### Research article

# Peer-Assisted Learning Programme: Supporting Students in High-Risk Subjects at the Mechanical Engineering Department at Walter Sisulu University

Qonda Makala\*

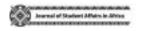
#### Abstract

The majority of the students who enroll at the Walter Sisulu University (WSU) in South Africa are not equipped with the necessary academic/learning skills to cope with the university environment, especially in Mechanical Engineering. The Department of Higher Education and Training (2013, p. 17), further states that "students' support is crucial to ensure that students adapt to the demands of college life and that they can meet the demands of college programmes". Particularly in South Africa, the school environment might also contribute to poor student performance as a result of insufficient student support, and a lack of facilities and resources.

In order to address this gap, a Peer-Assisted Learning (PAL) programme was implemented to provide support targeting high-risk subjects for at-risk students in Mechanical Engineering at WSU. The programme therefore is pro-active and student-driven in that senior students assist junior students with their academic work and learning processes. The programme is designed to encourage collaborative and cooperative learning approaches during group sessions and active student engagement to support student learning (Laal & Laal, 2012). The programme requires substantial resources and time commitments. It is important from an operational, learning, and student perspective to understand in what ways the PAL programme assists students (if at all). Eliciting the experiences of students also helps the department to design interventions from a student-centred perspective using the lens of learning theories.

This qualitative case study explores the student experience of the Peer-Assisted Learning (PAL) programme. Open-ended questionnaires/survey from 20 first-year students elicited their perceptions and experiences of the PAL programme. Responses were analysed thematically. Findings indicated that the students had useful insights that may contribute to revising the programme. Aspects mentioned were improved study skills, improved time management, and improved communication, problem-solving and presentation skills. The study suggests that the PAL programme also creates a safe (where students of the same age come together to discuss concepts of the subject under the guidance of the senior student as an experienced student), comfortable and conducive environment for first-year students' learning. However, the gender dynamics within the programme point to revisions needed in the programme to address the gap on the gender balance as only six out of the twenty participants in this study were female.

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The study contributes to our understanding of aspects of PAL for first-year Mechanical Engineering students at WSU, as it affords students the opportunity to interpret, integrate and apply information/knowledge acquired during lectures and to interact effectively in small-group sessions.

## Keywords

peer-assisted learning; peer-assisted learning leaders; at-risk students; mechanical engineering; university of technology

#### Introduction

Arising from the transformation of higher education (HE) in South Africa and the diverse groups of students enrolling at Walter Sisulu University (WSU), the institution had to find and adopt diverse means to accommodate first-year Mechanical Engineering students, particularly those from educationally disadvantaged groups. According to Horsthemke (2009, p. 3), "there has been a strong drive towards democratising education at all levels: primary, secondary and tertiary, following the first democratic election in South Africa in 1994". After 1994, the education system should have been revised in democratising education for all students in all levels as noted above, to ensure that student learning programmes accommodated underprepared students for HE. Seven years later Horsthemke (2009) points out that the strong drive towards democratising education is still ongoing in the universities. Many first-year students are under-prepared for HE and thus innovative learning and peer-to-peer intervention strategies are needed for these students to succeed (Brownlee, Walker, Lennox, Exley & Pearce, 2009; Jamelske 2009; Kuh, 2001; Morosanu, Handley & O'Donovan, 2010; Pike & Kuh, 2005; Schrader & Brown, 2008, cited by Ginty & Harding, 2014). It is important that institutions note the issue of underpreparedness of first-generation students. In institutions where many first-year students are under-prepared, intervention measures are needed, and student academic support such as PAL programmes have been found to promote success in Australia (Devine & Jolly, 2011, p. 219). The extent to which our PAL programme meets students' needs is yet unknown.

