alarming. A working day is nominally 7.5 hours; the proportion of members spending more than seven hours per day using their computer for work is 22.2% for academic and 37.5% for general full-time staff. Almost all respondents indicated that the reported workload is typical of their normal duties.

<b>Hours/day:</b>	<b>1-2</b>	<b>3-3.5</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7-8</b>	<b>9-12</b>	<b>Total</b>
<b>Acad F/T</b>	4	6	5	5	8	5	3	36
<b>Acad P/T</b>	3	1	-	1	-	1	-	6
<b>Gen F/T</b>	6	2	2	3	2	8	1	24
<b>Gen P/T</b>	1	1	-	1	-	-	-	3
<b>%</b>	20.3%	14.5%	10.1%	14.5%	14.5%	20.3%	5.8%	
<b>Total</b>	14	10	7	10	10	14	4	N=69

Table 4a: Hours per day of computer use in last month—CQU—Respondents

	<b>Mean</b>	<b>Mode</b>	<b>Max</b>	<b>% Typical</b>
<b>Acad F/T</b>	4.97 hrs	6 hrs	10 hrs	97.2% Yes
<b>Acad P/T</b>	3.3 hrs	2 hrs	7 hrs	100% Yes
<b>Gen F/T</b>	5.1 hrs	2 hrs	12 hrs	95.8% Yes
<b>Gen P/T</b>	3.5 hrs	-	5 hrs	100% Yes

Table 4b: Hours per day of computer use in last month and whether typical—CQU

Members also spent an average of 2.1 hours per day using computers outside of work. Given the wording of the questionnaire this figure likely includes CQU work performed at home. While Table 5 does not break this down by category of employment, it is obvious that most staff are spending in excess of 7 hours per day at a computer keyboard.

<b>Hours/day</b>	<b>.5</b>	<b>1-1.5</b>	<b>2</b>	<b>3-4</b>	<b>5</b>	<b>6</b>	<b>Total</b>
<b>n=</b>	4	9	9	4	3	1	N=30

Table 5: Hours per day of computer use in last month—Other (ie not at CQU)

General staff members appear to manage their computer work time better than their academic colleagues (see Table 6, Question 12). On average they take a break every 36.4 minutes while academics only break every 54.1 minutes. This is balanced by some general staff appearing to take no breaks from their computer during the working day. Respondent's descriptions of their break activities suggests that often the break is an interruption rather than a proper break. Comments such as 'stretching, walking, handwriting, filing' are encouraging, but a more typical work day for many is likely 'Twenty minutes morning tea and 45 minutes lunch break. Usually take no more than 5 mins for a toilet break'.

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	Mean	Min-Max	Mode
<b>Academic</b>	54.1 min, n=34	2-120 min	30-60 min
<b>General</b>	36.4 min, n=30	3-240* min	20-45 min

Table 6: Time between breaks in minutes (\* Assumed 240 min, respondent indicated no breaks in day)

Computer work is not necessarily steady work, even when the operator is not taking breaks. On average, respondents indicated that their work was interrupted every 18-23 minutes (Table 7, Question 18). However, this interruption likely causes more stress than it relieves as members seemingly do not utilise these interruptions to stretch or otherwise engage in break activities.

Responding to Question 19 about how these interruptions are handled, responses ranged from 'I respond' to 'Expected part of the job; but it distracts job flow or thinking and results in lost time'. Some vary their responses depending upon the nature of the current work, 'Usually handle calls as they occur. Occasionally if working on an urgent matter, allow telephone to direct to voice mail.' Others solve the problem by working at home: 'If at home rarely interrupted, at CQU often, people walk past, noise in corridor, [specific colleagues] can be noisy as can some [specific program] academics.'

	Mean	Min-Max	Mode
<b>Academic</b>	23.2 min, n=28	5-60 min	10-15 min
<b>General</b>	18.5 min, n=20	1-40 min	15 min

Table 7: Time between interruptions in minutes

Although there were significant differences between academic and general staff computer use, writing, or composing text as you enter it, followed by e-mail/web mail, were the most common computer tasks for all respondents. Table 8 (Question 17) indicates that general staff tasks were more varied overall.

