Student Peer Assisted Mentoring (SPAM): A Conceptual Framework

Ross Kirkham

Damian Ringelstein

Abstract
This paper presents a conceptual framework for the Student Peer Assisted Mentoring (SPAM) program and provides some background pertaining to its evolution as well as identifying theoretical aspects supporting the model. From an intervention approach based on supplemental instruction the mentoring program has evolved into a model based upon formal assisted learning. The program encourages students to become involved either as mentees or peer mentors under the supervision of academic leaders. The motivating factors for voluntarily becoming involved are not just altruistic. There are a number of benefits identified in the paper for both mentors and mentees derived from participation in the program.

Key Words: Supplemental instruction (SI), assisted learning (AL), peer mentoring, attrition rates, retention, student self-esteem.
Introduction
This paper is a reflection on the development of strategies to assist students in their learning process and thereby motivate them to remain committed to completing their higher education. The goals are therefore to support the learning process by supplementary instruction and to raise the level of student motivation thus retaining them in the university. Martin and Arendale (1992) identify student attrition as a major area of concern and endorse the use of (SI) as a use of combating the problem. One approach is to provide opportunities for students to be more involved in the learning and teaching process. Research has shown that student involvement does have a motivating influence on performance. Research has shown that student involvement does have a motivating influence on performance. Researchers (Astin, 1984; Mallette & Cabrera, 1991) reported finding that the level of student involvement with on campus activities was positively correlated with retention at university. In addition involvement has also been found to influence learning (Astin, 1984, 1993; Pascarella & Terezini, 1991; Ory & Braskamp, 1988; Parker & Schmidt, 1982). In effect, the greater the students’ involvement in activities outside of the traditional lecture or tutorial the greater their acquisition of knowledge, development of relevant skills and likelihood of remaining at university.

Various strategies have been developed over a number of years to address the needs of students and particularly the problems associated with transition to the university environment. Calder (2004) provided evidence that peer interaction could play a central role in the successful transition process. Arendale (2007) compiled an annotated bibliography of the various ‘peer cooperative learning programs’ proposed that they could be delineated according to their different approaches and therefore set into six categories. The six categories were selected by Arendale (2007) on the basis that the programs meet a set of characteristics that could be used to justify their relevance:

- The program must have been implemented at the postsecondary or tertiary level;
- The program has a clear set of systematic procedures for its implementation that could be replicated by another institution;
- Program evaluation studies have been conducted and are available for review;
- The program intentionally embeds learning strategy practice along with review of the academic content material;
- The program outcomes include increased content knowledge, higher final grades, higher pass rates, and higher college persistence rates; and
- The program has been replicated at another institution with similar positive student outcomes.

Source: Arendale (2006)

Peer assisted learning is a term used to describe a variety of approaches that may involve an active or interactive mediation of learning by students with the support of other students (Topping & Ehly, 2001:113). Assisted learning has become more commonly associated with a teaching method or tool. For example, the terminology is commonly used to describe computer assisted learning (Tseng, 2005). In these circumstances the computer software is the tool being used to assist in the learning process. Peer-assisted learning however, simply describes the situation where students teach other students (Adler & Milne, 1997: 196). The term more appropriate, although seemingly less used is, peer tutoring and this is an

---

1 The term peer cooperative learning programs was coined by Arendale (2004).
informal approach to student learning through a process involving tutoring or proctoring between advanced and less advanced students (Saunders, 1992). A concern with such an informal system is that there is the potential for the learning of inaccurate or inappropriate problem solving skills. The solution as expressed by Saunders (1992: 6) is to include some form of supervision or monitoring of the peer tutoring activities.

Supplemental instruction according to Blanc, DeBuhr & Martin (1983: 81) is more concerned with assisting students to learn course content as well as developing their competency in reasoning and study skills. Programs based on supplemental instruction are commonly conducted on the basis of providing students with the opportunity to discuss and process course information (Arendale, 1997). This approach is in keeping with Knowles (1972) proposition that students are likely to maximise their learning when the education process focuses on what they need to learn rather than on what the lecturer wants to teach. Arguably, this is consistent with providing a student centred learning experience (Schon, 1983; Kolb, 1984) may be described as a supplementary system designed to support existing teaching approaches and augment the learning process.

