

**Report on a Pilot Study of the Peer Assisted Learning
Sessions (PALS) program**

**Introduction to Information Technology (4478)
Semester 1, 2009**

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Executive Summary

In semester 1, 2009, with the support of unit convenor of Introduction to Information Technology, the PALS program was implemented as part of a suite of student success and retention initiatives. Recently students enrolled in Introduction to Information Technology had recorded lower than acceptable pass rates. PALS was considered to be an appropriate program to provide student support because of its proven effectiveness with higher education student success and retention both overseas and in Australia over a number of years.

Students from all GPA levels attended at least one PALS. PALS intervention resulted in a positive impact on the final grades of students who attended, regardless of GPA. The data showed that:

- this semester here was an improvement of 11.8% in the nett pass rate compared with that of semester 1, 2008*
- students who attended PALS frequently (more than four times) had better DI and CR rates than either occasional or non-attendees*
- students who attended PALS frequently had a lower fail rate than that of other students*
- low UAI students who attended PALS had a pass rate one-third higher than that of those who did not attend.*

Student feedback on PALS through an end of semester questionnaire was positive and indicated that PALS had enhanced respondents' revision, exam preparation and assignment preparation and over 90% would recommend PALS to other students. The efficacy of PALS as implemented in this unit has been demonstrated.

Introduction

For semester two, 2008, Professor Carole Kayrooz (PVC Education), in collaboration with Kate Wilson (Director, Academic Skills Program) and Judy Couchman (Academic Skills Program), initiated the PALS program as one element of a suite of academic support programs to improve the success and retention of first year students at the University of Canberra (UC). PALS was successfully trialled in three first year units in semester 2, 2008, and its subsequent success led to its implementation in another historically challenging unit, Introduction to Information Technology, in semester 1, 2009.

Background

Large-scale studies into the first year experience and non-completion of Australian higher education students have signalled that many students now typically admitted to universities are more diverse in their education backgrounds and abilities, increasingly underprepared, and more likely to be non-traditional aged (20-24 years old) (Krause, Hartley, James, & McInnis, 2005; McInnis, James, & Hartley, 2000).

To facilitate the success of these students, research into student success and retention has recommended that integrated, sustainable, academic support be provided, especially to those in equity groups (Krause et al., 2005, p. 78), and have also found that students are engaged through practice-based, interactive and face-to-face education activities (Scott, 2006, pp. 14, 34), of which peer mentoring programs are one of the most effective (McInnis, James et al., 2000, p. 55).

Rationale

At UC in 2006, students from the whole range of equity groups comprised nearly 24 per cent of commencing students:

- low Socio-Economic Status (4.61%)
- Non-English Speaking Background (3.66%)
- disability (1.14%)
- regional (14.13%)
- remote (0.27%) (Department of Education Employment and Workplace Relations, 2008).

This is a proportion likely to continue and even increase with UC's widening of access to students. In addition, in semester 1, 2006, the net success rate of students with a UAI rank of less than 70 was less than 80%. Moreover, in semester 1, 2009, the proportion of students with a UAI less than 75 increased to 43.6% of undergraduate students (G. Tarrant, personal communication, July 22, 2009).

Therefore, there is a continued need to provide academic support early in their studies so that students from these groups have every chance to succeed. It is important to note here that this assistance should not explicitly target any students or student groups in a way that causes them to be perceived as inferior. Reports from a number of academic assistance programs have shown that such stigmatising only serves to discourage targeted students from participating in and benefitting from such programs.

Further, an analysis of the results of UC 2008 first year units with high enrolments (greater than 49 students) indicated that a number of these provided considerable challenge to students and, consequently, suffered lower pass rates than considered acceptable (lower than 80 per

cent). This was often because they were service units in disciplines other than the majors students were taking, and they required particular ways of thinking with which students were often not familiar. Introduction to Information Technology was one such unit: in semester 1, 2008, it attracted 98 students and achieved a pass rate of 51%. It is a service unit for students in the following diverse degree programs:

- Bachelor of Arts/Bachelor of Information Technology
- Bachelor of Information Technology
- Bachelor of Information Technology / Bachelor of Media Arts and Production
- Bachelor of Information Technology/Bachelor of Commerce
- Bachelor of Software Engineering
- Bachelor of Software Engineering/Bachelor of Business Informatics
- Diploma of Information Technology
- Diploma of Information Technology (Extended) (University of Canberra, 2004-2009)

One of the most proven effective peer-assisted learning program in terms of increasing student grades and retention and being cost effective is the Supplemental Instruction (SI) program developed by Deanna Martin PhD at the University of Missouri-Kansas City in 1973 (Congos, 2001-2002; Congos & Schoeps, 2003; Martin & Arendale, 1993).