Task:	Copy typing	Writing	E-mail/web mail	Web search	Program coding	Data entry/ret
<b>Academic</b>	2.3%	50.6%	23.5%	9.0%	2.0%	5.1%
<b>General</b>	9.4%	23.3%	16.0%	8.2%	3.4%	13.8%

  

Task:	Games	Artistic	Page layout	System admin	Other
<b>Academic</b>	0%	2.6%	1.6%	0.7%	2.7%
<b>General</b>	0.5%	5.1%	13.7%	6.7%	0%

Table 8: Percent of total computer use (all computers, all locations) for defined applications

**Health Status:** No respondents indicated that their health status was bad, most feeling that their health was excellent or good. In interpreting Table 9 it should be noted that the categories in Question 20 were meant to indicate a range from excellent to bad; respondents may have misunderstood that average was worse than good.

Health status	Excellent	Good	Average	Bad
<b>Academic</b>	29.3%, n=12	53.7%, n=22	17.1%, n=7	0 N=41
<b>General</b>	34.6%, n=9	53.8%, n=14	11.5%, n=3	0 N=26

Table 9: Health status—Excellent, Good, Average to Bad

The survey of selected ailments (Question 21) resulting from computer use revealed that problems focussing eyes was experienced frequently or occasionally by 69.2% of respondents, headaches by 57.8% and lower back pain by 47.6% (Table 10). Significantly, and somewhat as might be expected, only 11.1% of respondents reported pain in their non-mousing arm while 50% reported similar pain in their mouse-using arm.

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Ailments/ pain	Eye Focus	Head- ache	Lower back	ARM: mousing	non- mousing
Frequently	9	3	11	8	1
Occasion	36	34	19	24	6
Never	20	27	33	32	56

Table 10: Number of respondents experiencing selected ailments as a result of computer use  
CQU staff are reluctant to take sick leave or otherwise miss work as a result of computer-related ailments or pain (Question 22). Only 12.7% reported loss of work time, yet 70.4% sought medical assistance for the same ailments/pain (Question 23). Table 11 provides details.

	Sick leave		Med Assist	
	Yes	No	Yes	No
Academic	5	38	15	28
General	4	24	7	21

Table 11: Respondents seeking medical assistance for computer-related ailments/pain

**Work area and support:** The author's experience and anecdotal evidence suggested that computer users frequently talk on the phone while accessing student records, using databases, etc., or use the computer while participating in teleconference meetings, etc. The responses to question 36, 'Do you frequently talk on the phone while using the computer?', bore out this supposition. Table 12 shows that more than half of respondents frequently use the phone while on the computer, yet almost none have shoulder cradles, speaker phones or headset and microphone units to ease the neck strain—and even those numbers are inflated by two respondents who have access to all three types of aid.

Phone use and aids	Computer + Phone: Yes	Computer + Phone: No	If Yes: & Cradle	If Yes: & Speaker	If Yes: & Headset
Academic	51.2%, n=22	48.8%, n=21	2	4	2
General	64.3%, n=18	35.7%, n=10	2*	3*	3*

Table 12: Computer use while talking on the phone and number of users with aids (\* This figure appears inflated as two users have all three aids)

Many staff did seek improvements (Question 31) to an unsatisfactory work situation (45.6%) but almost a third (32.4%) did not, while 22.5% indicated that they didn't feel that it was applicable (N=68). Those who did seek improvement indicated the responses ranged from 'Spoke to Professor and HoS who seem to have ignored the situation' to 'office chair supplied'. Others, perhaps misunderstanding the difference between health and safety and productivity appeared to have been satisfied with 'faster and better'.

The attitude of those who did not seek such assistance may be similar to the individual who did not because 'No time and assistance is so slow in coming, it's a low priority'.

Perhaps the most damning responses were to Questions 36. When asked if their work unit had health and safety policies or guidelines or workplace standards for computer use, almost half (48.6%, see Table 13) indicated 'No' or wrote in 'don't know'. The lack of response from a further 6.9% likely indicates that they were also unaware of such policies/guidelines.

Policies/ Guidelines:	Yes	No (incl. don't know)	n/a	Total
Responses	44.4%, n=32	48.6%, n=35	6.9%, n=5	100%, N=72

Table 13: Awareness of health and safety policies or guidelines or workplace standards for computer use

The university's health and safety policies or guidelines or workplace standards for computer use are posted on the web: [http://www.cqu.edu.au/documents/unipol/health\\_safety\\_policy.htm](http://www.cqu.edu.au/documents/unipol/health_safety_policy.htm). Respondents to Question 37, on how the policies were communicated to staff and students, generally seemed unaware of this or how the policies/guidelines are to be communicated. One respondent, for example, after responding 'No' to Question 36, replied 'obviously not' to Question 37.