The focus at WSU is on learning policies and programmes which enhance learning, based on a philosophy that all learners can learn (Eiselen & Geyser, 2003). It is important to note that all students can engage in increased learning when learning systems are in place. Learning is enhanced when learners have supportive learning programmes, feel a sense of ownership, have control over their learning processes, and are able to learn from each other in a safe and trusting learning environment (Glynn, MacFarlane, Kelly, Cantillon & Murphy 2006). In light of this, the Mechanical Engineering Department at WSU has identified first-year high-risk courses with low pass rates every semester/year. For high-risk courses, the Centre for Learning and Teaching Development (CLTD) unit has introduced a PAL programme to foster cross-year support between students on the same course. The PAL programme, based on work done by Capstick and Fleming (2004) encourages students to support each other and to learn cooperatively under the guidance of trained senior students, called PAL leaders (PALLs).

# Context of the PAL Programme at WSU

As the former PAL coordinator and the observer of the research presented here, the context of the programme at WSU and some of the structural hurdles that have been reported in the PAL departmental contact persons' meetings, which were usually hosted three to four times a year, will now be discussed. The aim was for the departments (chosen lecturer/s as PAL departmental contact person/s) to report on how they perceived the underprepared student problem.<sup>1</sup> If one subject or course was identified as "high risk", its students were enrolled for a PAL intervention. A high-risk subject/course was identified when, over a three-year period, that subject had an average pass rate below the institutional and departmental percentage (Centre for Learning and Teaching Development, 2010, p.i). In light of this, all the students in that particular course are then regarded as at-risk and the PAL programme is then compulsory for these students.

Some of the difficulties of running the programme extend to staff and management and are mentioned below to situate the context of the study.

## Researcher Observations during PAL Operation

Lecturers themselves feel threatened when their subjects are identified for PAL intervention. They sometimes oppose their second year students' (PALLs) involvement in assisting, facilitating learning and mentoring on the course. Heads of departments (HODs) do not understand why there is a need for PAL interventions even if they see that performance in some subjects is not satisfactory. Some lecturers are not keen on helping their PAL leaders with the information (learning materials) required for the programme before the PAL leader conducts the PAL session. In these instances, HODs have to insist that their staff members cooperate in the programme; however some HODs instead "protect" their staff members from giving time to the programme. This is in spite of the WSU PAL procedure manual that subject lecturers should support their PAL leaders as it is part of their role as subject lecturers. This suggests that more departmental awareness of the PAL programme is imperative.

In the following section I discuss the meanings of "at-risk students"; explore reports of various peer-assisted learning programmes; and show how three learning theories inform the PAL programme at WSU.

#### Literature Review

#### At-risk students in higher education institutions

Although PAL is meant for high-risk subjects/courses at WSU, it is noticeable that all firstyear students are at-risk because of these high-risk subjects and, of course, at-risk students need to be considered for the PAL programme to retain them in higher education as part of the retention strategy of the university. At WSU at-risk students are not stigmatised by identifying them specifically, as they are told that all students with high-risk subjects should attend PAL programme sessions.

<sup>&</sup>lt;sup>1</sup> A number of these issues are also mentioned in the data collected in this case study.

According to Southwest Educational Development Laboratory (SEDL) (2001, cited by Eiselen & Geyser, 2003, p. 118), at-risk students are described as those who, "because of limited English proficiency, poverty, race, geographic location, or economic disadvantage, face a greater risk of low educational achievement". Students are more likely to drop out during the first two years of study, with the highest percentage dropping out during the first year. McGrath and Braunstein (1997, cited by Eiselen & Geyser, 2003) note that attrition during the first year of study remains a problem despite extensive research having been conducted and intervention programmes implemented.