Currently it is being implemented successfully in over 1500 institutions in the USA and 29 other countries (University of Missouri-Kansas City, 2007). In Australia, it has been mentioned specifically as a popular and effective student integration and academic support program (McInnis, Hartley, Polesel, & Teese, 2000) (see Appendix 1 for benefits to all stakeholders).¹

The PALS program

PALS is an academic assistance program based on peer assisted study sessions offered to all enrolled students each week and is voluntary. Students enrol in PALS (tutorial B or P strand) online through OSIS when they enrol in their tutorials (tutorial A strand). PALS' strength is that it targets historically difficult units, that is, those with unacceptable failure rates, rather than stigmatising 'at risk' students (Martin & Arendale, 1993).

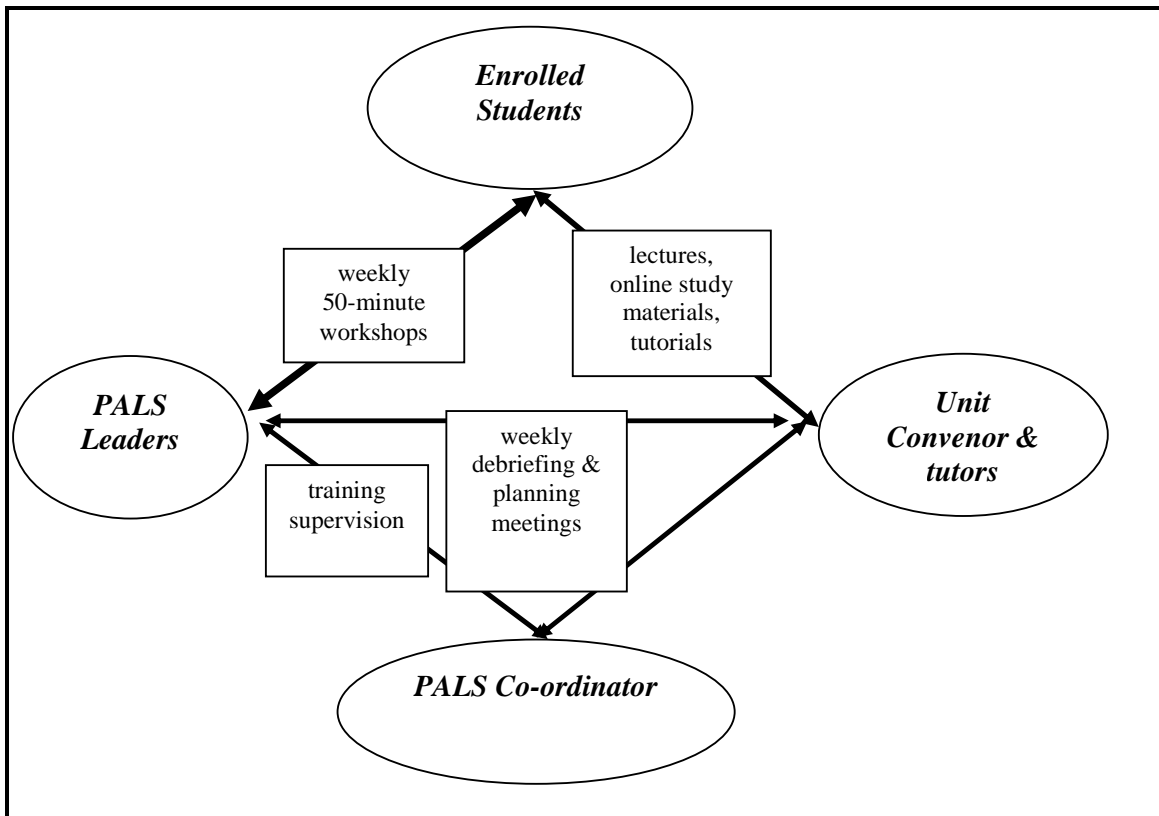
Faculty members invite trained PALS co-ordinators to implement the program in such units and work together with them and student leaders. These leaders are students who have previously succeeded in the unit, been recommended and selected for the position of PALS leader and undergone a period of training. They then re-attend lectures, plan and hold two or more 50-minute PALS sessions each, each week of semester beginning in week 2. In addition, each week they meet with the PALS co-ordinator and faculty members to debrief on the previous week's sessions and plan the next week's activities.