Research suggests that supplemental instruction in the form of peer assisted learning can have a positive effect on student learning (Comgos & Schopes, 1993) and result in improved academic performance (Bidgood, 1992). Programs of this nature have been found to be effective in producing positive differences in student performance and retention rates (Martin & Arendale, 1992: 4). In Australia, researchers (Calder, 2004; Daley, 2004; Freeman & Kelton, 2004; and Treston, 1999) have examined various peer mentoring programs and their findings provide further evidence of the existence of benefits in terms of student performance, retention and satisfaction. Another benefit attributed to peer involvement is the phenomenon described by Whitman and Fife (1988) as 'to teach is to learn twice' in effect leading to the acquiring of a better understanding of the topic by those involved as peer mentors in the teaching process.

The literature supports the proposition that involving students in assisting other students is a viable and useful approach to teaching and learning. What is less clear from the literature is which method is the more appropriate for implementing and conducting such supplemental or assisted learning strategies. What is apparent is that any supplemental or assisted learning involving the use of students as peer tutors or mentors is perceived as being separate from the traditional teaching model at universities. In this sense the traditional educational process may be thought of in terms of the formal educational experience and any such mentoring program would be of an informal nature. That is, informal by virtue of being adjunct to the university course or degree. The following model (Figure 1) is proposed to identify where a student mentoring program (in this case student peer assisted mentoring SPAM) would most likely fit within the various educational aspects taking into consideration the contribution to the desired educational outcomes. This is a general overview and the concept has been drawn from the work of Tinto (1997) with modifications to simplify the relevant relationships and incorporate the mentoring activity.
Figure 1: Model of Educational Aspects

A Historical perspective of SPAM

The concepts being presented in this paper as an approach to mentoring may be traced back to mentoring activities between students which commenced in 1985. However, it was not until 1990 that the concept of supplemental instruction in the form of assisted learning was extended to the mentoring of 10 undergraduate students in a first year accounting course. The mentoring approach consisted of one full time academic with the support of one sessional academic providing supplemental instruction. This became the nucleus for the development of the SPAM program. Two of the students from this initial group became mentors in the following year. Effectively, the two students who had undertaken the SPAM program in the previous year volunteered to act as mentors for students who were having difficulties with understanding the first year accounting topics. This was the embryonic stage of the student peer-assisted mentoring approach. These mentors were supervised by the academics who acted in the capacity of supervisors. The program did not continue in the same format after 1992 due to difficulties in attracting and retaining student mentors. The program continued for three years with the fundamental principles of providing supplemental instruction, still in an embryonic stage. The concept was however, carried forward to other universities around Australia by the academics.

Under the original format, mentors were available at a prearranged time each week, so that students could ask questions about the topics covered by the lectures and discuss problem solving skills for homework. These sessions, were aimed at providing a form of supplemental instruction on a more individual basis than would occur in a tutorial. Students were able to ask questions without any fear of being ridiculed for their lack of understanding of the topic. The Mentors were required to keep a record of attendance so that the mentored students' academic progress in normal course assessments such as assignments and review quizzes could be monitored. This was particularly useful for monitoring whether the students had gained an understanding of the topic or whether they were still
encountering problems. At the end of semester students were asked if they were satisfied that their learning had been assisted by the mentoring program and whether their learning requirements had been meet.

**Pedagogical Evolution of SPAM**

The SPAM program has evolved with the central purpose still being the provision of assisted learning in the form of supplemental instruction with students actively involved as peer mentors. Research (Sandberg, 1990) has indicated that collaborative learning can improve academic performance as well as enhancing a student’s self-esteem. Self-esteem has been recognised as a major contributor towards motivation and is instrumental in making learning a fulfilling experience. Krause et al (2007) drew a parallel between this fulfilment and Maslow’s hierarchy of human needs, which described how humans, in order to achieve self esteem, require competence, approval and recognition.

The program’s prime objectives are to: increase student performance; and increase retention rates. These objectives are achieved by: creating a sense of community through involvement in networking leading to the formation of study groups; providing a non-threatening atmosphere which is conducive to learning; providing study and learning strategies that can be employed in other areas of study; and avoiding the creation of a remedial program that may carry negative connotations.

