Strategically enhancing student engagement in the first year: focusing on sustainable interventions

Jacques van der Meer and Carole Scott
University of Otago, New Zealand

Massification has resulted in larger classes and student/staff ratios. This has iumpacted on interaction between staff/students and thereby student engagement. Student engagement can significantly contribute to students' satification, achievement and retention. Activities that enhance student engagement include involvement in peer learning and student leadership opportunities. We will describe how a New Zealand University is currently developing and piloting these initiatives. We will argue that these can contribute to students developing not only more effective learning skills in the first year, but also expose them to opportunities to engage in student leadership opportunities in the second year and beyond. Where resources to enhance interaction between staff/students are often constrained, interventions drawing on peer student involvement are not only very effective but also contribute to institutions' commitment to developing life-long learning competencies and are in the end more sustainable.

Introduction

Wider societal changes, such as economic and communication technological developments, have put considerable pressure on the higher education sector to change (Haggis, 2004). It has been argued that universities especially have been taken by surprise by the many changes and have responded with varying degrees of success or enthusiasm (Duke, 2002; Peters & Roberts, 1999). These changes include increased greater numbers of students entering university, 'massification' (Scott, 1995), and consequentially larger class sizes and increased student/staff ratio (Biggs, 1999). These changes impact on staff/student interaction.

Extensive research has shown that positive academic experiences in the first year are crucial for student engagement with university education and satisfaction with the institution. They also directly affect student retention and ultimately degree completion. Research into this has been extensive in Australia (Krause, Hartley, James, & McInnis, 2005; McInnis & James, 1995, 1999, 2004; McInnis, James, & Hartley, 2000; McInnis, James, & McNaught, 1995), the U.K. (Yorke, 1999, 2002, 2004; Yorke & Longden, 2004, 2007, 2008), and the U.S. (Pascarella &

Terenzini, 2005; Tinto, 1988, 1993; Upcraft, Gardner, & Barefoot, 2005). New Zealand research is as yet limited, although some research has started to appear over the last few years (Prebble et al., 2004; Zepke & Leach, 2005; Zepke et al., 2005). Students' engagement beyond required course work activities can significantly contribute to students' satisfaction.

The concept 'student engagement' has increasingly gained currency over the last decade (Krause & Coates, 2008; Kuh, 2003; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2007; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Pascarella & Terenzini, 2005). It broadly refers to students' engagement in activities that contribute to their learning achievements and their sense of belonging to the academic community. These activities include interaction between staff and students and between students. It also includes activities other than those directly related to course work, such as non compulsory peer learning activities and service activities such as leadership roles in student mentoring or study group facilitation.

In this article we will make a case for the efficacy of peer initiatives by discussing the development of two programs in one New Zealand university, a peer learning and student leadership program. We will argue that, in spite of increased numbers of students starting university, student engagement can be enhanced through such programs and that these could also lay the foundation for life-long learning.

Peer learning

The value of students learning from each other through working together is well-recognised (Brookfield & Preskill, 1999; Brown & Thomson, 2000; Fowler, Gudmundsson, & Whicker, 2006; Johnson & Johnson, 1999; Johnson, Johnson, & Smith, 1998; Kagan, 1994; Ladyshewsky, 2001, 2006; Leach & Knight, 2003; Nelson, Kift, Creagh, & Quinn, 2007; Sharan, 1994; Topping, 1996). Peer learning can be considered conceptually to belong to collaborative or cooperative learning strategies. Cooperative/collaborative learning can be described broadly as active engagement of students in small groups for the purpose of completing tasks. The key aspect is that learning development is facilitated through interaction and collaboration between students.

There is an increasing interest in the benefits of peer learning for tertiary education (Brookfield & Preskill, 1999; Miller, Loten, & Schwartz, 2000; Nelson, et al., 2007). Many universities define graduate attributes, graduate skills, or competencies that include such aspects as working in groups (Nelson, et al., 2007). Topping (1996) lists benefits such as the value of verbalization and questioning when students work together, immediate feedback, greater motivation, and reduced social isolation.

Theoretical support for peer learning can be found in cognitive development theory (Johnson, et al., 1998; Ladyshewsky, 2001; Slavin, 1991, 1996) which draws on the ideas of socio cognitive conflict whereby students realize their differing understandings of their shared knowledge base. It is in resolving the disequilibrium that learning happens (Ladyshewsky, 2001). Vygotsky's

social constructivist perspective is one of the more well-known theoretical frameworks in higher education. In this framework students make sense of material by questioning, listening, communicating and explaining it to others (Johnson, et al., 1998; Topping & Ehly, 2001).

