

Developing Peer Mentoring through Evaluation

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Abstract Peer mentoring programs are an important component in the strategy to enhance the first year undergraduate experience. The operation of these programs needs to be informed by evidence as to their effectiveness. In this article we report on a six-year study of the development of a peer mentoring program in which feedback is used to improve program implementation. Evidence from surveys of participants in the program shows that this process has significantly enhanced their experiences and that the effects of these benefits have increased throughout the life of the program. Moreover, participation in the program enhanced the leadership, communication, and organizational skills of the peer mentors.

Key words peer mentoring · first-year experience · evaluation

Peer mentoring programs have been widely adopted by universities and colleges as important components of their strategies to enhance the experience of first year students to assist them in making the transition from school to university. These programs involve senior students mentoring beginning students. Using senior students as mentors rather than

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faculty members takes advantage of their ability to share their own recent experiences as students, and thus the process does not involve the status differences that may exist between faculty and students.

Even within these limitations, as Jacobi (1991) pointed out in her review of the literature up to 1990, there is a wide variety of such programs, differing in their methods, focus, and theoretical orientation. Jacobi also stressed the need for evaluative research “to measure the effectiveness of formal mentoring programs” (p526). The few evaluations that have been reported have focused on either the link between mentoring and academic success (Rodger and Tremblay 2003) or on the impact of mentoring on adjustment to university life (Hall 2007). Rodger and Tremblay (2003) found that students who used the peer mentoring program gained higher grade point averages than those who did not and that the program worked particularly well for students scoring high in anxiety.

Academic achievement is, however, just one indicator of the success of a peer mentoring program and is not necessarily applicable to all such programs. Some programs, including that reported in this study, aim to help new students feel more at ease in a university environment and consequently to reduce attrition rather than to increase grades.

Evaluation can be used to improve programs rather than just to determine their impact. This approach, referred to as “formative evaluation” (Rossi et al. 2004), was adopted by Hall (2007); and we use it for this study.

The Structure of Peer Mentoring Programs

There is a wide variety of components that can be incorporated into the structure of a peer mentoring program, even within the constraints of one aimed at first year university students. Identifying those components that are effective is an important step in developing a successful program. While some components are structural and relate to how the peer mentoring program is organized, others focus on the content to be included in the delivery of the program. In any particular peer mentoring program some of these components will be fixed due to the administrative arrangements established by the institution while others, particularly those involving content, can vary and be determined by program managers or by mentors themselves. It is these components that can be modified to bring about improvements in the delivery of the program. A classification of these components is shown in Table I.

We believe that the choice of discretionary components to include in a peer mentoring program should be informed by a theoretical analysis of the mentoring process. Jacobi (1991) identified four approaches that had been used up to the time of her review, three of which she considered appropriate for peer mentoring in higher education. These were the “Involvement in Learning” approach (Astin 1984), the “Academic and Social Integration” approach (Tinto 1975; 1993) and the “Social Support” approach (Pearson 1990).

Of these approaches, integration and social support are most appropriate for peer mentoring programs that focus on engagement rather than instruction. Integration refers to the extent to which students identify with the university or college community and with the school or department in which they are enrolled. Social support refers to the establishment of social networks among other students and emotional support from peers and staff.