Students who are disadvantaged educationally, socially and financially are at greater risk of failure and withdrawal. Institutions of HE have a responsibility to provide the necessary learning environment for the engagement of all students including those deemed "at-risk" (Coates, 2005, cited by Pearson & Naug, 2013). Pearson and Naug (2013) further declare that these students are in need of extra assistance and guidance to succeed in HE. According to Bitzer (2005, p. 172), "for many years in South African higher education it was believed that only those who 'fit' higher education would eventually be successful". "At-risk" students are more likely to blame outside sources (circumstances, people or things), for example, parental interference in choice of study direction, as reasons why they and other students like them are unsuccessful. These students, therefore, need special attention, and higher education institutions should accommodate "at-risk" students (Pearson & Naug, 2013). Findings of this study will assist in identifying aspects of the programme that are effective and those that require attention as PAL is seen as one of the potentially important intervention strategies for student academic support at the tertiary level (Van der Meer & Scott, 2009; Kieran & O'Neill, 2009; Allen & Court, 2009; Cheng & Walters, 2009; Couchman, 2009, in Devine & Jolly, 2011).

#### Intervention: Peer-Assisted Learning programme

According to Topping and Ehly (1998, p. 1, cited by Wadoodi & Crosby, 2002, p. 241), PAL is defined as "the acquisition of knowledge and skill through active help and support among status equals or matched companions". PAL essentially is about peer learning and individual development. Glynn, MacFarlane, Kelly, Cantillon and Murphy (2006, p. 2) claim that "pairing junior and senior undergraduate students provides psychological support and aids professional and personal development". This enhances knowledge and skills of individuals during PAL sessions. Capstick, Fleming and Hurne (2004, p. 3) from Bournemouth University (U.K.) "confirm that PAL sessions are intended to offer a safe, friendly place to help students adjust to university life faster, improve their study habits, acquire a clear view of course direction and clear expectations, and enhance their understandings of the subject matter of their course through group discussion and interaction". Capstick et al. (2004) posit that PAL may be defined as a scheme for learning support and enhancement that enables students to work cooperatively under the guidance of senior students in their second year.

The environment in the WSU PAL sessions looks conducive for all students in the programme as Capstick et al. (2004) describe above. Most usually, second-year students, called peer-assisted learning leaders (PALLs), facilitate weekly study support sessions for groups of first-year students after undergoing training. Dymoke and Harrison (2008, p. 11) concretise the idea of PAL sessions when they assert: "Much informal learning takes place outside the formal educational setting". In most of these studies the notion of learning is used generically; in this study learning is explored through a combination of learning theories.

PAL is conducted in an informal education setting which is linked to the understanding that PAL sessions consist of active, collaborative and cooperative learning. An additional advantage of PAL is alluded to by Speirs (2013), that during PAL many senior students exchange learning habits and strategies while working with junior students. In the next section, I synthesise the key features across three relevant learning theories in relation to the PAL programme.

## Theories and relations guiding Peer-Assisted Learning (PAL)

Figure 1 illustrates how the PAL programme design draws on three compatible learning theories for the benefit of integrated learning. Active, collaborative and cooperative learning are discussed further below.

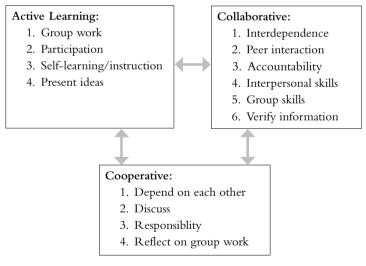


Figure 1: Learning theories

#### Active learning

In PAL, students are engaged in active learning. Active learning is defined as any instructional method that engages students in the learning process (Pinheiro & Simoes, 2012). According to Gunga and Ricketts (2007, cited by Ceza, 2012), students construct

their knowledge and solve problems as they view topics from multiple perspectives. Learners become autonomous managers of their learning and in the process even work out questions for which they will seek answers from other sources and the internet.

Pundak, Herscovitz, Shacham, and Wiser-Biton (2009) mention *domains* of active learning perceptions that should be addressed by teacher training developers. These are;

- (i) investigate various ways to activate students in a large class, particularly by means of group work;
- (ii) encourage student participation in classes in order to ensure that they understand the study material and are successful in the course;
- (iii) give students the opportunity to learn by themselves topics from the syllabus, following proper guidelines given by the instructor; and
- (iv) involve students in assignments that encourage them to present ideas, new critical arguments and ideas by themselves.