For the most part the SPAM model offers a program that is flexible to the needs of the individual student. The program has the potential to develop learning techniques that are beneficial to the student mentees as well as the student mentors. The conceptual framework for SPAM is presented in Figure 2 below.

**Figure 2:**
*Conceptual Framework of the SPAM Model*
There are three distinct categories of SPAM sessions conducted during a semester.

The first is the more formal session in which the academic leader reviews and explains the specific issues and problem solving techniques relevant to a particular topic. These sessions may involve the use of handouts or template material for students to follow (in the case of computer work templates may be spreadsheets) such materials are useful for reflection and provide direction for learning. This is basically a review of the topics covered by the lectures for comprehension of the homework and may provide a better insight into the assessment. At these sessions the mentors act as facilitators assisting in the process. The sessions also serve as a means of training the mentors, and provide an opportunity to evaluate the suitability or needs for any further instruction for the mentors. These sessions are conducted at regular weekly times during semester.

The second category of SPAM sessions is less formal in the sense that rather than working on one particular topic students with the mentors may work on addressing specific concerns. These sessions are structured with student mentors being more actively involved with or without an academic leader present. These sessions are offered on the basis of a prearranged time each week.

The third category extends SPAM into the area of self help. All students are encouraged to form study groups (networking or study-buddies), to operate outside the formal educational setting. This approach is based on the principle that peer collaboration and networking can aid learning, help create a sense of belonging and can positively contribute to student retention. Retention has two classifications. These can be described as retention of knowledge via the process of deep learning (Biggs & Tang 2007) and or the retention of students in their study programs at university. The concept of knowledge retention was addressed by Biggs & Tang (2006) with their investigation of the techniques involved in deep learning. The findings provide support for the proposition by Ramsden (2003) that students who achieve deep learning as opposed to a shallow learning retain that knowledge past the final examination. Ramsden (2003) argued that shallow learners merely regurgitate facts for an examination and then promptly forget them. By promoting the ideals of ‘students teaching students’ SPAM transforms the cohort from traditional tutorial participation to one of self help closely following the ideals of a study group (Morrs & Murray 2007).

Retention at university has been shown to be closely aligned with the student’s motivation. Ramsden (2006) suggested that too many teachers deliver lessons from a position of power in displaying a superiority of knowledge to the students thus lowering the motivation level of students. Empowerment gained from SPAM can strengthen student motivation. Both Ramsden (2006) and Loughran (2003) endorsed the approach of promoting the motivation of students through their engagement in the learning process.

SPAM sessions are of one hour in duration and attendance is purely voluntary. The sessions are conducted for small groups of first year
students. The activities are designed to assist student learning and compliment the desired course learning outcomes. Based on peer mentoring and collaborative learning the sessions are aimed at providing study skills as well as facilitating the learning of course content. Student learning is facilitated by a SPAM Leader supported by one or two, course competent undergraduate student Mentors.

The Academic SPAM Leader designs the learning activities to address the appropriate problem solving skills required for the course topics. SPAM Leaders are the academic supervisors and as such play a pivotal role in the success of the program. They are responsible for selecting and developing the study material to meet the diverse learning abilities, needs and styles of the students (the mentees). Students are encouraged to seek information, advice and to form study networks to further support their learning. The intention is to build confidence in the students and to enable them to develop their learning skills and to gain a deeper understanding of the particular discipline. In effect, to provide them with skills and encourage the development of networks that will enable them to become independent learners. The academic leaders also provide the guidance and expertise required to support the student mentors.

Academic SPAM Leaders are responsible for administrative activities, such as selecting and training mentors, booking rooms, producing evaluation surveys, and monitoring the selection and provision of appropriate learning strategies. They are provided with induction training and a manual that contains various proforma documents and instructional material to assist them in their role.

Student mentors are selected on the basis of their proficiency in a number of areas. Primarily they have to be able to demonstrate knowledge of the course content or a particular aspect as well as the capability of communicating problem solving techniques. In order to facilitate the learning by the students that they are mentoring they need to demonstrate or acquire the following desirable attributes.

Desirable Attributes of Mentors:
- commitment to the mentoring process
- a good academic record
- strong interpersonal skills
- competence in appropriate accounting/computing knowledge
- an ability to share knowledge and expertise
- patience and respect for the learning needs of others
- a willingness to assist in the development of another person’s growth
- membership of the mentor network team
- good communication skills.