Table I Structure and Organization of Peer-Mentoring Programs

Program Attributes	Program Components	Variations
Program structure	Management	<ul style="list-style-type: none"> • University wide or school based • Steering committee oversight or not • Program manager or student run
	Duration	From one meeting to one year
Program participants	Mentor/Mentee Interactions	<ul style="list-style-type: none"> • Drop-in only • Face-to-face group meetings • Individual consultations • e-mail communications • on-line only
	Mentee characteristics	<ul style="list-style-type: none"> • All beginning students regardless of course • Students in particular schools or courses • Mature age students • Students from particular ethnic groups • Male or female students • Students from remote geographical areas • International students
	Recruitment of mentors	<ul style="list-style-type: none"> • Anyone who volunteers • Those who meet selection criteria • Interview process used or not
	Program organization	<ul style="list-style-type: none"> • Mentor training • Mentor rewards • Meeting arrangements
Program content	Academic	<ul style="list-style-type: none"> • What training do mentors undergo for their role? • What ongoing support do mentors receive? • Are mentors paid or not? • What other acknowledgement of mentor contributions is made? • Are mentors and mentees matched in any way, such as by course content or gender? • Location of meetings with mentees • Frequency of meetings
	Social	<ul style="list-style-type: none"> • Do mentors provide tutoring? • Do mentors give advice on study skills etc.?
	Other	<ul style="list-style-type: none"> • What social events are held? • Do mentors give advice on: <ul style="list-style-type: none"> ○ Accessing university services? ○ Dealing with the university administration? ○ Locating campus facilities?

Although more recent theoretical frameworks have been developed (Kirkham and Ringelstein 2008), these have applied particularly to peer assisted instruction rather than peer mentoring. While peer assisted instruction has been found to be helpful to students (Arendale 2007), it tends to be appropriate mainly in highly structured programs like business, mathematics, and some areas of science (Kieran and O’Neill 2009). In humanities and social science programs the diversity of subjects taken by students is so great that finding a common set of skills on which to base an instructional program is

likely to be difficult unless the mentoring is focused on a particular course or discipline (Smith 2008). For this reason we have chosen to focus more on the integration of students into the university than on providing them with additional instruction.

The Study

The purpose of this study was to identify, through feedback from surveys of mentees and mentors and the application of integration and social support theory, those components of a peer mentoring program that contribute to successful outcomes. The program that was the subject of this study is the Arts and Social Sciences Peer Mentoring Program for first year undergraduate students at the University of New South Wales, which is located in Sydney, Australia and has an enrolment of over 46,000 undergraduate and graduate students across eight colleges, namely, Arts and Social Sciences, Built Environment, Business, Engineering, Fine Arts, Law, Medicine, and Science.

We will first outline the structure of this program and the evaluation procedure used, followed by a report of the findings from the evaluation. We then describe the changes implemented as a result of feedback and indicate in what year they were made so that their impact on the indicators of success can be seen.

The Arts and Social Sciences Peer Mentoring Program

In response to the growing body of research detailing difficulties experienced by first year undergraduate students in making the transition to university (e.g. McInnes et al. 2000), the Arts and Social Sciences Peer Mentoring Program was introduced at the University of New South Wales in 2003. It formed part of a wider program developed by the University Counselling Service initially for rural and remote students in 2002, and the program was extended to other areas in 2003. The aim of these programs was to assist first year students in making the transition to university by making a senior student available as a mentor.

The initial implementation of the Arts and Social Sciences peer mentoring program followed the format of other such programs at the University. In the second half of the year preceding the program mentors were recruited from among upper level students in the programs in which mentees were enrolled. Those who were selected as mentors were required to complete a training course through the University Counselling Service, which dealt with the role and responsibilities of mentors. Each mentor was then assigned a group of mentees with whom they met for the first seven weeks of semester one, at which point the program concluded. Administration of the program is handled by a Program Manager, appointed from among the staff. The current manager of the Arts and Social Sciences program was appointed in 2005 and is the second author of this article.

Participation in the program by first year undergraduate students was and remains voluntary. All incoming Arts and Social Science students are invited to join the program before the semester starts and again at orientation week. Around 15% of students join the program, and of this number 40% complete it. Others leave the program at various points, often giving the reason that they have gained as much as they need from it.

Although developed as part of the University wide initiative and following the procedures already described, the Arts and Social Sciences program developed a distinctive approach devised by the authors of this report. A number of modifications, to be outlined below, have been introduced in response to feedback from participants after completion of the program; and it is these modifications that have resulted in the success of the program.