These recommendations were used in the design of the PAL programme.

#### Collaborative learning (CL)

The second box in Figure 1, Collaborative Learning (CL), links very well with active learning and is the second key pedagogical aspect of the programme.

In PAL, the intention is for students to "collaborate to supply missing information or attempt solutions to problems as they help each other and thinking skills and knowledge and understanding of course subject matter may develop within the cooperative environment of the PAL session" (Congos & Schoeps, 1998, p. 5, cited by Capstick & Fleming, 2004, pp. 2–3). In this regard, CL is an educational approach that involves groups of learners working together to solve a problem, complete a task, or create a product (Laal & Laal, 2011). Laal and Laal (2011) further assert that CL occurs when small groups of students help each other to learn. In our programme these groups consisted of senior students and junior students, where they discuss the subject matter after the lecture outside of lecture time.

Arendale (2016) supports these opinions, stating that CL refers to a wide range of formal and informal activities that include any form of peer-student interaction. CL adheres to these principles:

- (i) positive interdependence is established in the group through adoption of different roles that support the group moving to complete a goal;
- (ii) peers interact with one another;
- (iii) activities are structured to establish individual accountability and personal responsibility;
- (iv) development of interpersonal and small-group skills; and
- (v) group processing of small-group activities through verification of verify information accuracy (Cuseo, 2002; Johnson, Johnson, Holubec & Roy, 1984, cited by Arendale, 2016, p. 4).

## Cooperative learning

The third approach guiding the programme is cooperative learning, where students work together as a group to achieve the same learning goal, such as mastering and assimilating the same learning content.

Donelan (1999, cited by Capstick & Fleming, 2004) presents some research evidence to suggest that PAL is able to effect positive outcomes through the consolidation of knowledge through participation; cooperative, informal learning through discussion; and enabling social integration of students.

Lundeberg and Moch (1995, cited by Capstick & Fleming, 2004) also suggest that the personal, cooperative approach of PAL influences the cognition of students in positive ways, including enhancing the ability to apply abstract ideas. According to Johnson and Johnson (1989, cited by Chapstick & Fleming, 2004), cooperative learning consistently produces higher achievement than either competitive or individual effort.

Johnson and Johnson (1994, cited by Killen, 2010, p. 215) mention five basic elements that need to be present in small-group work to be considered cooperative, namely:

- (i) students must depend on one another by working together to achieve a specific goal, which means interdependence (as per Figure 1);
- (ii) there must be continuous, direct interactions where students have discussions and exchange ideas\_on tasks. They are aware that each member of the group is responsible and that they will only be successful if their partners are successful: this leads to accountability towards each other (see Figure 1);
- (iii) each member of the group is responsible for a part of the learning and accountable for the success of each member of the group, and is thus responsible for their learning;
- (iv) every member of the group must apply interpersonal skills such as listening to other members, asking questions to eliminate uncertainties, discussing, negotiating and constructively solving problems and differences: this means collaboration is fostered (see Figure 1); and
- (v) groups must reflect on the outcomes and how they function as a group, to digest information learnt and reflect on information and understanding of the subject.

It is interesting to note the common features of each of the three frameworks. Figure 1 has been organised to highlight these overlaps. For example in point 1:"Group work; Depend on each other; Interdependence" all point to a collegial rather than competitive/individual way of working.

# Background: PAL at Walter Sisulu University

PAL has been introduced at WSU as an academic intervention programme to contribute to the throughput rate of the university. Senior students called PAL leaders (PALLs) are tasked with helping first-year students with their academic work. The features of PAL include: the training of PAL leaders by the PAL coordinator in study techniques, group management and facilitation skills, as well as how to conduct the PAL sessions. Training runs for a period of two full days. PAL leaders are shown different ways to manage a PAL session. They are also expected to demostrate what they have learnt (skills) during the last hours of the second day of training. PAL departmental contact persons are involved in the training to introduce/share their departmental expectations. Sessions on customer care and pastoral care are included as they will deal with diverse groups of students.

