Higher Education Research & Development

ISSN: 0729-4360 (Print) 1469-8366 (Online) Journal homepage: https://www.tandfonline.com/loi/cher20

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To cite this article: Mary Peat , James Dalziel & Anthony M. Grant (2001) Enhancing the First Year Student Experience by Facilitating the Development of Peer Networks through a One-day Workshop, Higher Education Research & Development, 20:2, 199-215, DOI: 10.1080/07294360123888

To link to this article: https://doi.org/10.1080/07294360123888

Higher Education Research & Development, Vol. 20, No. 2, 2001

Enhancing the First Year Student Experience by Facilitating the Development of Peer Networks through a One-day Workshop

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ABSTRACT *Transition to university involves adapting to a new academic and social environment. Recent research on this process indicates that a significant number of students experience at least some difficulties during this transition, but that this may be alleviated by various institutional measures designed to assist students with the transition, e.g. the fostering of peer study groups. From 1996, the Faculty of Science of the University of Sydney has offered a "Transition Workshop" to all incoming first year science students. Follow-up surveys from the 1997 cohort indicated that students who attended the workshop exhibited significantly better adjustment on a range of measures. Compared to equivalent peers not attending the workshop, attendees also recorded higher levels of academic performance (on average) during their first year of study. A qualitative evaluation found that the workshop facilitated the establishment of strong peer relationships, and that these enhanced study, self-motivation and general enjoyment of university life. These findings suggest that such workshops assist in the development of peer networks and are helpful in easing the transition of undergraduate students.*

Introduction

Research into the social and academic experiences of students in transition has indicated a number of key areas of concern, and made recommendations about improvements. The Australian benchmark survey of McInnis and James (1995) stressed the importance of the initial experience of learning for first year students. The first few weeks at university are a time when habits and attitudes are formed, and a bad experience can subsequently lead to discontinuation or failure. Tinto (1987, 1996) also emphasises that the approach to academic study and social life at the tertiary level can be profoundly affected by students' early experiences; with high attrition rates if these experiences are poor. One way to enhance the first year experience during the initial stages of the transition process is by helping students to establish supportive peer groups (McInnis & James, 1995). Such groups provide a buffer against the difficulties of the initial period of transition, as well as providing

ISSN 0729-4360 print; ISSN 1469-8360 online/01/020199-17 © 2001 HERDSA
DOI: 10.1080/07294360120064439

a structure for students to assist each other in academic study (Cohen & Hoberman, 1983; Tinto, 1975).

Workshops for assisting students with adjustment to university life are not new. Within the Australian context they are common for residential university colleges where many students are from rural areas. They are also reasonably prevalent among small, specialised courses of study where limited student numbers and shared weekly classes make it relatively easy to facilitate transition workshops for students. In these cases, the ongoing high level of contact between a small number of students may be sufficient to create cohesive peer groups that buffer the academic and social difficulties of early university life. The same cannot be so easily said for large, diverse degree programs. In large generalist faculties where hundreds or thousands of students study, the difficulties of fostering collaborative learning and aiding students in the transition to university life appear to increase exponentially with size. As student numbers increase, lecture class size increases, subject selection becomes more varied, and timetabling becomes increasingly complex. This may result in many students having few if any other students that share with them more than a few hours of classwork a week. This type of isolation can be a formidable barrier to student adjustment to university life.

Recognising these challenges, the Faculty of Science at The University of Sydney has actively fostered the establishment of supportive peer groups for its large intake of students into Bachelor of Science and related degree programs. In response to a concern that many of the students were not settling in to university life as quickly as might be considered appropriate, and an awareness of the added pressures on students when the University introduced semester-length Units of Study, the Faculty looked at ways of offering students an induction session that would help them to help themselves. The solution has been a one-day workshop, held before the official University Orientation period which concentrates on the development of social and academic networks.

This paper provides an overview of the implementation of the workshop, together with a review of subsequent research related to this program. The research covers three main areas: first, quantitative analysis of academic and social adjustment; second, quantitative analysis of academic performance; and third, qualitative analysis of the development of social and study networks.

Implementation of the Faculty of Science "Transition Workshop"

The rationale for the workshop is to offer a collaborative session for students and teaching staff which centres on a recognition that those students who work and socialise together are more likely to succeed, and are more likely to continue with their tertiary studies (Tinto, 1987; Tang, 1993). In the workshop, which has been held since 1996, the students are organised into groups that are focused around their primary area of interest, such as physical sciences, life sciences, mathematics and computer science, and psychology. The students' timetables are manipulated so that within peer groups of 10–20 students, they are timetabled to meet in two small group classes for up to six hours a week during first semester. This might be a

combination of laboratory classes (e.g., biology and chemistry, physics and chemistry), or laboratory class and tutorials (e.g., biology and psychology) or just tutorials (e.g., mathematics and computer science). The main activity of the workshop is to (re-)introduce students to the importance and benefits of peer networks and group study activities.