In the PALS sessions they act as model students and facilitate student learning through involving students in group activities and discussions designed to integrate how to learn with what to learn as well as to focus on what students identify as their needs.

¹ It is also known as either Peer-Assisted Learning Strategy (PALS), or, more recently and widely, Peer-Assisted Study Sessions (PASS) (University of Wollongong, 2007).

Figure 1 below summarises the PALS program in Introduction to Information Technology at UC.

Figure 1: PALS for Students at UC



Aim

To investigate whether, on the basis of reported successes of the program gained in the United States, other overseas countries and Australia, students who elected to attend PALS would achieve a demonstrably better grade profile than those who chose not to attend.

Findings

Four PALS were held each week of semester by two leaders beginning in week 2. There were no sessions in the teaching free weeks (8 and 9). This meant there were 12 weeks with four PALS each week.

In keeping with national trends in reporting PALS data (University of Wollongong, 2007), PALS attendance has been divided into frequent attendees, those who attended in five or more of the 11 or 12 available weeks; occasional attendees, those who attended in one to four of the weeks; and non-attendees, those who did not attend any PALS.

In addition, according to the treatment of grades used by the University in calculating nett pass rates, all final grades, including all N² grades were used in the data. This meant that there were 108 students who received a final grade.

When analysing the data, UAIs were taken into account with those scoring lower than 75 considered in the Low UAI category.

PALS Attendance

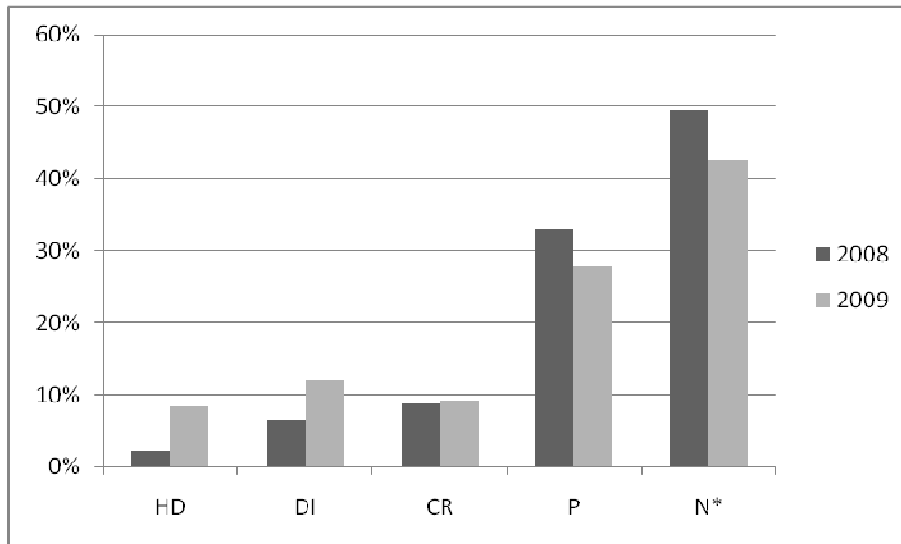
Students from across the UAI range attended. Forty-nine students (45.4%) attended PALS at least once, which was just above the national average of around 40%. However, not all of those attended regularly (more than 4 times). This is typical with students who are time poor because of the pressures of other necessary commitments including increasing hours spent in employment (Krause et al., 2005, p. 60; McInnis, James et al., 2000, p. xii). Measures need to be put into place to increase attendance at future PALS.