We next explain how we obtained feedback from mentees and mentors and our findings from that feedback as well as subsequent revisions to the program as a result of this feedback.

Data Collection

We contacted mentees by email in the week after program completion and asked them to complete an on-line questionnaire. In addition to these questionnaires in 2004, mentees who had reported experiencing problems with the program were contacted and asked to participate in an interview about their problems and to indicate in what ways they thought the program could be improved. In 2009, mentees were contacted by the Program Manager via email mid-way through the program to ask how they were coping with university study and how they were finding the peer mentoring program. Forty-one mentees were interviewed in 2004, and 32 responses to the email query were received in 2009.

Approval from the Human Research Ethics Committee was obtained each year before data collection commenced. Question content in the questionnaire was guided by the integration and social support theories as well as by problems that mentees had identified in the interviews conducted in the first year of the program operation. These questions included the following:

1. Had mentees considered discontinuing or deferring their studies; and, if so, what impact did the peer mentoring program have on their decision not to do so?
2. How helpful did mentees find the program in the following areas?
 - Finding their way around the university
 - Adjusting to the teaching style at university compared to high school
 - Making social contacts
 - Accessing university services
 - Feeling part of the university community
 - Dealing with administrative requirements
3. How helpful did mentees find their mentors?
4. What problems did mentees experience in their participation in the program?

Mentors were also asked to fill out a questionnaire indicating how they felt they had helped their mentees, how they might have been more helpful, what problems they had encountered, in what ways being a mentor had assisted them, and what suggestions they had for improving the program.

At the conclusion of the program each year from 2004 these questionnaires were sent to all mentees and mentors. The number of mentees completing these questionnaires along with the number of students participating in the program and the total intake of students in each of these years is shown in Table II. The response rate to the questionnaire averaged 50%. Follow-up emails were sent until the number responding dropped to near zero.

Findings

We now report the results from the surveys of mentees and mentors, and we will outline the revisions to the program that were implemented in response to these findings in the discussion that follows.

Table II Participants in the Arts & Social Sciences Peer-Mentoring Program 2004-2009

	Year					
	2004	2005	2006	2007	2008	2009
Mentees:						
Participants in Peer Mentoring Program	152	161	200	249	188	278
New Arts & Social Science students	1060	1171	1300	1395	1250	1384
% Participating in program	14.3	13.8	15.4	17.8	15.0	20.1
Number completing questionnaire	63	112	123	75	81	142
Response rate	41.4	69.6	61.5	30.1	43.1	51.1
Mentors	22	27	25	24	24	34

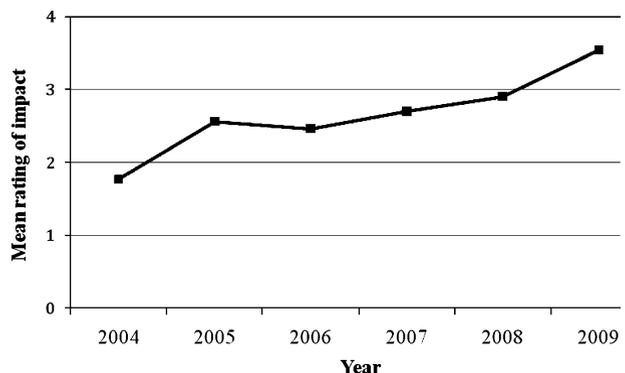
Impact on the Decision not to Discontinue University Study

One option for students who have difficulty making the transition to university is to discontinue or defer their studies. Such an action is disruptive for the student as well as for the institution as the funding for these students is lost. A measure of the influence of the program on student engagement is provided by the extent to which it helps students considering discontinuing or deferring to decide against such actions.

We had asked whether mentees had considered discontinuing or deferring their studies and, if so, to rate the helpfulness of the mentoring program in deciding to stay at university. These helpfulness ratings are shown in Fig. 1 over the period from 2004 to 2009. Only a relatively small percentage of students experience such serious problems that they consider dropping out. However, if the program can help those students in this situation, then it has made a major contribution to their retention. The numbers of students responding to this question ranged from 20 in 2004 to 35 in 2009, representing 28% of all respondents. Although small these numbers are not insignificant.