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Other responses were:

'leaflets', 'The onus is on individuals to judge how to interpret the guidelines', 'not actively communicated', 'notices on walls, etc.', 'person to person', 'e-mail, computer stickers', 'don't know' [several times], 'The workplace H&S office sends e-mails from time to time', 'poorly', 'workplace policy on web', 'notices posted', 'irregularly, I believe that I have at least one copy, but it's stored', 'electronically (sic!)', 'notices', 'Notices in photocopy room, periodic e-mails from [Faculty H&S representative]', 'On stickers; **no one** in ITD does only 5 hours per day on PCs ' [emphasis in original], 'notices posted', 'Notice Board', 'a piece of warning paper sticks on the screen', 'on CQU web pages; single old notice about breaks', 'we find out for ourselves', 'not done systematically', 'very infrequently; through wall posters mostly', 'stickers on computers do remind re breaks', and 'on recruitment'.

### Implications for the Future

As was indicated in the preface, a study such as this could not have been conducted ten years ago. In the intervening decade all CQU staff have been given access to computers for e-mail and web use and most have university-supplied computers on their desk.

This report does not deal with the survey's questions regarding work stations and ergonomics as the health and safety concerns expressed in the responses to the study raise more significant concerns about health and safety policy and its application.

Why, for example, are so few staff aware of the university's policies on computer use? Is it, as some respondents implied, that senior staff do not care about the health of staff as long as the work gets done?

What are the implications for students when their role models (academic and general staff) ignore basic health and safety considerations and appear to be so ignorant of good practice?

Health and safety has been a concern in all of the enterprise bargaining agreement (EBA) negotiations with CQU but it is obvious that much more needs to be done to achieve a workplace where the health of workers, particularly with regard to OOS, is given equal emphasis to productivity. What then is the role of the NTEU in achieving this?

The university has a 'duty of care' to provide a safe workplace, thus the implications of poorly designed staff workplaces must be a university concern. Health and safety, though, must also become an individual affair. What are the implications for the individuals if they feel that they cannot take time from their duties for basic stretching and stress relief, let alone to seek medical assistance for their work-induced ailments and pain?

This study was initiated because the author had a major computer-related OOS incident and anecdotal evidence suggested that there was the potential for a major computer-related health and safety problem at CQU. Unfortunately, the results of this study bear out the anecdotal evidence, suggesting that OOS and related stress illness will become an even more significant workplace problem in the future.

### Appendix A, the four page survey instrument follows.

The OOS information page included with the survey has not been included.

## **OOS and computer use among NTEU members at CQU: Pilot Study Report**

Appendix A: Pilot Survey: OOS and computer use among NTEU members at CQU

### **Purpose of the Pilot Study**

Occupational Overuse Syndrome (OOS) or musculoskeletal disease was formerly called Repetitive Strain Injury (RSI) and in some countries is better known as Cumulative Trauma Disorder (CTD). Essentially it refers to the injuries, often long-term and very painful, that result from repeated physical movements doing damage to tendons, nerves, muscles, and other soft body tissues. In other words, OOS results from ignoring the aches associated with repetitive tasks or the maintenance of constrained postures, particularly when associated with poorly designed or equipped workplaces.

Occupations ranging from meat packers to musicians have characteristic RSIs that can result from the typical tasks they perform. The rise of computer use and flat, light-touch keyboards that permit high speed typing have resulted in an epidemic of injuries of the hands, arms, and shoulders. Use of pointing devices like mice and trackballs are as much a cause, if not more so. The thousands of repeated keystrokes and long periods of clutching and dragging with mice slowly accumulates damage to the body : another name for the condition is Cumulative Trauma Disorder. This can happen even more quickly as a result of typing technique and body positions that place unnecessary stress on the tendons and nerves in the hand, wrist, arms, and even the shoulders and neck. Lack of adequate rest and breaks and using excessive force almost guarantee trouble. (Paul Marxhausen, Computer Related Repetitive Strain Injury, Univ. of Nebraska-Lincoln / Electronics Shop RSI Web Page /, 1996, <http://www.engr.unl.edu/ee/eeshop/rsi.html> /)

OOS and stress, seemingly related in many cases, are two of the main reasons for lost work days at CQU and anecdotal evidence suggests that many students are similarly affected. The CQU Branch of the NTEU is concerned about this situation and has authorised this pilot study to help determine the union's response to this health/industrial issue.

If the results of this pilot study indicate that further study would be appropriate, similar studies will likely be conducted with CQU students, etc.

