INTRODUCING PEER-ASSISTED LEARNING IN FIRST YEAR ACCOUNTING IN AUSTRALIA

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ABSTRACT

Australian universities are giving increasing attention to peer-assisted learning as a means of meeting some of the demanding challenges that have arisen over the last fifteen years. At Macquarie University, Sydney, a two year (2003-04) trial has been conducted of this form of supplemental instruction in selected Accounting courses. This paper discusses the first stage of the trial, and finds that (i) peer-assisted learning produces various positive outcomes, and (ii) is best approached as a flexible system capable of adaptation to local teaching and learning environments.

Australian universities are gradually turning to peer-assisted learning (or supplemental instruction) as a means of coping with the dramatically increased pressures on undergraduate teaching that have occurred in the last fifteen years. Several universities (about 26% of the total) now have established peer-assisted programs, a few have exploratory pilot programs (about 8%), while the remainder (66%) are inactive. Macquarie University, a mid-sized Sydney institution, falls into the second category. It is presently undertaking a two year (2003-04) trial of peer-assisted learning to assess its suitability for dealing with these challenges. The trial is primarily being undertaken in first and second year Accounting subjects which embrace many of the current problematic teaching and learning situations.

THE IMPORTANCE OF CONTEXT

Reduced government funding has forced Australian universities to seek new sources of income, the main one being international fee-paying students, mostly from Asia. Immigration has also led to higher numbers of Australian residents with non-English speaking backgrounds. As is well known [3], students from these backgrounds can present a range of pedagogic and cultural challenges. Financial constraints have also prevented proportionate increases in staff, so that student-staff ratios have grown dramatically in areas such as commerce. At Macquarie, very large classes are common in first year (1000 to 1500 students) and second year (500 to 1200 students), with student-staff ratios often lying between 40 and 50. In addition, chasing funds has led to downward pressures on entry standards and a deterioration of purely merit-based entry criteria, and the curriculum in secondary schools has led to weaker generic skills in areas such as reasoning, writing and quantitative ability. Failure rates in large courses currently range from 20% to 35%, and can be as high as 70% for sub-groups such as those transferring from private education providers. Because the effectiveness of any peer-assisted learning program is highly sensitive to the context in which it is implemented, it is important to tailor programs to local contexts.

DESIGN AND MECHANICS OF THE TRIAL

The first stage of the peer-assisted learning trial (under the name PAL) took place in first semester 2003. The course selected was ACCG100, a foundation accounting course with high enrolments (550 to 800), high failure rates (30 to 35%), and motivated teaching staff. In terms of language ability, Australian commerce enrolments are nowadays composed of three primary groups – domestic native speakers, domestic non-native speakers (recent immigrants), and international non-native speakers, with the last

two groups deriving predominantly from Asia.

PAL groups consisted of up to 25 students and 2 leaders. Leaders were selected on specific criteria (such as academic achievement, communication skills, language ability, personality and motivation); they undertook a compulsory one day training session which stressed their roles as facilitators of learning rather than teachers or instructors; they shared attendance at lectures in the subject (usually on alternating weeks); and they were paid around A$20 hour for both their PAL sessions and lecture attendance. Student attendance at PAL sessions was voluntary. Sessions started in week 3 and ran for 11 weeks until the end of semester. Leaders were encouraged to stimulate interaction, to employ groupwork, to devise problem-solving activities and to create a fun atmosphere using learning games/competitions with small rewards; assessment preparation and technique were also featured at appropriate times. Leaders were monitored by supervisory staff attending sessions on a drop-in basis, and leader meetings during the semester.

OUTCOMES

The outcomes of the PAL trial were assessed both quantitatively and qualitatively as follows.

(i) Student participation rates - Initially, the program had 16 sessions running with 235 students (about 34% of the total enrolment) attending the first session. However, the participation rate then declined steadily to a plateau of roughly at 125 students for the second half of the semester. A fall in attendance expected because some students will try out the sessions, and others may experience timetable problems due to work or study.
(ii) Participation survey (week 10 of semester) - From the large sample (330) that responded, it was found that around 17% had attended but left the program largely due to time pressures or dissatisfaction with PAL (mainly a lack of structure in sessions or a lack of rapport with leaders) and that among those who were regular attenders, females were more highly represented than males, and non-native speakers more highly represented than native speakers.
(iii) Attender survey (weeks 12 and 13 of semester) - Overall, a high level of satisfaction was expressed by the 16% of total enrolment that responded, both with the program and Leaders. Greatest satisfaction came from being able to ask questions, discuss problems with peers and Leaders, revise and clarify concepts, and receive tips for exam procedures and strategies. On the other hand, attenders made it clear that they wanted more content, more structure, more handouts, and longer sessions.
(iv) Leader survey (week 13) - Leaders were extremely positive about the program, particularly regarding the development of their leadership skills, communication skills and self-confidence. However, they also provided suggestions for improving training and for greater resource support.
(v) Student grades - First, the academic performance of attenders and non-attenders in 2003 were compared. Four categories of attendance were used as follows:

Non-attenders:	0 sessions	Infrequent attenders:	1-3 sessions
Moderate attenders:	4-7 sessions	Regular attenders:	8-11 sessions

The results support the following conclusions, with grades at Maccquarie being F (Fail), PC (Conceded Pass), P (Pass), Cr (Credit), D (Distinction), and HD (High Distinction).