During the enrolment process, all new Bachelor of Science students are invited to attend the workshop, and requested to return a letter indicating interest in the workshop, plus areas of study/career aspirations. Prior to the day of the workshop (held on a weekend just prior to the commencement of studies), students who returned the letter are grouped according to areas of interest and subject choices, and their timetables manipulated to create groups of 10–20 students. On the day of the workshop, students are given a showbag containing various information material and a student orientation manual (prepared by past first year students). They are then grouped together in lecture rooms according to broad areas of study (approximately 60–100 students per large group) for a morning session. Within these groups, a number of pre-allocated peer groups with shared timetabling of classes have been created.

The morning sessions are run by a coordinator of first year studies in the area related to students' subject choices and career aspirations. The sessions involve a welcome, advice on how to adjust to university life, talks from past first year students, and the formation of peer study groups. The main activity of these sessions is the creation of peer groups, when students move from their initial seats to form their allocated peer groups at different locations within the lecture room where they can talk with others in their timetabled group (10–20 students). Students are encouraged to get to know each other and are told of the benefits of peer groups during the transition period, as well as being informed of the fact that they will be sharing classes together during their first semester. Blank "business cards" are provided to all students to allow them to swap names and contact details with others in their groups, so as to help foster an ongoing peer network. Students are encouraged to continue meeting with each other during the semester, particularly beyond the confines of the classes they share.

In the afternoon a formal welcome is given to students and their parents (parents had been invited via a separate letter included with a letter of confirmation posted to the student prior to the workshop). Following this, students leave in peer groups for tours of the campus, while parents remain for an afternoon session on the transition process with advice to parents on how they could assist their sons and daughters, and ending with a panel question-and-answer session.

Evaluations of the student workshop and the parents' program conducted at the end of the day indicated enthusiastic responses in both cases, and a follow-up survey of the 1997 cohort was developed to explore various issues related to transition.

The Transition Workshop Research Program

To examine potential benefits of the workshop, and to explore issues related to transition more generally, a survey of students was conducted in the final weeks of

the first semester. Three groups of students were surveyed: (1) students from the Faculty of Science who registered for and attended the workshop; (2) students from the Faculty of Science who did not register for and did not attend the workshop; and (3) students from other Faculties not offered a workshop. The survey was developed to explore issues related to the transition at both a qualitative and quantitative level. Included in the survey were a number of scales on academic and social adjustment, including the First Year Experience Questionnaire (FYEQ—McInnis & James, 1995), the Interpersonal Support Evaluations List (ISEL—Cohen & Hoberman, 1983), and the Approaches to Study Questionnaire (ASQ) as presented by Gibbs (1992). In addition, various questions and measures were included to act as control variables—such as a questions about learning preferences ("alone" versus "with others"), Tertiary Entrance Rank (TER—an overall measure of secondary school performance) and the extroversion subscale of the EPQR-A (Francis, Brown, & Philipchalk, 1992). Students were also asked to respond to three open-ended questions on: (1) how attending the workshop helped in their adjustment to university life; (2) the three best aspects of their university experience during the first semester; and (3) the three worst aspects of their university experience during the first semester (the latter two questions to be answered by all students surveyed). Finally, permission was sought from students to examine their academic performance, and to compare this with their survey responses.

Surveys were posted to students in the final weeks of first semester. A total group of 747 students were sent surveys in 1997, although it is not known how many of these students had accurate address details, or how many students from this group had already withdrawn from study. A total of 286 completed surveys were returned. This represents the total sample size for the first set of results (see Dalziel & Peat, 1998 for further discussion of methodology). The second set of results was based on a smaller subset of 169 students who met all the requirements of: (1) being within the Faculty of Science; (2) having given permission to allow access to their academic records; and (3) had valid TER scores available. The third set of results was based on only those students from the 286 group who provided comments on open-answer questions.

Quantitative Analysis of Academic and Social Adjustment

By using data obtained from the various academic and social adjustment scales included in the survey, together with a range of other individual questions, a picture of quantitative differences in adjustment between student groups was obtained. The results of the comparison of workshop attendees with other students indicated that attendees scored higher on a range of measures indicating better adjustment to university life, such as "Academic Application" and "Sense of Identity" (FYEQ) and a "deep" or "meaning" approach to learning (ASQ). The pattern across these measures indicated generally better adjustment on a wide range of variables for the transition workshop attendees, compared to the other groups of students. In summary, the students who attended the workshop were:

- less likely to have considered dropping out or deferring during first semester;
- more likely to have been involved in collaborative learning activities;
- more academically motivated;
- more likely to have a well-developed sense of purpose and identity;
- more appreciative of their courses; and
- more likely to adopt a deep approach to learning.

However, no significant differences were found between attendees and others on the control variables of learning preference, TER or extroversion. Table 1 illustrates scale differences between groups (see Dalziel & Peat, 1998 for further details).