Nett pass rates 2007 & 2008

In 2008, the nett pass rate of Introduction to Information Technology was 51%. In 2009 this the PALS program implemented. The nett pass rate increased to 57% (See Figure 2 below). This is an increase in six percentage points or an improvement of 11.8%. As well, the HD rates quadrupled and the DI rates nearly doubled. This is evidence of the positive impact PALS has had on the overall pass rate of this unit.

² N* indicates all fail grades, that is NW, NX, NC, NS and NN.

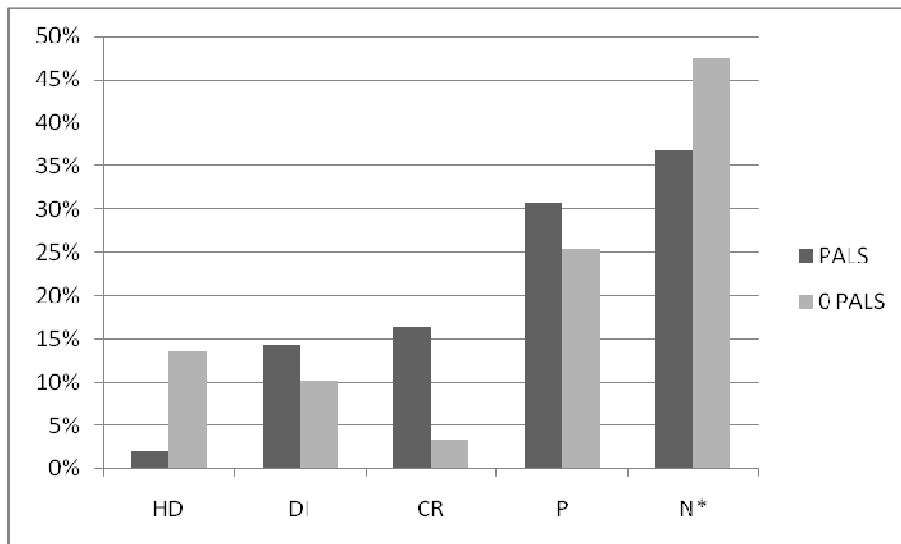
Figure 2: Comparison of 2008 and 2009 Student Results



Final Grades of PALS Attendees & Non-attendees

A further appreciation of the impact of PALS can be gained by comparing the grades of students who attended at least one PALS with that of those who did not attend. When the grades of attendees are analysed, it is clear that they achieved a higher percentage of DI, CR and P grades compared with non-attendees’, and a lower N* rate (See Figure 3 below).

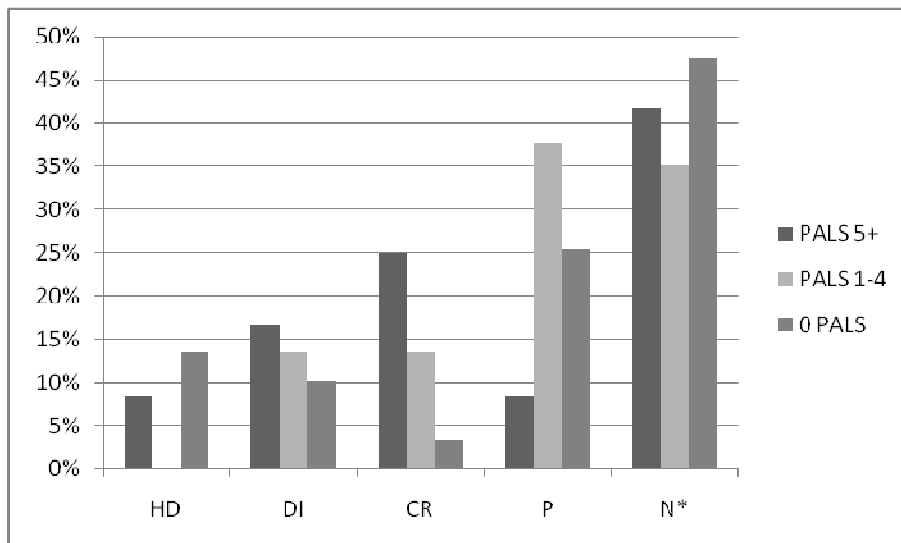
Figure 3: Percentage of PALS Attendees & Non-attendees & Final Unit Grade



When these data are analysed further, comparing those who attended PALS five or more times with those who attended less frequently, the advantages of PALS are still evident, especially at the frequent attendance level. Those who attended five or more times were more likely to achieve a DI and a CR than non-attendees and less likely to fail.