During the training, we demonstrate how PAL sessions should be conducted: ideally, the group session must be made up of at least 45–50 students per PAL leader. This is as per the general PAL procedure manual of the university. For Mechanical Engineering, only 40 students registered and 20 participated as per this study, with the following gender ratio: 14 (70%) males and 6 (30%) females (see Table 2). Sessions consist of students meeting with the PALLs for two hours each day throughout the week, as per the WSU student employment policy, which states that undergraduate student assistants should only work 10 hours per week (CLTD, 2008, p. 8).

#### PAL leader/lecturer relationship

PAL leaders and lecturers meet for one hour every week for PAL session preparation, which is essential as PAL leaders are also students and not subject specialists or experts. Lecturers have to equip them with their learning materials and topics to cover during PAL sessions. The material/topics should have been covered first by the lecturer during his/her lecture; the PAL leader addresses the gaps in understanding which students might have.

The lecturer and PAL leader provide weekly feedback to each other regarding student cooperation in the session, performance during the lecture and performance on the task/tests and assignment writing. The lecturer is expected to encourage the PAL leader and reflect on his/her performance/conduct when required by the PAL office.

*PAL leaders' role at WSU:* To facilitate two-hour daily of PAL sessions; circulate attendance register per session; report to PAL coordinator weekly/monthly; and meet with the subject lecturer one hour per week (Centre for Learning and Teaching Development, PAL procedure manual 2010).

*Intended benefits of the PAL to students:* Access to more student academic support; help on assignment writing; and study skills techniques.

Benefits of PAL to PAL leaders: PAL leaders are paid an hourly rate for 40 hours of work done per month; get opportunities to meet and converse with the subject lecturer; are recognised by the entire department based on their performances and are often employed as junior lecturers within the institution. They sometimes deviate from their intended field/discipline and move into the academic field because of their experience as PAL leaders.

*PAL session attendance:* PAL sessions are compulsory; all students taking high-risk modules are expected to attend PAL sessions; and the coordinator observes the PAL sessions daily.

*PAL coordinator's role:* To supervise the PAL sessions daily; oversee PAL programme activities including administrative work; update the PAL manual and procedure manual yearly; and evaluate the PAL programme's progress quarterly/annually.

WSU models its PAL programme on the Peer-Led Team Learning (PLTL) process developed at the City University of New York (CUNY) (Arendale, 2016, pp. 9-10) with a few differences elaborated on below. WSU also conducts weekly PAL sessions, two hours per day, where PAL leaders meet with their PAL students for PAL sessions.

#### Guiding principles for PLTL at City University of New York include the following:

- (i) The programme is integral to the course, and two hours of workshop time is required weekly. At WSU two hours of session time per day (Centre for Learning and Teaching Development, student employment policy, 2008:8);
- (ii) Peer leaders are trained in group leadership and course content; activities and materials are challenging yet accessible. In addition, at WSU, PLLs are trained in study skills, customer service (taking care of assisted peers during and after sessions) and leadership;
- (iii) Academic staff members are deeply involved in the programme. At WSU, the academic participant is called the PAL contact person or liaising person and lecturer (Centre for Learning and Teaching Development, 2010:3);
- (iv) Physical space and environments are conducive to discussion and learning. At WSU, space (venue) is a problem; and
- (v) The programme has strong support from the institution (Arendale, 2016:39). At WSU we are still in the process of getting buy-in from some resistant faculties, although the majority of faculties do support the programme.

#### Methods

This paper is part of a larger study. For this aspect, a qualitative research methodology was applied. The following research questions were investigated:

- 1. What constitutes an effective PAL programme for Mechanical Engineering students?
- 2. What are first-year Mechanical Engineering students' perceptions regarding the existing PAL programme?

The researcher administered a qualitative survey to 20 of the 40 first-year students (PAL students) in the Mechanical Engineering Department.