### **Management of the Study**

The pilot study is being conducted by Lynn Zelmer, recently retired from CQU's full-time staff and a life member of the NTEU. Dr Zelmer has been the NTEU representative to the CQU Health and Safety Committee for some years and himself suffers from the effects of prolonged keyboard/mouse use. The study is being conducted in consultation with the Queensland Workers Health Centre.

Remove the page with your address, fold and tape/staple the completed questionnaire so that the address below is visible and return by 7 April 2000 via CQU internal mail to Lynn Zelmer, Faculty of Informatics and Communication, Building 19, Rockhampton Campus. Queries about the survey should be sent to [L.Zelmer@CQU.edu.au](mailto:L.Zelmer@CQU.edu.au).

### **Confidentiality**

Replies to this pilot survey will be kept confidential and the results will only be presented in aggregate form to maintain individual confidentiality.

**Thank you for participating in this pilot study...**

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**Please return by 7 April 2000 via CQU Internal Mail**

**Deliver to: NTEU/CQU Branch OOS Survey  
c/- Lynn Zelmer  
Faculty of Informatics and Communication  
Building 19  
Rockhampton Campus  
Central Queensland University**

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Appendix A: Pilot Survey: OOS and computer use among NTEU members at CQU

- 1 Position [Circle one/two]      Academic    General    Supervisory
- 2 Appointment [Circle one]      Full time    Part time
- 3 Work location [Circle one]      Division    Faculty
- 4 Age by category [Circle one]    < 25      26-35      36-45      46-55      56 +
- 5 Keyboard use? [Circle one]    "hunt and peck"      rapid "two-finger"      Touch

**Computer Use**

- 6 Years using computer/typing [Circle one]    < 5      5-10      11-15      16 +
- 7 Number of hours per day spent using the computer over the last month [Please complete]  
At work: \_\_\_\_\_      Other: \_\_\_\_\_
- 8 Is this typical of your normal usage? [Circle one]      Yes      No
- 9 How many weeks of the year is this pattern typical? [Please complete] \_\_\_\_\_
- 10 How long has this been your normal pattern?  
[Please complete] \_\_\_\_\_ [Circle one]      Weeks      Months      Years
- 11 If this is not normal please briefly explain your normal usage:

12 Health and safety guidelines suggest that keyboard users should take regular breaks that include looking up from the keyboard/screen to rest your eyes and getting up from the computer/work station to move around or exercise.

Estimate your normal time between breaks [Please complete] \_\_\_\_\_ minutes and briefly describe your normal break activities:

13 What do you think would be an optimum break schedule for yourself or computer users (staff, students or family members) working under your supervision? [Please complete]

A break from keyboard duties of \_\_\_\_\_ minutes every \_\_\_\_\_ minutes.

14 How much computer keyboard/mouse work is required in your job [Circle one]

Heavy      Light      Other \_\_\_\_\_

15 Describe your normal computer work location(s) [Circle one/two]

Individual office      Work team/multi-person office      Computer lab  
Computer in other work area    Home      Portable in ad hoc location (airport, etc.)

16 Type of computer(s) normally used and location [Please complete/circle]

Principal computer      Desktop    Portable    Terminal    Other \_\_\_\_\_  
Exclusive use      Shared      Other \_\_\_\_\_  
CQU      Home      Other \_\_\_\_\_  
% of your total computer use on this machine: \_\_\_\_\_ %

Secondary computer      Desktop    Portable    Terminal    Other \_\_\_\_\_  
Exclusive use      Shared      Other \_\_\_\_\_  
CQU      Home      Other \_\_\_\_\_  
% of your total computer use on this machine: \_\_\_\_\_ %

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Appendix A: Pilot Survey: OOS and computer use among NTEU members at CQU

17 Estimate the percent of your total computer use on each of the following applications. Please include all use, whether at CQU, home or elsewhere.

- \_\_\_\_\_ Copy typing                      \_\_\_\_\_ Writing (composing text as you enter it)  
\_\_\_\_\_ E-mail/web mail                      \_\_\_\_\_ Web searching      \_\_\_\_\_ Program coding  
\_\_\_\_\_ Data entry/search/retrieval (eg course advisers/library)                      \_\_\_\_\_ Games  
\_\_\_\_\_ Artistic development (including graphics, web design/development)  
\_\_\_\_\_ Page layout or equivalent (desk top publishing or web, video editing, etc)  
\_\_\_\_\_ System administration or equivalent                      \_\_\_\_\_ Other