It is clear that those students who had the greatest commitment to PALS achieved at higher levels.

Figure 4: Final Grades & PALS Attendance

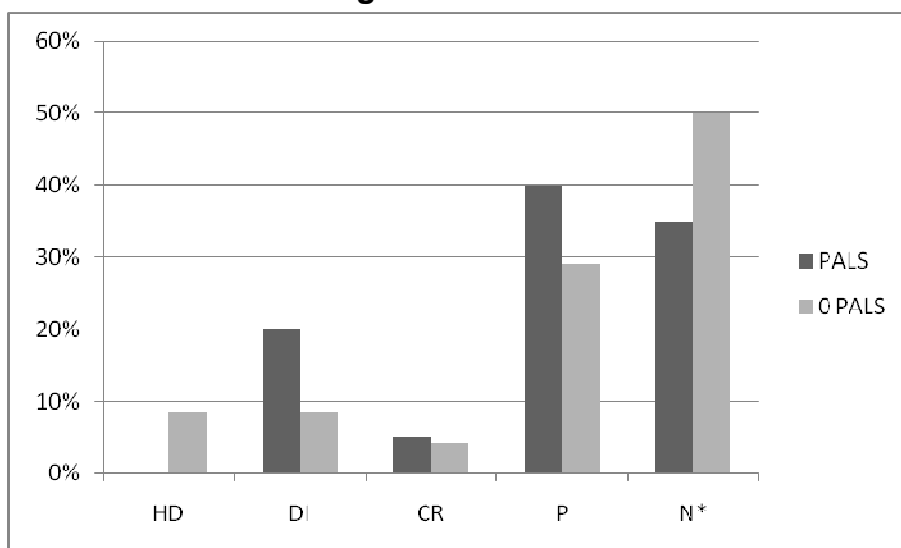


'At risk' students

Another view of the benefits of PALS can be seen by comparing the results of 'at risk' students who attended PALS with their peers who did not. Those students with a UAI less than 75 were considered at risk.

Of the students with a low UAI (44 in all), those who attended PALS gained a higher percentage of DIs, CRs and Ps and were one-third more likely to pass than their non-attending peers (See Figure 5 below).

Figure 5: Percentage of Students with Low UAI (<75) & Final Grades according to PALS Attendance



Students in this group of 'at risk' students clearly benefitted from PALS.

PALS evaluations

In week 15 of semester, all students, PALS attendees and non-attendees, at the final lecture were surveyed by questionnaire (See Appendix 2). The PALS leaders were also asked to respond to a different set of questions about the program.

Attendees

Only 15 attendees responded to the questionnaire: 40 % were high school leavers, 40 % were mature-age students and 20 per cent were international student. There were 13 males and 2 females and 53 % were frequent attendees.

Just over half reported that they came to understand the content better.

All but one respondent would recommend it to other students and 80% would attend PALS in other units if offered.

Over three quarters of respondents reported appreciating the informal atmosphere. The following comments were made about PALS:

- *very interactive and fun*
- *got to point quickly*
- *if something doesn't quite make sense these guys can help*
- *you can discuss the topic you didn't understand in the lecture, get more ideas*
- *share knowledge and explanations, you're not alone*

Over three-quarters of the respondents considered that PALS had improved their revision, exam preparation and assignment preparation, while half had improved their motivation as a result of PALS.

Approximately 90% reported that they thought that PALS leaders knew the content of the unit, were friendly and approachable and involved the students in the sessions; all thought that they provided appropriate study hints.

Most suggestions for improvement concerned more time for PALS sessions.