TABLE 1. Mean scale scores and significance results for students in Group 1 (transition workshop), Group 2 (non-transition workshop BSc) and Group 3 (other faculty)

Scale	Mean Gr 1	Mean Gr 2	Mean Gr 3	Gr 1 vs Gr 2	Gr 1 vs Gr 3
First Year Experience Questionnaire					
Academic Orientation	21.3	19.3	20.3	*sig*	*ns*
Sense of Identity	15.8	14.1	14.2	*sig*	*sig*
Sense of Purpose	15.8	14.7	14.8	*sig*	*ns*
Academic Application	12.2	11.2	10.6	*sig*	*sig*
Teaching	29.1	27.7	28.7	*ns*	*ns*
Course	11.4	10.0	10.5	*sig*	*sig*
Workload	18.1	17.7	17.0	*ns*	*ns*
Interpersonal Support Evaluation List					
Tangible	8.4	8.3	9.1	*ns*	*ns*
Belonging	5.4	5.3	5.6	*ns*	*ns*
Appraisal	8.0	7.6	8.3	*ns*	*ns*
Self-Esteem	7.2	6.6	7.3	*ns*	*ns*
Approaches to Study Questionnaire					
Achieving	20.3	19.7	18.6	*ns*	*sig*
Reproducing	21.0	21.5	21.7	*ns*	*ns*
Meaning	20.7	19.3	19.1	*sig*	*sig*

Quantitative Analysis of Academic Performance

Academic performance was assessed using the "Weighted Average Mark" (WAM) recorded on the university database for each student at the end of first semester. At this stage of these students' degrees, their WAM is just the average of the individual course marks for first semester (most students took 4 courses during Semester 1). As the University of Sydney has relatively strict guidelines about the comparability of marks between subjects (according to Academic Board policies, in first year approximately 3% of students who pass a course may obtain a High Distinction, approxi-

mately 14% of students who pass a course may obtain a Distinction or above, and approximately 42% of students who obtain a pass in a course may obtain a Credit or above), there was reason to have some confidence that, despite some differences in subject choices among students, the marks given within these subjects would be generally comparable with others, and hence the WAM would not be substantially skewed by any one high or low marking subject.

There are two important methodological problems that arise in studies such as that presented here: (1) use of a non-random sample; and (2) intercorrelations between variables. First, by attempting to predict student marks based, in part, on attendance at a pre-university workshop, the students who choose to attend this workshop are not a random sample of the first year science population—rather, they may self-select for the workshop for a variety of reasons which may affect academic performance apart from any beneficial effects of the workshop itself. In the context of the current study, there is no easy way to address this problem, however, it was possible to use control variables to examine whether any significant differences existed between workshop attendees and those who did not attend. As reported above, there was no difference between attendees and non-attendees on the variables of extroversion, TER, or learning preferences ("alone" versus "with others"). A variety of other variables were examined for possible differences between these groups prior to model building. It was found that none of these variables was significantly different between the two groups (the variables examined included: age, gender, having a job, time required for job, living circumstances, region/country of origin, number of subjects attempted in Semester 1, and type of school).

The second main problem is that while several of the measures used to assess student adjustment to university life (FYEQ, ISEL and ASQ) may affect academic performance, many of these measures are intercorrelated, and hence present the problem of multi-collinearity within regression models. Further, it is unlikely that these variables are unrelated to any beneficial effects of the Transition Workshop (in the case of those students attending), as the workshop may have helped to foster peer support networks and encouraged students to apply themselves to their academic work from the beginning of the year (which would subsequently affect scale scores when surveyed at the end of first semester). For this reason, the effect of the workshop cannot be easily disentangled from the various academic and social adjustment subscales presented. For this reason it was decided not to include attitude and adjustment measures within the regression equation, but rather just to include simple demographic measures, the TER and attendance at the workshop in the attempt at model building. However, to illustrate the relationships between these variables, several correlation matrices are presented to allow for an examination of the relationship between scales and WAM, as well as the interrelationships between the scales.

Several variables were trialled as predictors in a linear regression equation for WAMs, but only four variables were found to make a significant and reliable contribution. The regression equation developed for the prediction of Weighted Average Marks for first semester Bachelor of Science students at the University of Sydney was:

TABLE 2. Correlation matrix between FYEQ, age, TER and WAM

Correlation Matrix (FYEQ)	2	3	4	5	6	7	8	9	10
1. Academic Orient.	0.61	0.42	0.54	0.49	0.79	−0.38	0.23	0.07	0.11
2. Sense of Identity		0.38	0.30	0.39	0.71	−0.29	−0.01	−0.02	−0.02
3. Sense of Purpose			0.42	0.15	0.38	−0.18	0.21	0.06	0.09
4. Academic App.				0.33	0.45	−0.29	0.28	0.06	0.20
5. Teaching					0.50	−0.33	0.00	0.07	0.09
6. Course						−0.29	0.13	0.02	0.06
7. Workload							−0.13	−0.03	−0.06
8. Age								−0.27	−0.10
9. TER									0.62
10. WAM									

$$\text{WAM} = 0.65 \times \text{TER} + 3.3 \times \text{Workshop} + 3.7 \times \text{Gender} - 1.5 \times \text{Age} + 35 \text{ (constant)}$$

(where workshop non-attendees are scored 1 and workshop attendees are scored 2, and where females are scored 1 and males are scored 2).