Evidence shows that peer learning programmes aid students' engagement with university and academic success. The best-evidence synthesis of a wide range of literature by Prebble et al. (2004) indicated that one particular programme has been shown to be effective: Supplemental Instruction programmes . Supplemental Instruction has its origins in an approach developed in North American universities (Martin, 2005). Deanna Martin originally developed this programme in the University of Missouri in the 1970s. It has since been validated by the U.S. Department of Education, and is supported by effectiveness studies using longitudinal data (Martin, 2005). Since 1973 Supplemental Instruction programmes have been implemented widely across the U.S. in such universities as Cornell, Purdue, Amherst and Rutgers. In Australia and New Zealand Supplemental Instruction is known as Peer Assisted Study Sessions (PASS). In the following section we will focus on this particular programme as an example of a well-researched peer-learning programme. We will do so by using data from the pilot of PASS in our own institution.

The Peer Assisted Study Sessions Programme

The Peer Assisted Study Sessions Programme (PASS) is aimed at assisting students in achieving success in courses that have high stakes (e.g. compulsory in order to progress with their studies, or requiring high marks for limited-entry courses), or courses that are perceived by students as difficult. The study sessions are facilitated by students who themselves have achieved well in these courses, or students who are regarded as high performers in the discipline concerned. The study sessions do not replace lectures or tutorials: they are supplementary to them. As the PASS programme has both a content-specific and general academic skills focus, it can play an important role in both students' integration into academia and overall satisfaction with their first-year experience.

The PASS programme was piloted in our institution in 2008 in a first-year business course; it attracted 172 students. Evaluation showed that students who attended most of the available sessions performed better than those who attended none.We used two data sources: data from the attendance sheets kept by the PASS facilitators and the mid-term and final marks provided by the course administrators. In summary: the average mark for both the mid-semester test as well as the end results were significantly higher for those who attended PASS sessions. The failure rate for non-PASS participants was 22.3%, for PASS participants 7.2%.

The first analysis was performed after the mid-semester marks were filed. A T-test between those who had at any point attended PASS and those who did not, suggested a significant difference between the performance of the two groups ($t_{(693)}= 3.782$, $p.< .001$). Students were then grouped into four attendance bands. An ANOVA analysis further confirmed that there were some significant differences in the results ($F_{(2,691)} = 6.282$, $p < .001$). Post-hoc analysis

(Bonferoni) indicated that the significance lies between the group who attended no sessions at all, and the group who had attended five or more sessions. The difference was also meaningful; effect size calculation established that the effect was large (Cohen's d = .60).

The same statistical analysis was performed after the release of the final marks. However, a T-test was performed only for the group of students who passed their mid-term test. As before, the results suggested a significant difference between the performance of the two groups ($t_{(636)}$= 4.512, p.< .001). After grouping students in bands of sessions attended, an ANOVA analysis confirmed that there were some significant differences in the results, ($F_{(3,632)} = 9.422$, $p < .001$). Bonferoni's post-hoc analysis indicated again that the significance lies between the group who attended no sessions at all, and the group who had attended 8-12 sessions. Effect Size calculation for this group confirmed that this was large (Cohen's d = .75). The table below shows the final mark results for all students, and for the group of students who had passed their mid-term test.

Table 1 Attendance for the whole semester and pass marks

Attendance	**Final marks for all enrolled students**			**Final marks for students who met terms**		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation
Did not participate	61.67	529	23.187	67.06	475	17.164
1-3 sessions	67.44	66	18.498	70.02	63	14.400
4-7 sessions	71.38	45	16.258	73.53	43	12.999
8-12 sessions	78.38	55	12.893	78.38	55	12.893
Total	**64.17**	**695**	**22.270**	**68.77**	**636**	**16.654**

The conclusion that can be drawn from the statistical analysis is: the more sessions students attended, the better they achieved, particularly if they attended most sessions on offer. Peer-learning, then, had benefits for students who enrolled in this pilot. Methodological issues could be advanced that would qualify the results of this evaluation, such as self-selection of participants. Lewis, O'Brien, Rogan and Shorten (2005) in their study, however, found that self-selection bias tends to under-estimate the effectiveness as weaker students tend to enrol in such programs. In this pilot we have not attempted to test whether this applied to our participants as well.

As we are now expanding the pilot into a range of other first-year papers, we are also interested in enhancing benefits for leaders in this programme. We seek to do this through their involvement in a Student Leadership Development Programme.

Student leadership development

Leadership development as a concept is also extensively researched, both in a general sense, and in the context of student leadership development in higher education. The term 'leadership' in the context of higher education is not easy to define. Bardou et al (2003) suggest it relates to "a characteristic of individuals and how they act in influencing others". Komives, et al (2005) emphasise the relational aspects of leadership with a focus on process, collaboration, and ethical relationships.