Discrete Mathematics was suggested as another unit in which students might benefit from PALS.

Respondents considered the PALS program a success.

Non-attendees

There were 13 non-attendee respondents, seven of whom were high school leavers and the remainder mature-age students. Five gave the reason "I intended to but could not find the time" for not attending. Over half considered that night sessions would be preferable.

Leaders

The leaders liked the PALS program because of its co-operative approach, but would have liked better attendance at sessions. Their own studies benefitted through reflection for planning PALS.

Conclusions

The data presented in this report indicate that PALS has made a positive impact on the performance of attendees. The results obtained are similar to those recorded in other universities in Australia and overseas. PALS contributed to an 11.8% increase in the nett pass rate for semester 1, 2009. Students who elected to attend PALS frequently performed better than those who did not.

‘At risk’ students (those with a UAI less than 75) who attended PALS had a higher pass rate than those who chose not to attend.

The data from the student questionnaires reinforce the impression that PALS has been instrumental in bringing about the improved success rate of attendees, especially those who chose to attend more than four times.

Recommendations

Attendance at PALS has had a positive impact on student results; however, the attendance rate was less than optimal for frequent attendance.

Research at UC (Ahmad, Asal, & Pumphaka, 2008) using a sample of 63 UC students enrolled in a first year accounting unit has found that PALS was perceived positively and these students considered that it contributed to their learning. Non-attendees did not attend because of their busy schedules, not because of timetable clashes.

Issues with PALS attendance are also linked with issues relating to increasing diversity of student backgrounds internationally and nationally as well as locally at UC. Many of these are unaware that study out of lecture and tutorial times is a requirement for success at university. They mistake non-compulsory lecture, and often tutorial, attendance for non-compulsory study in general (Higbee, Arendale, & Lundell, 2005).

To improve attendance at PALS, it is suggested that the following be trialled in the next offering of PALS:

- Leader business cards which list the Leader's name and PALS times for the unit
- the use of these business cards as loyalty cards as well
 - students who attend all six sessions before the mid-semester break are entered into a draw for an appropriate prize
 - students who attend all six sessions after the mid-semester break are entered into a draw for an appropriate prize
- a note concerning PALS and the PALS timetable be returned with the first assignment, particularly with low performing students
- a PALS 'spot' be established on the unit Moodle site
- this PALS 'spot' contain PALS worksheets and activities loaded either before or after PALS each week (some experimentation would be needed here to identify which worked best in attracting students to PALS).

Another quite revolutionary development in the US is the piloting of PALS as a mandatory part of a unit (K. Legge, personal communication, October 23, 2008). In some units it is introduced as mandatory without a grade being assigned, in others 10% of the grade for a unit is given for PALS attendance and participation. Who awards this is uncertain, but traditionally PALS leaders are not involved in assessment of any kind. Alternatively, a 5% bonus mark might also encourage attendance and not be as controversial. As a result of either making attendance mandatory or assigning attendance as part of the grade, a vast majority of students is attending regularly.

The results are encouraging and there is sufficient evidence to recommend that PALS be trialled again after comprehensive planning and organisation are undertaken with respect to various groups comprising the unit.

The PALS program was successful because of a number of factors including the positive attitude and enthusiastic support of the Introduction to Information Technology lecturing staff, especially David Clark, and the PALS leaders.

Please contact the author of this report if you wish to discuss this report or the PALS program further.

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Appendix 1

PALS Benefits

PALS benefits all stakeholders of the program, faculty members, students and leaders, in various ways.

For faculty, PALS

- is a proactive and positive approach to retention
- is effective in improving pass rates in challenging units
- assists faculty to maintain high academic standards
- makes it explicit to students that these faculty staff care about them and their progress
- is a positive marketing point for the faculty & UC in recruiting students, particularly international students
- enhances academic staff profiles for promotion
- provides weekly feedback for academic staff
- trains prospective tutors and leaders in other faculty programs
- leaders develop an interest in & commitment to the PALS discipline for students to follow, thus improving student perception of the unit & faculty
- leaders are prospective honours/post graduate students
- raises the profile of faculty & UC through the PALS networking, conferences, and workshops with other universities nationally & internationally (Martin & Arendale, 1993).