This equation accounts for approximately 43% of the overall variance ($F(4,165) = 31.5$, $p < 0.0001$). All four variables made significant contributions to the model (TER: $t = 9.9$, $p < 0.0001$; Workshop: $t = 2.1$, $p < 0.05$; Gender: $t = 2.4$, $p < 0.05$; Age: $t = -2.1$, $p < 0.05$; the constant was significantly greater than zero, $t = 2.2$, $p < 0.05$). The equation indicates that higher WAMs are associated with higher TERs, attendance (versus non-attendance) at the Workshop, males (versus females) and younger students (versus older students). However, it should be noted that TER explains the overwhelming majority of variance in this equation, with "workshops", "age" and "gender" making relatively smaller contributions. The equation indicates that attendance at the workshop is, on average, equivalent to approximately 13 additional marks in one of the four subjects attempted. However, it should be noted that this equation does not answer the questions of causal relationships. While it is plausible that attendance and the impact of a peer network caused the increased marks, it is also possible that the increased marks are a function of a more general conscientiousness, which is exhibited in a greater willingness to attend the workshop in the first place, as well as to work hard during semester.

A subsequent analysis of academic performance across the whole of first year study (Semester 1 and 2) indicated a similar regression model, and an increase in the overall variance explained. A separate (anonymous) analysis of the full 1997 Bachelor of Science cohort on these four variables indicated a similar regression model with the exception of Gender, which was non-significant.

Correlation matrices for age, TER and WAM are presented for the FYEQ (Table 2) and for the ISEL and ASQ (Table 3). Appendix 1 contains the correlation matrix for interrelationships between the three scales.

The analysis of academic performance shows that when adjustment is made for the effect of TER/UAI (NSW High School examination score) on WAM (weighted

TABLE 3. Correlation matrix between ISEL, ASQ, age, TER and WAM

Correlation Matrix (ISEL & ASQ)	2	3	4	5	6	7	8	9	10
1. Tangible	0.61	0.65	0.42	0.04	−0.09	0.06	−0.22	0.06	0.05
2. Belonging		0.56	0.37	0.04	−0.03	0.06	−0.20	0.02	0.01
3. Appraisal			0.31	0.11	−0.11	0.16	−0.23	0.05	0.06
4. Self-Esteem				0.27	−0.09	0.34	−0.02	0.14	0.28
5. Achieving					−0.08	0.47	0.08	0.09	0.16
6. Reproducing						−0.29	−0.12	−0.09	−0.12
7. Meaning							0.11	0.17	0.25
8. Age								−0.27	−0.10
9. TER									0.62
10. WAM									

average mark at the end of Semester 1), there is still a significant and positive effect associated with attendance at the workshop, as well as with age (younger students obtained higher marks than older students). A caution concerning the interpretation of the age effect is that this finding is mainly a difference between students straight out of school compared to those who have had a few years break between school and university. The reason that this finding does not reflect on the performance of more mature-aged students is that few of these students had TER (or TER equivalent) scores, and hence could not be included as part of the model-building exercise. Finally, the impact of gender is less clear, given the lack of significance with the more representative full cohort analysis.

These data are of interest for a number of reasons. First, they allow the opportunity to examine any possible positive contribution of the workshop towards academic performance. Second, they provide an opportunity to examine general factors related to performance among first year Bachelor of Science students. Third, they present the possibility of examining the correlations between academic performance and the various scales used to measure academic and social adjustment. Given the importance of the "First Year on Campus" study by McInnis and James (1995)—particularly their development of the FYEQ—the current research provides a valuable opportunity to explore the correlates of the elements of this scale.

Qualitative Analysis of the Development of Social and Study Networks

As part of the survey, students were asked to respond to three open-ended questions:

(1) How did attending the "Transition Workshop" help you in your adjustment to university life?
(2) Please describe the three best aspects of your university experience during your first semester.
(3) Please describe the three worst aspects of your university experience during your first semester.

As the survey used a qualitative open-question methodology, the student responses are unsolicited as students determined the issues which they considered to be important. The response rates, therefore, should be seen as minimal, as a student may not have always indicated an outcome as a benefit (e.g., made friends).

Workshop attendees' responses to the question "how did attending the Transition Workshop help you in your adjustment to university life?" were thematically categorised. Of the 74 respondents, the vast majority were positive (n [positive] = 69 vs. n [negative] = 5). The positive responses showed there were three major themes, predominantly associated with the formation of social networks, which are summarised in Table 4.