18 How frequently are you interrupted (by phone or in-person contacts) while working on the computer? [Please complete]

- Every \_\_\_\_\_ minutes                      \_\_\_\_\_ Seldom                      \_\_\_\_\_ Never

19 Briefly describe how you respond to those interruptions:

**Outcomes**

20 How would you describe your general health? [Circle one]

- Excellent      Good      Average      Bad

21 Do you experience any of the following as a result of computer use? [Circle]

- |                             |       |              |            |
|-----------------------------|-------|--------------|------------|
| Eyes losing focus           | Never | Occasionally | Frequently |
| Dry/itchy eyes              | Never | Occasionally | Frequently |
| Headache /Migrane           | Never | Occasionally | Frequently |
| Emotional stress            | Never | Occasionally | Frequently |
| Neck pain                   | Never | Occasionally | Frequently |
| Lower back pain             | Never | Occasionally | Frequently |
| Loss of circulation in legs | Never | Occasionally | Frequently |
| Tingling in legs or feet    | Never | Occasionally | Frequently |
| Tingling in hands/fingers   | Never | Occasionally | Frequently |
| Mousing arm pain            | Never | Occasionally | Frequently |
| Non-mousing arm pain        | Never | Occasionally | Frequently |
| Shoulder pain               | Never | Occasionally | Frequently |
| Upper arm pain              | Never | Occasionally | Frequently |
| Lower arm pain              | Never | Occasionally | Frequently |
| Wrist pain                  | Never | Occasionally | Frequently |
| Fingers pain                | Never | Occasionally | Frequently |
| Other _____                 | Never | Occasionally | Frequently |

22 Have you taken sick leave or otherwise missed work as a result? [Circle one]

- Yes      No

23 Have you sought medical assistance for any of these conditions? [Circle one]

- Yes      No

## OOS and computer use among NTEU members at CQU: Pilot Study Report

Appendix A: Pilot Survey: OOS and computer use among NTEU members at CQU

### Workstation and work area

24 Describe your normal work station/work area by checking the appropriate characteristics:

**Chair:** \_\_\_\_\_ 5-point rolling castors      \_\_\_\_\_ height adjusted for you  
\_\_\_\_\_ seat slope adjusted for you      \_\_\_\_\_ back adjusted for you  
\_\_\_\_\_ footrest

**Keyboard:** \_\_\_\_\_ height adjusted for arms and hands to be parallel to floor

**Mouse** or mouse replacement: \_\_\_\_\_ beside keyboard or part of keyboard

**Monitor:** \_\_\_\_\_ height adjusted so you view by looking straight ahead (not up/down)

\_\_\_\_\_ anti-glare screen installed      \_\_\_\_\_ tilt adjusted to minimise glare

\_\_\_\_\_ located so you can refocus your eyes by looking up to medium distant view

\_\_\_\_\_ located to minimise contrast from sun (ie, not facing directly into the sun)

**Climate:** \_\_\_\_\_ workstation located out of draft but with adequate air circulation

\_\_\_\_\_ user control over air conditioning/heating

\_\_\_\_\_ office air conditioned but I open windows

25 Do you use speech recognition software? [Circle one]    Yes      No

26 Do you frequently talk on the phone while using the computer? [Circle one]    Yes      No

27 If Yes, do you use any of the following: [Please check]

\_\_\_\_\_ shoulder cradle      \_\_\_\_\_ speaker phone      \_\_\_\_\_ headset and microphone

28 Do you have more than one CQU site where you normally use a computer (eg, own office, computer lab, reception area)? [Circle one]    Yes      No

29 Do you have a CQU-supplied computer at home? [Circle one]      Yes      No

30 Do you regularly/frequently take a CQU computer home for work purposes? [Circle one]  
Yes      No

31 If you felt that your work situation re computer use was not satisfactory have you attempted to get improvements? [Circle one]      Yes      No      n/a

32 If Yes, briefly describe what you did and the result; if No, indicate why not:

### Other keyboard/mouse use

33 Do you regularly use other keyboards (eg piano, electronic keyboard) or engage in other tasks which are repetitive (eg knitting, longhand writing)? [Circle one]      Yes      No

### Support:

34 When assigning your workload does your supervisor take into account the potential health effects and amount of time you will spend on the computer? [Circle one]      Yes      No

35 If you are setting assignments or activities for students or staff under your supervision, do you consider the effect this may have on their computer use? [Circle one]  
Yes      No      no such duties

36 Does your work unit have any health and safety policies or guideline on workplace standards for computer use? [Circle one]    Yes      No

37 If Yes, how are these communicated to staff and students?