For students, PALS

- is **not** a remedial program so no stigmatisation occurs and low-achieving students are motivated to attend
- integrates what to study and how to study, eliminating the vexed problem of transference of study skills
- is proactive, supporting students from week 1 or 2
- encourages independent learning by enabling students to monitor their own progress and understanding from the beginning of semester
- leaders provide a non-threatening atmosphere where **any** questions can be asked
- engages students in 'deep' learning because of its workshop approach
- provides an opportunity for students to establish out-of-class study groups
- provides a social platform for students to establish friendships, which is a key aspect of academic success
- is an efficient use of student study time (Martin & Arendale, 1993).

For leaders, PALS

- develops leadership and communication skills
- improves employment opportunities
- increases self-esteem from being an employee of faculty & UC
- involves the reward of contributing to other students' success and faculty profile
- supplements income in a way that contributes to academic & professional development
- enhances understanding of unit content and study approaches
- improves post-graduate opportunities (Congos & Stout, 2003).

Appendix 2

Student questionnaire

PALS Student Questionnaire

The following questionnaire is designed to assist in evaluating and developing the PALS program.

Please tick the ones that apply to you:

Age: under 21 () 21-30 () 31 - 40 () 41 + ()

Gender: Male () Female ()

High School Leaver () Mature Age Student () International Student ()

If you ATTENDED PALS sessions, please complete PART A below and overleaf.

If you did NOT attend any PALS sessions please complete PART B overleaf.

PART A (if you attended at least one PALS session)

Circle the appropriate responses; you may circle more than one in questions 3 & 5

<p>1 Is this your first attempt at this unit? i) Yes ii) No</p> <p>2 How often did you come to PALS? i) 1-4 ii) 5-9 iii) 10+</p> <p>3 Why did you come to the PALS sessions? i) understand the content better ii) revision iii) exam preparation iv) run by students v) to get a better grade vi) other (<i>please specify</i>)</p> <p>4 Would you recommend PALS to other students? i) Yes ii) No Why/Why not?</p>	<p>5 What did you like about PALS? i) informal atmosphere ii) student participation iii) variety of activities iv) covered areas of concern v) friendly leaders vi) other (<i>please specify</i>)</p> <p>6 How might PALS be improved?</p> <p>7 Would you attend PALS in other units? i) Yes ii) No</p> <p>8 What other units would you like to see PALS in?</p>
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PART A (con)

9 Do you think PALS improved your performance in the following areas?

- | | | | |
|------------------------------------|------------|---------------|-----------|
| a) using textbooks, study guides | Yes | Unsure | No |
| b) revision & exam preparation | Yes | Unsure | No |
| c) organizing your study time | Yes | Unsure | No |
| d) assignment preparation | Yes | Unsure | No |
| e) motivation to study | Yes | Unsure | No |
| f) other (<i>please specify</i>) | | | |

10 What qualities have you seen in your PALS leaders?

- | | | | |
|--|------------|---------------|-----------|
| a) was well organized for the sessions | Yes | Unsure | No |
| b) knew the content of the unit | Yes | Unsure | No |
| c) was friendly, approachable | Yes | Unsure | No |
| d) involved students in activities | Yes | Unsure | No |
| e) provided appropriate study hints | Yes | Unsure | No |
| f) other (<i>please specify</i>) | | | |

Thank-you for your response.

PART B (if you did NOT attend any PALS sessions)

Circle the appropriate responses; you may circle more than one in questions 2&3.

1 Is this your first attempt at this unit?

- i) Yes
- ii) No

2 Please indicate the reasons you did not attend PALS:

- i) I wanted to, but couldn't because of time-table clashes
- ii) I didn't feel it was necessary
- iii) I have been to similar kinds of study sessions in other courses and did not find them helpful
- iv) I have been to PALS sessions in other courses and did not find them helpful
- v) I intended to, but couldn't find the time
- vi) Other (*please explain*).

3 Would a night session be preferable?

- i) No
- ii) Yes 1hr/week
- iii) Yes 2hrs/fortnight

4 Have you any other comments?

Thank-you for your response.