TABLE 4. Percentages of total responses by category of response

Category of response	% of total responses
Forming social networks	72
Social networks easing transition	47
Social network helping in general adaptation to university life	43
Negative perceptions of the workshop	6

Student responses within the category of forming social networks indicate three broad levels, based on the degree of friendship that developed, from being able to recognise familiar faces, to making friends/good friends.

> … I was able to spot a few familiar faces at lectures, etc., so I didn't feel so lonely.

> It was brilliant because it [attendance at the workshop] really did create for me a new network of friends who I still see regularly.

> [The workshop was] Fantastic! As we were put into groups according to subject choice and timetable arrangement, we saw (and still see) these people all the time. It made a huge difference, especially in the first couple of weeks, in that we already had a circle of friends …. Having someone with the same timetable as me has been great as we get along really well—instant best friend!

Students indicated that the establishment of social networks was beneficial in terms of social and academic adjustment, and in some instances indicated that their new friendships helped them in their studies and helped address the problems of isolation and anxiety.

> It was like a giant jump-start. Because I was settled with friends so quickly it was a lot easier to organise the work side of things … with other people to help and talk to. It's a fantastic idea.

> I met my friends (at the workshop) and we ALL thank you for this day. It has helped me adjust amazingly having friends [original emphasis].

Some comments from students indicate benefits extending beyond the formation of

social networks, including geographic orientation and a better understanding of expectations and that this eased the transition process.

> I knew where some places were, so I didn't feel lost on the first day.
>
> I think that because of the workshop my transition from high school to university has been a lot easier than other students.

Only 6% of the student comments indicated a negative response to the workshop. The comments were that the workshop made "no difference", "did not help at all", "was not of much use" and "social networks didn't work".

Comparing Attendees with Non-Attendees

Participants' self-reports may have been subject to demand characteristics, that is the tendency for respondents to conform to the researcher's perceived expectations. To control for this possible bias, attendees' and non-attendees' responses to the questions:

- What were the three best aspects of your experience during your first semester?
- What were the three worst aspects of your experience during your first semester?

were compared. These questions did not mention the Transition Workshop.

If workshop attendance really enhanced adapting to university then there should be significant differences between attendees' and non-attendees' responses to these two questions, and these differences should echo the thematic categories previously found.

In answer to the first question, "please describe the three best aspects of your university experience during your first semester", four categories emerged.

- Issues related to an appreciation of student life
- Academic/study related issues
- Social interaction issues
- Increased autonomy

> Gaining access to lots of facilities ... resources rooms, photocopying and access to the Internet ... and having beautiful buildings to learn in.

TABLE 5. Workshop attendees and non-attendees reported best aspects of their first semester experience

Best aspects	Attendees ($n = 74$)	Non-attendees ($n = 215$)	$\chi^2 (df = 1)$	p
Appreciation of Student Life	26 (35%)	47 (22%)	4.98	< 0.05 *sig*
Academic/Study-related issues	40 (54%)	84 (39%)	5.62	< 0.05 *sig*
Social Interaction issues	46 (62%)	140 (65%)	0.204	> 0.05 *ns*
Autonomy issues	36 (48%)	113 (52%)	0.355	> 0.05 *ns*

These four categories are summarised in Table 5.

A chi-square analysis indicated that there was a statistically significant difference between the frequency of attendees' and non-attendees' responses for appreciation of student life ($\chi^2_{df=1} = 4.98$; $p < 0.05$) and for academic and study related issues ($\chi^2_{df=1} = 5.62$; $p < 0.05$). Workshop attendees appeared to appreciate and enjoy student life and their studies at The University of Sydney compared with non-attendees.

An equal number of attendees and non-attendees reported that social interaction issues were one of the three best aspects of their university experience. A chi-square analysis indicated that there was no statistically significant difference between the two sets of responses ($\chi^2_{df=1} = 0.204$; $p > 0.05$; *ns*).

Similarly an equal number of attendees and non-attendees reported that issues related to increased autonomy were one of the three best aspects of their university experience. A chi-square analysis indicated that there was no statistically significant difference between the two sets of responses ($\chi^2_{df=1} = 0.355$; $p > 0.05$; *ns*).

In response to the second question "please describe the three worst aspects of your university experience during your first semester", five categories emerged.

- Loneliness factors
- Poor teaching quality
- Problems with studying
- Demands on time
- General adjustment issues

These five categories are summarised in Table 6.