The steady increase in these ratings since 2004 shows that the changes that have been made to the program over this period have resulted in an increased impact on its helpfulness in averting discontinuations. Analysis of variance of the mean ratings showed a significant linear increase across years ($p < .001$) and no significant departure from linearity. By 2009 the mean rating had risen to 3.54 out of a maximum of 5; and 25.7% of students had chosen the maximum rating, indicating that the program had

Fig. 1 Impact of the peer-mentoring program on decision to stay at university



made a major impact on their decision. This should be compared with 2004 when just 4.5% chose a maximum rating.

Helpfulness of the Program

Ratings of helpfulness of the program are shown in Fig. 2. These ratings are also on a 5-point scale from 1, of little or no help, to 5, helped a great deal. All ratings of helpfulness show steady improvement over the six years. Analysis of variance of the mean ratings showed significant linear increases across years in all ratings ($p < .01$) and no significant departures from linearity. By 2009 all mean ratings are over 4 on the 5-point scale.

Feedback from mentees shows that not only have improvements in helpfulness of the program increased since 2004 but also that problems experienced by mentees have shown a corresponding decrease.

Comments by mentees in response to the mid-program email sent to them by the Program Manager bear out the findings from the questionnaire. The following extracts from four of the responses provide examples of these comments:

- I'm usually a shy person though, so it was hard to participate in the discussions at first; but I think now I'm fine. I think signing up for a peer mentor is the best decision I have ever made.
- I think the mentoring program is really special because there is another avenue to feel a part of this campus when it is so easy to feel small and out of place.
- The Peer Mentoring Program I think has been a great idea. It has allowed us to adapt to university life knowing that someone older and experienced will be there if we have had any problems. It has also been a great way of meeting new people and making new friends, which I think has been very important at this early stage of university life.
- It has been a really valuable resource to have an older experienced student to answer all my questions. As a consequence I have gained a greater clarification and understanding in many areas of university life. This has become evident through the differences in understanding between myself and my new uni friends, who didn't undertake the program and who are still worrying about the issues I was shown in my very first weeks.

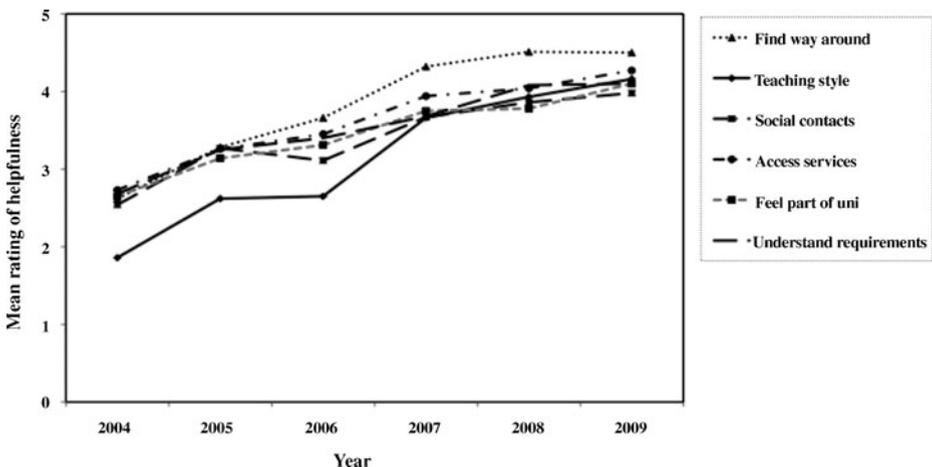


Fig. 2 Ratings of helpfulness of the peer-mentoring program

Helpfulness of Mentors

The recruitment process, training, and feedback provided to mentors have resulted in improvements in ratings by mentees of their mentors over the six years included in the study. Mentees were asked to rate the helpfulness of their mentors on a five-point scale, and these ratings are shown in Fig. 3. These ratings have shown steady increases over the six years although levelling off after 2006 near the maximum rating of 5. Analysis of variance of these ratings showed a significant linear increase across years ($p < .001$) and a significant departure from linearity ($p < .01$), reflecting a tapering off of the ratings as they approach the maximum possible.