Purposeful sampling was used because I wanted to use participants who were deeply involved in the PAL programme. I assumed that these participants would provide rich information about students' perceptions. Students chosen were those who most frequently attended PAL sessions. As much as the PAL programme is compulsory, the gender of participants was not intentional, as the sample was drawn on the basis of participants who had participated in the PAL programme. However, as engaged students, they were able to provide useful insights into the PAL which will inform future interventions. It must be acknowledged that more negative perceptions, or different perceptions could have emerged from those who did not attend many sessions. This may be an important aspect for further investigation.

Data collected from the questionnaires were analysed and themes identified. Openended questionnaires were used to collect data from first-year students in order to elicit their perceptions and experiences of the programme. These questionnaires were administered in a lecture venue as distributed hard copies, and the researcher was present to guide the process. The questionnaires consisted of 22 questions.

## **Findings**

The survey was administered to 20 first-year students in the PAL programme. Their biographical data were collected in order to establish the demographic profile of the participants, such as their age, gender and level of study, as part of section A in the questionnaire. The demographic background of the participants is provided in Tables 1 and 2 below.

Table 1: Age of the students in the PAL programme (n = 20)

Age	16-18	19-22	23-25	Total
PAL students	2 (10%)	17 (85%)	1 (5%)	20 (100%)

Seventeen (85%) of the respondents were between the ages of 19-22 years, two respondents (10%) between the ages of 16-18 and one respondent (5%) was in the 23-25 age group. This indicates that the majority of the participants were between 19 and 22 years of age for the first-year students.

The gender/sex of the respondents in the PAL programme is shown in Table 2.

Table 2: Gender of the students in the PAL programme

Gender	Males	Females	Total
PAL students	14 (70%)	6 (30%)	20 (100%)

Table 2 indicates that 14 participants (70%) were male and 6 participants (30%) were female. Yet in the whole class the student gender consisted of  $\pm 25$  males and  $\pm 15$  females, which is probably related to the perception that females do not take engineering courses in numbers and continue to be under-represented in the engineering profession (Kaspura, 2012). All the PALLs were male. When advertisements were placed for female PALLs to apply, no female students applied to become PALLs. This gender bias requires further investigation and remediation.

In the course of analysis, the following themes pertaining to programme effectiveness emerged. These themes were also covered in the literature review.

#### Identified themes:

- (a) Safe and friendly space
- (b) Adjust to unversity life
- (c) Study habits
- (d) Venues problematic
- (e) Institutional support needed

Figure 2: Themes on programme effectiveness

The themes identified are understood as follows:

#### (a) Safe and friendly space arises as illustrated in these participants' responses:

"I feel safe and comfortable during PAL sessions because our PAL leaders treat us like brothers and sisters."

"Even if you have questions about their methods, they only shed light and do not take it personal like some lecturers I know."

"This PAL session is like you are with your family where you feel safe and free and my mind is peaceful when in PAL sessions."

"I feel safe because during PAL sessions we are all students."

"Even if you have questions about their methods, they only shed light and do not take it personal like some lecturers I know."

These responses suggest that the environment during PAL sessions is safe, friendly and comfortable for them to learn, as compared to that of their lecture/class time.

#### (b) Adjusting to university life:

Eighteen of the 20 respondents agreed that PAL had played a big role in their adjusting quicker to university life.

"If it was not for PAL I would not be doing S2 by now."

"When it comes to academic records of any individual of this university the help was a lot."

"They did the most important thing to me."

The adjustment to university life would contribute to first-year students adjusting academically in the university.

#### (c) Study habits:

"My study skills have improved ever since I attended PAL sessions and before I was just studying as a high school leaner, but now I got skills."

(This is confirmed by Keenan (2014: 3), as one of the aims of PAL viz. "to develop independent learning and study skills to meet the requirements of higher education".)

"PAL helped me to practise before I write the test."

"They make the assignment easier for us."

"They taught me of preparedness for test."