TABLE 6. Workshop attendees and non-attendees reported worst aspects of their first semester experience

Worst aspects	Attendees ($n = 74$)	Non-attendees ($n = 215$)	$\chi^2 (df = 1)$	p
Loneliness factors	14 (19%)	101 (47%)	15.80	< 0.01 *sig*
Poor teaching quality	33 (44%)	104 (48%)	0.324	> 0.05 *ns*
Problems with studying	45 (61%)	110 (52%)	2.11	> 0.05 *ns*
Demands on time	26 (35%)	56 (26%)	2.17	> 0.05 *ns*
General adjustment issues	16 (21%)	40 (18%)	0.27	> 0.05 *ns*

A chi-square analysis indicated that there was a statistically significant difference between the frequency of attendees' and non-attendees' responses ($\chi^2_{df=1} = 15.8$; $p < 0.01$) to the issues of isolation and loneliness. Those who attended the workshop felt less isolated and lonely than those who did not attend. These student comments included: feeling alone in large group teaching venues and not knowing how to overcome this; needing to have more guidance and not getting it; and having to take responsibility for self-learning but not knowing how to balance the long hours and workload with social life and family life.

For the remaining four categories, there was no significant difference between the responses of those students attending the workshop and those who did not attend.

Evidence for the Reliability of Responses

Comparing attendees' and non-attendees' responses to the best and worst aspects of university life provides evidence of the reliability of this qualitative assessment. The emerging thematic categories were identical for both attendees and non-attendees even though they were independently reported and analysed. This is evidence for homogeneity across both groups of students (which is also verified by the results from the extroversion and preferred learning scales). The only significant differences between attendees' and non-attendees' responses are for issues that can logically be related to the effect of the workshop. This adds to the suggestion that the workshop had a systematic effect on the participants and validates the attendees' reports of the benefits of workshop attendance.

Of the nine thematic categories that emerged from the analysis, there were no significant differences between attendees and non-attendees for the six categories of poor teaching, problems with studying, demands on time and general adjustment issues or for social interaction and autonomy (see Tables 5 and 6). As these six categories can be understood as being aspects of university life which are unlikely to be altered by attendance at the workshop, this result is important in validating the methodology. For example, a lecturer's inability to deliver an interesting and engaging lecture will remain poor teaching regardless of students' attendance at the workshop. Both attendees and non-attendees were subject to the same increases in autonomy, and had identical access to organised social and sport clubs. These shared experiences are reflected in the similar magnitude of attendees' and non-attendees' responses.

There were, however, significant differences in responses between attendees and non-attendees for appreciation of student life, and also interest in academic subjects. Increased enjoyment of these factors may well be due to the formation of social networks and study groups associated with workshop attendance.

Discussion

In general, the results presented here support the contention that students who attended the transition workshop are making a more successful transition to university life than students who did not, both in academic and social spheres. As the summary of the first set of results indicated, workshop attendees think less about deferring/dropping out of university studies, are more likely to have been involved in collaborative learning activities and are more likely to have met in social settings outside of university. They are more academically motivated, have a greater sense of purpose and identity, and rate their courses more highly. They are also more likely to have adopted a "deep" approach to their learning.

The findings of this study also indicate that academic performance at university for the current group of Bachelor of Science first year students can be predicted on

the basis of TER, Workshop attendance, age, and possibly gender, and that this prediction is relatively good by social science standards (the models account for 43% or more of overall variance). Of these predictors, TER is the most important contributor, indicating that performance at school is a relatively good predictor of performance at university. This is not to say that exceptions to this finding do not occur—there will still be many examples of students who perform poorly at school but well at university, and vice versa. However, when a broad approach to this issue is taken, the trend between school and university performance is clear. Beyond the impact of TER, the workshop, age, and (possibly) gender all made smaller but significant contributions to the prediction of WAM. As noted, the methodological questions regarding differences between workshop attendees and non-attendees cannot easily be solved, but the lack of difference between these two groups on other variables, and the significant contribution of workshop attendance to the regression equation suggest in favour of the beneficial effects of the Transition Workshop on student academic performance during adjustment to university life. This finding is an important addition to the growing literature on adjustment to university life, and is in keeping with research conducted elsewhere (Muckert & Lizzo, 1996; Tinto, 1996). Further research into this issue is still needed.

The roles of age and gender in the model are less obvious. In the case of age, it may be that students straight out of school (and therefore younger than others) are better prepared for academic study, as continuity between secondary and tertiary study may be helpful in aiding the transition process (as opposed to students returning to study after time in the workforce, travel, etc.). Anecdotal evidence supports this contention, with some mature-aged students reporting that they find it hard to know what is expected of them at university, and despite considerable enthusiasm for their subjects, their academic performance is not necessarily as high as some might have hoped. It is also possible that some older students find it more difficult to establish peer networks in the early stages of university life, and hence may not have the same initial "buffer" against the stress as younger students who find it relatively easy to make friends their own age. However, it is possible that this finding regarding age may dissipate over time as highly motivated older students establish peer groups and "learn the ropes" of what is expected of them, resulting in higher WAMs later in their degree programs. Given the contradictory findings regarding the role of gender, and the lack of significance in the more representative analysis, this finding should be viewed with caution in the absence of other research.