The student mentors benefit in a number of ways from their participation in the SPAM program. Firstly, their own learning improves from having to structure and provide explanations and problem solving techniques. Secondly, they develop a number of skills such as communication, leadership, and dealing with team dynamics. Mentors are provided with basic induction training and a reference manual to assist them. They are also required to attend lectures and mentoring sessions to gain insight into the techniques employed by others.
Student mentors are responsible for conducting mentoring sessions and this encompasses implementing appropriate learning strategies the selection of which may be at their own discretion but within a range discussed with the Academic SPAM Leader. Their role is to facilitate individual students by identifying appropriate new learning strategies to solve problems.

There are three key elements that underpin the SPAM program as it now exists: a focus on providing students with directed peer support; encouraging all students to attend SPAM sessions (when they have a problem with understanding a topic) and to form study network groups (to establish a support network for continued self-help study in any course); a reward scheme in recognition of participation by Student Mentors – a number of rewards schemes have been trialled from the provision of textbooks, cash rewards, letters of commendation and more recently T-shirts in combination with designated levels of proficiency.

There are four key principles, which have been instrumental in determining the success of the mentoring program:

• commitment - especially on the part of student mentors as their efforts can be a valuable assistance for the academic leaders who’s time commitments can be constrained by the need to organise and monitor the program.

• clarity of purpose - the desired outcomes need to be identified, so that learning targets can be established and achievements can be monitored. For the identification and allocation of resources in effect, availability and readiness for the implementation of the program.

• communication - information concerning what is required and what is involved on the part of mentors and mentees is important so that everyone in the program knows what to expect.

• confidentiality - to protect the mentor-mentee relationship.

Learning goals
To ensure that there is some structure to the mentor program it is important that goals are established. The learning goals are identified by way of a questionnaire administered at the start of the SPAM session and are intended to identify the specific needs of a particular student prior to their commencing the SPAM program. Goals are established in order to provide:

• direction - goals guide where learning is heading and provide a clear picture of what the student wants to achieve;

• motivation - goals provide both student and mentor with something to aim for;

• reinforcement - goal accomplishment develops feelings of success.

Evaluation and Feedback
To ensure that the mentor program is functioning correctly in order that students may achieve their desired learning outcomes, which links to the requirement for establishing the learning goals, it is important to provide the opportunity for feedback and evaluation. The feedback and evaluation process is not restricted to flowing in just a one direction. For this reason the feedback and evaluation process has a central role in the model and thus whilst it may be consistent with the notion of a feedback loop it is considered to be central in the model.
A variety of survey instruments are used to evaluate the performance of the SPAM program over the Semester and these are part of the suggested instruction manual. Also included in the manual are suggestions for the assessment and evaluation processes that may be implemented by the Academic Leader or the Peer Mentors at different times during the program. In addition there are question instruments designed to assist in identifying the learning goals and gaining feedback from student mentees as the program progresses.

**Summary**

SPAM works on two distinct levels one for the student mentees and the other for the student mentors. The mentoring model works for the student mentees because the sessions are conducted in an informal setting and focus on the learning needs of the student mentees. The nature of the approach is proactive rather than reactive and is aimed at providing learning techniques to equip the student mentees with the ability to solve problems not just answer questions. Student mentees are encouraged to ask and discuss their learning needs and to develop good study techniques including the formation of study groups or networks even outside the SPAM program.

The model works for the student mentors by attracting them to become involved which it achieves by providing them with a formal recognition of their involvement. The mentors are provided with guidance and training for the development of pertinent skills and abilities.

Successful completion of the mentoring program may be measured in a number of ways. Firstly, for the student mentees success is translated into (a) achieving a passing grade (or better); (b) developing deep learning and problem solving skills; and (c) increasing levels of self-esteem and motivation. Secondly, for the student peer mentors success may be measured as (a) the formal recognition they gain from active participation in the program (formal recognition certificate); (b) development of deep learning skills; and (c) the desirable attributes such as, communication, leadership and interpersonal skills. Conceptually, SPAM is designed to increase student academic performance and indirectly have a positive effect on student retention through improved motivation.
References