#### (d) Venues problematic:

Lack of venues was a serious problem for these students. As indicated, lack of venues may have caused them to miss some PAL sessions because it was difficult to get venues. There was a feeling that if the PAL sessions could have specific venues allocated for them, it would mean more regular attendance of the PAL programme. Timetabling of PAL sessions was also a problem as it was not possible to timetable the sessions when venues were limited. Lack of venues may have contributed to the poor timetabling of PAL sessions.

"I think they should draft timetable so that we all [are] aware about our PAL sessions."

"There's a lack of venues."

#### (e) Institutional support needed:

"I think they should draft timetable so that we all [are] aware about our PAL sessions."

More issues were highlighted that are detrimental to the PAL sessions such as the lack of venues, poor time management by PAL students, and PAL sessions not being timetabled; these issues were highlighted as aspects least liked of the PAL programme.

#### Discussion

The aim of the research was to establish how students experienced the PAL programme by analysing a sample of students' perceptions. Their perceptions contribute to understanding features of an effective programme. Hence the second research question states: "What are first-year Mechanical Engineering students' perceptions regarding the existing PAL programme?" The perceptions of the students who attended the PAL programme were obtained by means of several questions asked about the skills they gained, how they benefited from attending the PAL programme, their opinions about the PAL leaders, and what they liked most and least about PAL.

The results indicated that PAL students benefited from the PAL programme, that it helped them with course direction and expectations, and that it also helped them with their assignments and tests. Improved performance in the assignments and tests further helped them to pass almost all their subjects. The general sentiment is that the first-year students involved are satisfied with the PAL programme in their department. Learning skills gained by the PAL students were indicated as improved study skills and problem-solving skills, the ability to cope with assignments, tests and the course as a subject/module, improved self-esteem and confidence gained by first-year students. PAL students indicated improvement in their understanding of the subject matter and improved academic performance from attending PAL sessions. They also gained confidence on how to ask and answer questions during PAL, which they did not have during lectures. The purpose of learning became clearer. They also learnt the importance of managing time for their studies.

#### Conclusion

The data suggests that PAL benefited the students. However, issues were also identified such as lack of allocated venues and the need for timetabling specific slots for PAL sessions. Nevertheless, PAL has helped at-risk students academically and socially, as respondents indicated that they had managed to pass tests and complete assignments, and that they adjusted more easily to university life. They claimed that their study habits improved, as some managed to proceed to the next level because of the assistance in PAL sessions.

The PAL sessions were viewed as safe, friendly, comfortable and informal and at-risk students received sufficient help from PAL leaders. It seems that the deliberately designed structure using Active, Collaborative, and Cooperative learning is a beneficial pedagogical approach for such PAL support programmes. Glynn, MacFarlane, Kelly, Cantillon and Murphy (2006, p. 2) claim that "pairing junior and senior undergraduate students provides psychological support and aids professional and personal development". Eiselen and Geyser (2003) further declare that at-risk/first-year students feel more insecure, and that they

have a greater need for personal attention, assistance and guidance than other students. The results of this study seem to confirm these findings for our group of underprepared South African students.

# Limitations in the Study

It was noticed that some students did not attend the PAL sessions regularly. Therefore, acknowledgement of more negative perceptions, or different perceptions could have emerged from those who did not attend many sessions. This may be an important aspect for further investigation. In addition, when advertisements were placed for female PALLs to apply, no female students applied to become PALLs. This gender bias requires further investigation and remediation.

## Recommendations Suggested to Address the Concerns

- Sufficient venues for PAL sessions must be allocated by the university;
- An academic staff member must coordinate PAL session activities in the department;
- A timetable for PAL sessions should be drafted without delay when venues have been secured: and
- Subject lecturers to take note of the imperative to be approachable to their students

While these recommendations may not seem far-reaching, they do point to the need for structure and institutional support for such programmes. The beneficial aspects of relationship, collegiality and peer mentoring are confirmed.

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