Regarding correlations with WAM, it is interesting to note that the FYEQ subscale of "Academic Application" is most strongly related to WAM, but that even this relationship is only moderate. Most other correlations are positive but close to zero, which may indicate that the subscales on their own are only faintly related to academic performance. As was found in Dalziel and Peat (1998), the workload subscale tends to show the opposite pattern to the other scales. Similarly the ISEL scales (except for self-esteem) show little relationships with WAM. The different finding regarding self-esteem suggests that this general psychological variable could be worth considering in more detail in the context of transition to university life. The pattern of correlations between the ASQ subscales and WAM is unsurprising, and

the moderate positive correlation between the meaning scale and WAM further supports the importance of the literature on approaches to learning within higher education research.

The correlation matrices indicate moderate levels of intercorrelation within the subscales of both the FYEQ and ISEL, as would be expected. Many of the subscales of the FYEQ have moderately strong positive correlations with the achieving and meaning subscales of the ASQ (see Appendix 1), and negative correlations with the reproducing subscale (although the poor reliability observed for this subscale, 0.40, needs to be taken into account, see Dalziel & Peat, 1998). This set of results is not surprising, given that each measure tests aspects of approaches to learning and student attitudes to study. However, the data presented here on the correlations between these scales is another useful addition to the literature in this area. The relatively lower correlations between the FYEQ and the ISEL may indicate that these measures tap different aspects of the first year experience which are not as closely related (although the higher correlations between FYEQ scales and self-esteem is worthy of further study). Alternatively, this overall lack of relationship may be related to the relatively small differences in ISEL scores between groups observed in the original study (Dalziel & Peat, 1998).

As observed in the qualitative data, a key factor facilitating transition in workshop attendees appears to be the establishment of peer groups and social networks. It has long been recognised that social support groups act as a buffer against the onset of anxiety and depression during periods of stress (Cohen & Hoberman, 1983; Wilcox, 1981) and in enhancing self-esteem (Antrobus, Dobbelaer, & Salzinge, 1988). It is also known that the establishment of cooperative learning groups or supportive learning communities expedites the study process (Banerjee, 1997; Marjanovic, 1999; Slavin, 1996), and enhances psychological well-being in first year undergraduates (Ederer, 1993). Students' attitude towards the institution and the process of learning is adversely affected by a lack of care and support (White *et al.*, 1995) and the tendency to adopt a sink-or-swim approach to course management (Doring, Bingham, & Bramwell-Via, 1997) is no longer acceptable. Further, in discussing theories of teaching in higher education Ramsden (1992) notes that the quality of student learning is a function of the context of learning, and that students are best served by a learning environment in which they can meaningfully interact with other students. Hence the findings of the present study are in accord with previous research and theory.

There are some limitations to the present study. Participants in the workshop were self-selected rather than randomly assigned. Ideally, students would have been randomly assigned to either the workshop or a control group. In this way differences in individuals' academic competence and their desire to succeed at university can be controlled. For ethical reasons such control was not possible in the present study. Thus it is possible that the workshop attendees were significantly more motivated to do well at university, or more academically competent than non-attendees. Some support for this hypothesis comes from that fact that participants rated "study-related" issues as being one of the three best aspects of their university experience significantly more often than non-attendees.

However, if the motivation to do well at university and personal academic competence were truly significant factors confounding the outcome of the workshop one would expect to observe significant differences in other areas. For example, if workshop attendees had higher study-related ambitions and motivations, one would expect them to demand a higher level of teaching competency than non-attendees, and consequently report greater disappointment with poor teaching quality than non-attendees. One would also expect to observe fewer reported problems with studying. Neither of these was observed. Further, there were no significant differences between attendees and non-attendees in past school performance and extroversion. Hence there are reasonable grounds for arguing that the observed outcome was related to the effects of the workshop rather than just personality, motivational and competence differences between the two groups.

Future Directions and Conclusion

It appears that the workshop facilitated the formation of social networks and peer groups and these, in turn eased the transition to university. A key finding is that the formation of peer groups was associated with reduced personal problems such as anxiety, depression and loneliness, and also an enhanced students' university experience. At present our understanding of the role of social networks and peer groups in the transition process is limited. Future research should seek to explore the details of this role, and should also seek to uncover individual differences that mediate the beneficial effects of peer group and social network membership.

Many attendees reported that they had organised themselves into study groups and that these were helpful in learning. It would be highly informative to know the long term and generalisation effect of membership: To what extent does facilitated group membership foster cooperative learning skills? Do such fostered cooperative learning skills transfer readily to the workplace? Further, if participation in the Transition Workshop leads to heightened enjoyment of one's tertiary studies, does this enhanced learning experience precipitate the continuance of learning following university?

The workshop outlined in this paper is a simple and effective intervention which has provided evidence for enhancement of the transition to university by fostering social networks and peer groups. Despite its simplicity, such interventions are not widely used by large university faculties. It may be that these kind of relatively simple interventions have been overlooked.