(i) Regular attendance was positively associated with markedly better performances in all grades except the P grade where performance was roughly unchanged. Regular attenders had higher percentages of the better grades (HD, D, Cr) and lower percentages of the poorer grades (F, PC). At the top end, 11.4% and 15.2% of regular attenders obtained HD and D respectively, while only 4.1% and 8.0% of non-

attenders did so. At the bottom end, only 9.5% and 1.9% of regular attenders obtained F and PC respectively, whereas 29.6% and 4.6% of non-attenders did so.
(ii) A strong negative association existed between attendance and F grades, and a moderately negative association between attendance and PC grades.

Overall, regular PAL attendance appears to have had a strong positive impact on student grades. There was, however, the usual fly in the ointment of possible sample bias due to self-selection which, at this stage, has not been statistically investigated.

Secondly, the grade distributions of the PAL year (2003) were compared with the two previous years. The 2003 grade distribution showed a marked improvement in nearly all grades. There was a significant increase in the overall pass rate (75.9% in 2003, compared to 70% in 2002 and 66% in 2001), and a significant decrease in the failure rate (24.1% in 2003, as against 30% in 2002 and 34% in 2001). And, for the upper grades, there were more high distinctions and distinctions in 2003 than in the previous years. However, the improvement in grades was not necessarily solely attributable to the introduction of PAL because of an improvement in the entry scores in 2003 for domestic students entering from high school. This factor alone would be expected to generate an improvement in the grade distribution, but the qualitative feedback from students and the relatively high participation by international students in the program suggest that it was not the only factor.

LESSONS LEARNED

From the above outcomes, a number of conclusions were drawn to improve efficiency.

(i) Adjusting the focus of sessions - Students wanted more content, structure, drills and specific problem-solving. However, PAL programs also focus on developing a set of transferable capacities (independent learning, deeper learning, problem solving, researching information, critical thinking etc) which assist in improving grades in the targeted course and elsewhere. To achieve a suitable balance, the next stage of the trial will provide more content and structure to each session, while continuing with the development of learning skills and capacities. This strategy is consistent with previous literature [1].
(ii) Emphasising the early sessions - The early sessions, especially the first, are critical in creating positive impressions and in persuading interested but undecided students to keep attending. These sessions, which need to be interesting, dynamic and instructive, will become a focal point in leader training.
(iii) Changing the information technology - In the absence of a university-wide online enrolment system at Macquarie in 2003, traditional 'low tech' methods were used for advertising, sign-up and administration. A far more efficient system relies almost entirely on online enrolment, email, and web-sites. With IT-based systems, prospective leaders can be solicited by emails; all students can be informed of the existence of PAL during, or prior to, enrolment; students deemed to be at risk can be targeted with specific emails encouraging attendance at PAL; and previous participants can be surveyed post-exam at the start of the next semester. More importantly, students can enrol online in PAL sessions at the same time as they enrol in their courses and organise their overall study and work timetables.
(iv) One or two leaders - Two leaders significantly increase costs, especially in classes where attendance falls. To contain costs and improve efficiency, we decided in the next stage to try one leader per group.
(v) Attracting a suitable mix of leaders - Applicants for leaders contained a higher proportion of non-native speakers than native speakers despite the latter's preponderance in total enrolment. Since it is vital that leaders have good language abilities, we propose to send emails or lettesr to all students who have performed well in the course, encouraging them to apply for leader positions and emphasising its

self-development and employability benefits.
(vii) Resource support - To provide greater support to leaders, we sought a dedicated room for PAL sessions and leader usage, access to photocopying, and accumulated a bank of resources containing the ideas, activities and experiences of the previous generation of leaders (available on CD).
(viii) Academic staff integration - It is important not only to have the support of the lecturing staff, but also to integrate all ancillary staff (tutors, administrators) into the program. In the first stage, we focused on the first, but not the second.

CONCLUSION

University administrations are likely to fund PAL programs provided (i) the benefits substantially outweigh the costs, and (ii) there are no alternative ways of expending the same resources to yield higher benefits. Because many of the diverse benefits and costs are not reducible to numbers, assessing and comparing benefit-cost ratios is necessarily a matter of qualitative judgement and cardinal ranking rather than one of arithmetic calculation. It is important that a comprehensive view be taken in which all benefits and costs are captured, and that decisions are not made merely on the basis of items that can be numerically quantified or given dollar values [2]. Benefits and costs can also be dependent on context, such as national education policy and whether the university is public or private.

Overall, the PAL program at Macquarie made a solid and pleasing debut. Positive outcomes were produced for all stakeholders – students, leaders, academic staff, the university and taxpayers. Student feedback was very favourable, and leaders benefited in developing a portfolio of valuable skills. There was an apparently strong positive association between regular PAL attendance and better grade distributions and, for the PAL year compared to previous years, the percentage of pass grades was significantly higher and the percentage of fail grades significantly lower. The large cohort of non-native English speaking students of Asian background also indicated a desire for more content-focused sessions and examination preparation material.

In suitably contextualised forms and as a component in an integrated suite of programs, peer-assisted learning certainly appears capable of making a significant and cost-effective contribution to meeting some of the challenges facing undergraduate teaching and learning in Australian universities.

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