A number of common characteristics are thought to aid development of student leadership potential: participation in volunteer or community service, peer-mentoring, leadership development programme, elected leadership, participation in group projects. Astin and Sax (1998) found that students who participated in volunteer service opportunities increased students' self-rated leadership abilities. Students also reported an increased level of satisfaction with the institution.

Not much is known on how student leadership develops (Komives, et al., 2005). More frequent leadership behaviour, however, is exercised when student leaders have an opportunity to reflect on their experiences (Posner, 2004). Bardou et al (KJ Bardou, et al.) drawing on Bandura's concept of self-efficacy (Bandura, 1977; Bandura, Freeman, & Lightsey, 1999), argue that beliefs about one's leadership capabilities determine how leadership is demonstrated.

In our institution we want to play a more active role in helping students who are involved as leaders in our mentoring and peer-learning programme, to develop their leadership potential. This year PASS leaders and students involved as mentors have an opportunity to opt into workshops that provide them with structured opportunities to develop and reflect on their skills and identity as emerging leaders. For 2009 these workshops include:

- Leadership 101 - "it is about people". Setting the scene for thinking about leadership and the primacy of the relational dimension.
- Leadership and conflict management – keeping relationships alive. Reflecting on and developing skills of non-defensive communication
- Ethical and responsible leadership – exploring limits and potential. Exploring and clarifying our values, vision and conduct as leaders.
- Developing your leadership career – where can it take you? Considering leadership in the context of your ambitions and the skills you may need to develop
- Considering leadership style and models – one size fits all? Discussing leadership in the context of divergent models, frameworks, values and approaches.
- Moving forward into your Leadership Future – setting goals. Pulling all of it all together and setting goal posts for the coming years.

Over the coming years we anticipate extending this opportunity to students who are involved as leaders in other programs in our university. These programs include, for example, student union political and social activities, class representative roles, and a range of peer mentoring schemes

organised by various student services departments, such as the student health centre, international office and Māori and Pacific Island support centres. Furthermore, residential colleges also involve senior students in a mentoring capacity.

Institutional benefits

Apart from the benefits of mentor or peer-learning programmes to students, there are also institutional benefits. Staff/student and student/student interaction in teaching environments is linked to the retention of first-year students (Haggis & Pouget, 2002; James, 2001; Krause, 2006; Kuh, 2003; Wilson, 2004). James (2001) therefore, points to the importance of more intensive interaction with first-year students in the early part of the year. Although resource-intensive solutions may be prohibitive, strategically allocating resourcing in the first year (James, 2001) may benefit long term retention of students.

Where financial resources are constrained, reallocating some of the resources to peer-led programmes makes sense. Programmes such as PASS, for example, have benefits over tutorials. They not only provide course content support, but also tend to provide a level of social support and help with integration of students into university life.

Furthermore, as these programmes can draw on a large pool of students and are often coordinated by non-academic staff, these programmes are more sustainable and do depend less on more transient academic teaching staff members with often competing demands on their time, such as performance pressures in the area of research.

From an institutional perspective, peer-led programs can also contribute to development of often articulated graduate competencies in high level university documents. Peer study sessions programme such as PASS can contribute to first-year students developing effective learning skills, thereby laying the foundation for life-long learning skills. Within my own institution, for example, our Teaching and Learning Plan (a document setting out for staff its expectations and aspirations for teaching students) states that as an institution we need to ensure that students have the basic learning skills for study at tertiary level. A student leadership development programme can contribute to competencies in our Teaching and Learning Plan related to students being able to work effectively as team leaders and leaders of change.

A student leadership programme could arguably also channel students' energy, enthusiasm and need for peer interaction in a constructive way. Recent neuroscience research suggests that the maturation of the cognitive control functions in the prefrontal cortex is not complete till early adulthood, ages 20-25 (Blakemore, 2008; Cauffman & Steinberg, 2000; Steinberg, 2007). It has been suggested that this could provide some possible explanations for the risk-taking behaviour of university-age students, especially in contexts where peer-influence is strong (Steinberg, 2007). A Student Leadership Programme with a strong emphasis on peer relationships could play a role in mitigating and/or preventing some of the risk-taking behaviours.

In conclusion, peer-learning programmes are effective and provide not only support for academic content but also develop life-long learning skills and contribute to social integration. These programmes depend on trained student leaders and offer opportunities to develop another set of life-long learning skills in these leaders. Coordinating a cohesive institution-wide student leadership programme that includes all students involved in leadership roles in all peer oriented schemes and programs across the university, offers the opportunity to enhance and harness the leadership potential of a large group of students.

Deliberate expansion of peer oriented learning and mentoring programs therefore makes strategic, organisational and educational sense. This development would also be sustainable and does not depend on expanding the academic workforce or increased demands on academics to ensure student engagement and satisfaction.

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