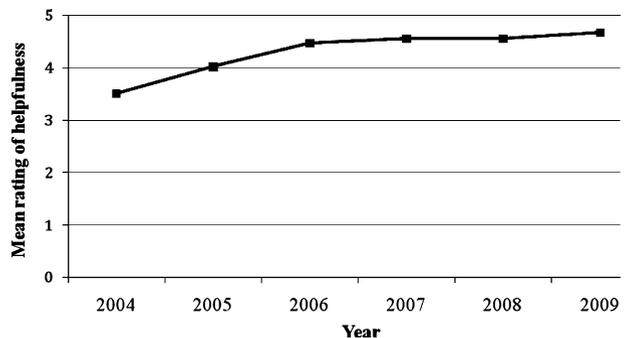
Impact on Mentors

Although the program targets first-year students, mentors also benefit from their participation in the program as demonstrated by Heirdsfield et al. (2008). A mentor perspective on the program provides some valuable insight into its operation. In the questionnaires sent to them after program completion mentors reported that their communication, social, employment and organizational skills, and self-confidence had been enhanced. In 2009 one mentor wrote the following in the mentor's journal.

A major insight in the past few weeks has definitely been the confirmation of how important I and the other mentors, and the mentoring program as a whole, are. I always thought of the role of being a mentor as important, but actually taking part in activities, organising meetings, sending emails, answering phone calls from lost first year students and facilitating my meetings with my first years has only made my knowledge of this all the more stronger. Seeing the experience of my first years has made me realise only more that uni can be daunting and it is good to have someone there to act as a kind of guide, and to answer questions. This insight is also coupled with discoveries about myself, mainly that my confidence has improved, showing me that this is a rewarding experience for me and I also very much hope for my first year students.”

These and other similar comments by mentors illustrate their commitment to the program and the seriousness with which they take on the responsibilities of their role.

Fig. 3 Ratings of helpfulness of mentors



Discussion

The findings presented here show that the measures of program success improved outcomes during the six years during which data has been collected. We believe that the modifications to the program made in response to feedback have been instrumental in bringing about these improved ratings. The modifications we have made are as follows:

Mentor Recruitment and Training

A rigorous recruitment and training program for volunteer mentors, which occurs in the second half of the preceding school year, in addition to that provided by the University Counselling Service was developed and implemented in 2006 to improve quality and dedication. We recognized that commitment of the mentors is an important ingredient of program success.

Since 2006 the recruitment program requires that those interested in becoming mentors attend an informational meeting to ensure that they understand what is involved if they commit to the program. Applicants are then interviewed to assess their suitability for and commitment to the program. Those selected are then required to attend two strategic planning sessions conducted by the Program Manager in which they are provided with information to enable them to link activities conducted with mentees to the goals of the program.

Scheduling Difficulties

Scheduling difficulties had been identified in the feedback as a major problem in participating in the program. Starting in 2005 mentors were made responsible for finding alternative groups for those not able to attend scheduled meetings. Mentees not able to attend face-to-face meetings because of other commitments are contacted by phone or email to keep them informed of the program activities and to deal with any issues they might have.

In 2007 we introduced weekly open-house, drop-in sessions for mentees. These sessions are hosted by a roster of mentors, so that mentees can ask questions, have lunch with someone, or just talk to a mentor.

Adapting to the Teaching Style at University

Beginning in 2006 a “Meet the Professor” forum was included in week 3 of the program so that new students could hear from a senior academic about communicating effectively with faculty members, the nature of the university environment, students’ rights and responsibilities, and ways to get the most out of their time at university. Students are encouraged to ask questions at this session. Mentors are also required to incorporate advice into their meetings on how to approach studying at university and how it differs from high school.