In conclusion, the study reports valuable data on the experiences of first year students during their transition to university life, and the effect of this on academic performance. Further research is needed to replicate the findings presented here, and to explore the many relationships observed between attitudes and experiences of transition and academic performance.

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References

Antrobus, J.S., Dobbelaer, R., & Salzinge, S. (1988). Social networks and college success, or grade point average and the friendly connection. In S. Salzinger, J.S. Antrobus, & M. Hammer (Eds.), *Social networks of children, adolescents, and college students*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Banerjee, A.C. (1997). Effect of lecture and co-operative learning strategies on achievement in chemistry in undergraduate classes. *International Journal of Science Education*, *19*(8), 903–910.

Cohen, S., & Hoberman, H.M. (1983). Positive events and social supports and buffers of life change stress. *Journal of Applied Social Psychology*, *13*, 99–123.

Dalziel, J., & Peat, M. (1998). Fostering collaborative learning during student transition to tertiary education: an evaluation of academic and social benefits. In C. Rust (Ed.), *Improving student learning: Improving students as learners* (pp. 272–283). Oxford: Oxford Centre For Staff and Learning Development, Oxford Brookes University.

Doring, A., Bingham, B., & Bramwell-Via, A. (1997). *Transition to university—a self-regulatory approach*. Paper presented at the Annual Conference of the Australian Association for Research in Education, Brisbane, Australia.

Ederer, E. (1993). Positive and negative social contacts and psychological well-being in juvenile girls. *Studia Psychologica*, *35*(4–5), 397–402.

Francis, L.J., Brown, L.B., & Philipchalk, R. (1992). The development of an abbreviated form of the Revised Eysenck Personality Questionnaire (EPQR-A): Its use among students in England, Canada, the U.S.A. and Australia. *Personality and Individual Differences*, *13*, 443–449.

Gibbs, G. (1992). *Improving the quality of student learning*. Bristol: Technical and Educational Services Ltd.

Marjanovic, O. (1999). Learning and teaching in a synchronous collaborative environment. *Journal of Computer Assisted Learning*, *15*(2), 129–138.

McInnis, C., & James, R., with McNaught, C. (1995). *First year on campus: Diversity in the initial experiences of Australian undergraduates*. Canberra: AGPS.

Muckert, T., & Lizzo, A. (1996). *Can peer mentoring assist the adjustment of first year psychology students in making the transition to university? A preliminary report of work in progress*. Paper presented at the 2nd Pacific Rim Conference on the First Year in Higher Education, University of Melbourne.

Ramsden, P. (1992). *Learning to teach in higher education*. London: Routledge.

Slavin, R.E. (1996). Research on co-operative learning and achievement—what we know, what we need to know. *Contemporary Educational Psychology*, *21*(1), 43–69.

Tang, K.C.C. (1993). Spontaneous collaborative learning: A new dimension in student learning experience. *Higher Education Research and Development*, *12*(2), 115–130.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, *45*(1), 89–125.

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. South Ellis: University of Chicago Press.

Tinto, V. (1996). Reconstructing the first year of college. *Planning for Higher Education*, *25*(1), 1–6.

White, R., Gunstone, R., Elterman, E., MacDonald, I., McKittick, B., Mills, D., & Mulhall, P. (1995). Students' perceptions of teaching and learning in first-year university physics. *Research in Science Education*, *25*(4), 465–478.

Wilcox, B.L. (1981). Social support, life stress, and psychological adjustment: A test of the buffering hypothesis. *American Journal of Community Psychology*, *9*(4), 371–386.

Appendix 1

Correlation matrix between FYEQ, ISEL and ASQ scales

Correlation Matrix (Between Scales)	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Academic Orient.	0.61	0.42	0.54	0.49	0.79	−0.38	0.13	0.09	0.19	0.33	0.39	−0.40	0.68
2. Sense of Identity		0.38	0.30	0.39	0.71	−0.29	0.33	0.33	0.40	0.25	0.14	−0.34	0.36
3. Sense of Purpose			0.42	0.15	0.38	−0.18	0.07	0.04	0.12	0.22	0.35	−0.13	0.33
4. Academic App.				0.33	0.45	−0.29	0.01	−0.06	0.13	0.33	0.60	−0.23	0.59
5. Teaching					0.50	−0.33	0.19	0.08	0.16	0.15	0.20	−0.24	0.34
6. Course						−0.29	0.22	0.18	0.25	0.24	0.28	−0.38	0.54
7. Workload							−0.16	−0.13	−0.11	−0.19	−0.23	0.43	−0.31
8. Tangible								0.61	0.65	0.42	0.04	−0.09	0.06
9. Belonging									0.56	0.37	0.04	−0.03	0.06
10. Appraisal										0.31	0.11	−0.11	0.16
11. Self-Esteem											0.27	−0.09	0.34
12. Achieving												−0.08	0.47
13. Reproducing													−0.29
14. Meaning													