A Mentoring Web Site

A mentee web site was developed in 2007 to facilitate communication among mentees and among mentees, mentors, and the Program Manager. This web site has proved to be highly

popular, and there were 257 discussion postings in 2009 on topics ranging from advice and information from mentors to quality of food outlets on campus from mentees.

Support for Mentors

Providing support for mentors is an important ingredient in the program. The importance of providing continuing support for mentors has been recognized and incorporated into the program by including a feedback meeting for them during the program to enable them to exchange ideas, raise problems, and discuss solutions. This meeting is facilitated by the Program Manager, who encourages them to guide the process of reflective questioning and problem solving within the group so that it is linked back to the approach in the strategic planning meetings.

In 2007 we established a web site for mentors. As with the mentees' web site, this site has proved to be popular; and there were 384 discussion postings in 2009, exchanging ideas and advice promoting consultative problem solving.

Since 2008 mentors have been required to complete mentor journals. In these journals they report who attended their sessions and when the meetings were held, and they reflect on their experience of the program. Over the course of the journal entries we encouraged mentors to move from operational feedback on their meetings with mentees to personal leadership style and reflection on the goals they had set in the strategic planning meetings and on their skill development.

In 2008 a new category of Senior Mentor was introduced. These Senior Mentors were chosen from among those who had served as mentors in previous years and were willing to assist further with the program. In 2009 each Senior Mentor was assigned to a group of new mentors and acted as a source of support and assistance to them.

Although mentors are not paid for their contribution, they are invited to a mentors' dinner at the conclusion of the program where they are presented with a certificate of appreciation from the University. A statement acknowledging their role as mentors is also included on their official university transcript.

Impact of the Program Improvements

Although the impact of particular components included in the program cannot be determined in isolation, those that focus on social support and integration as suggested by theoretical accounts of the mentoring process (Tinto 1975; Pearson 1990) have been emphasized. These include helping new students form social networks by ensuring mentee groups are large enough and by organizing social functions, helping students integrate into the university environment by familiarizing them with the campus layout and with accessing campus services, and assisting mentees in adjusting to the university academic environment.

While the program retains the basic structure adopted on its introduction in 2003, the changes in the discretionary components of its delivery have clearly improved its effectiveness insofar as participants in the program report that the program has helped them in making the transition to university study. Readers are reminded that a significant number of students who felt so overwhelmed by the university environment that they had seriously considered discontinuing their study reported that the program had helped them decide against this action. Students who discontinue their studies not only experience personal disruption to their career plans but are also a loss to the university. To the extent that the program helps those students at risk of discontinuing, it is providing a benefit to the

university as well as to the students themselves. In 2009 of the 35 students who reported considering discontinuing or deferring only one reported that the Peer Mentoring Program had little or no impact on the decision to stay.

Conclusion

Peer mentoring programs are increasing and becoming an integral component in strategies adopted by higher education institutions to enhance the firstyear experience. Implementation of these programs needs to be informed by theoretical analysis and empirical evidence on the components that contribute most to successful outcomes. In this article we have identified such in a program for Arts and Social Sciences students at one specific university. These components have drawn on the social integration theory of Tinto (1975) and the social support theory of Pearson (1990) and on empirical evidence from surveys of mentees and mentors which provided feedback.

Incorporation of changes in the discretionary components of the program has resulted in improvements in all indicators of program success that we have measured. The program, as it is now structured, includes features that have contributed significantly to its success. These features include careful selection and training of mentors and inclusion of content designed to promote successful integration of and social support for mentees.

Whether the features of this program can be generalized to students in other institutions needs to be established by research on other student populations. Although first year students in general experience similar transition problems (Krause et al. 2005), what works for one group of students may not necessarily be transferable.

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