

2005

# An investigation into the experience of first year Systemic Anatomy students attending Peer Assisted Study Sessions (PASS) at the University of Wollongong

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**An investigation into the experiences of first year  
Systemic Anatomy students attending  
Peer Assisted Study Sessions (PASS)  
at the University of Wollongong**

By

**Leah Mentz**

A thesis submitted in partial fulfilment of the requirements  
for the award of the degree

**Bachelor of Education  
(Physical and Health Education)  
Honours**

From the

**University of Wollongong**

**Faculty of Education  
2005**

# **Thesis Certification**

I, Leah Mentz, declare that this thesis, submitted in partial fulfilment of the requirements for the award of Bachelor of Education (Physical and Health Education – Honours), University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for a degree to any other university or institution.

Leah Mentz

7 October 2005

# ACKNOWLEDGEMENTS

I would like to acknowledge the following individuals for their valuable contribution to this project. Without their contribution, this thesis would not have been possible:

- Dr Pauline Lysaght, my Principal Supervisor. Thank you for the countless hours you devoted to working on the project with me. I am very grateful for the encouragement, support, advice and guidance you have provided throughout the duration of this project.
- Mr Doug Hearne, my Secondary Supervisor. Thank you for the hours you spent working with me. Your level-headed approach enabled me to keep on track, even under times of stress.
- Ms Sally Rogan, the PASS Program Manager at the University of Wollongong. Thank you for your ongoing encouragement and support. I am especially grateful to you for allowing me to use the PASS office space and its facilities.
- Phill Dawson, the PASS Program Administrator. Thank you for providing assistance when it was needed.
- Mr Darryl McAndrew, the subject coordinator for Systemic Anatomy, for his support of the project
- David Burns and Ben Wilson, the Anatomy Laboratory managers who gave me access to the Anatomy Laboratory classes so that I could conduct my questionnaires.
- The PASS leaders who let me sit in and observe their PASS sessions.
- My family – Mum, Dad and Esther, who have encouraged me with their love and support throughout my life.
- My partner Balin, who has stood by me during the four years of my university studies. Thank you for your patience, love and belief in my ability to do this.
- My good friends Phuong and Heidi for their support and encouragement during this project and during our times together at UOW.
- Last but not least, the students who took part in this study, whose willingness to participate and provide insights and opinions made this study possible.

# ABSTRACT

**Title of thesis:** “An investigation into the experiences of first year Systemic Anatomy students attending Peer Assisted Study Sessions (PASS) at the University of Wollongong”

**Supervisors:** Dr Pauline Lysaght and Mr Doug Hearne

The purpose of this study was to explore the experiences of first year Systemic Anatomy students taking part in the Peer Assisted Study Sessions (PASS) at the University of Wollongong. The aim was to develop an understanding of why students choose to attend PASS, their expectations of the PASS program and the degree to which these expectations were met.

PASS was introduced to the University of Wollongong by Student Services in 2001 and is now offered for a number of high-risk subjects. In these subjects there are typically high failure rates, with over twenty-five percent of students receiving a Fail or Pass Conceded grade. PASS is offered to all students enrolled in a subject, however as the program is voluntary, not all students will take up the opportunity to attend. This study focussed on students attending PASS for Systemic Anatomy.

This study was completed using a case study approach. Data were collected using pre-questionnaires, post-questionnaires, observations and focus group interviews in order to gain a deeper understanding of the expectations and experiences of students attending PASS for Systemic Anatomy. Fifty-one first

year Systemic Anatomy students participated in the study, with nine of those students taking part in the focus group interviews. A statistical analysis of the data indicated that a positive relationship existed between final subject grades and the number of PASS sessions attended.

The findings indicate that students attend PASS for a variety of reasons. The most significant of these involved opportunities to develop greater understanding of the subject matter and to gain knowledge of, and practice in effective methods for studying Systemic Anatomy. In relation to the expectations of the case study group, it was revealed that students had high academic, personal and social expectations of the PASS program. Overall, student expectations focussed on positive academic outcomes such as increased understanding of the subject matter and an awareness of effective techniques for studying Systemic Anatomy successfully. The results indicate that students had opportunities for a wide variety of experiences and most participants agreed that attending PASS assisted in their academic development.

A number of recommendations have been made by the researcher to assist students in overcoming barriers to attendance, to ensure students have more realistic expectations of the program and to improve the content and structure of PASS for Systemic Anatomy at UOW. Recommendations for future research into PASS have also been made.

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# **Chapter One**

## **INTRODUCTION**

### **1.1 BACKGROUND TO THE STUDY**

A large number of students begin tertiary studies directly from high school and are challenged by the shift away from a structured learning environment to one of large classes with limited opportunities for student-teacher interactions (Playford, Miller & Kelly, 1999). In terms of this new academic environment, students are also confronted with different methods of grading and knowledge acquisition, changing support networks, stress due to academic pressure, along with greater responsibility for personal decision making (Martin & Arendale, 1992). In addition, an increased proportion of students are taking on part-time work when enrolled in full-time study, creating additional pressures when dealing with the new academic environment (McInnis, James & Hartley, 2000).

Adjusting to the university's demands for learning is challenging for many students coming from high school and can lead to dissatisfaction among those who find it difficult to follow lecture notes, read complicated text books and manage the work load (Department of Education, Training and Youth Affairs (DETYA), 1999). School leavers beginning tertiary studies are also less likely to seek advice or assistance from academic staff when experiencing difficulties with their subjects compared to other first-year students (DETYA, 1999). Mature age students, for example, are also affected when commencing formal studies after a period of time involving travel, work or starting a family. However, they are more likely than school leavers to search out avenues of

assistance, to work consistently towards their goals and to clarify course direction (DETYA, 1999).

Programs of study for first year students are mainly comprised of introductory subjects that lay the foundations for their degree program. At the University of Wollongong (UOW), students enrolled in the Bachelor of Education (Physical and Health Education) degree, through the Faculty of Education and programs offered by the Faculty of Health and Behavioural Sciences must complete Systemic Anatomy in their first semester at university. The placement of this difficult foundation subject in the first year of many courses places a considerable demand on students already burdened with other challenges inherent in the transition to tertiary education.

The literature describes difficult foundation subjects such as Systemic Anatomy as 'high-risk' because, year after year, a consistent number of students receive low grades (Fail, Pass Conceded or Pass Restricted) (Martin & Arendale, 1992). Students are required to repeat these subjects in the following year or, alternatively, they may drop out of their courses and leave the institution. These high failure and possible attrition rates provide a challenge for academics whose focus is to support students and reduce the potential for failure. As a result, various types of assistance and support programs are offered to students.

One such assistance program is Supplemental Instruction (SI), a program originally initiated by Deanna Martin at the University of Missouri Kansas City (UMKC) in 1974 (Martin & Arendale, 1992). The aim of the SI program is to

help students in high-risk subjects through the provision of regular “out-of-class, peer-facilitated sessions” (Martin & Arendale, 1992, p.3) that focus on reviewing course content and combine this with complementary study skills. The development of SI came about through a pilot program that was originally offered to students enrolled in high-risk courses at graduate or professional schools at UMKC. Students possessed strong academic backgrounds on entering these courses, however, the “academic rigour [of the courses] exceeded the academic preparation” of the students attending them (Martin & Arendale, 1992, p.4). The SI program proved to be successful in supporting the learning needs of students and was then extended to undergraduate courses within UMKC.

In 1981, SI was officially recognised by the US Department of Education as an Exemplary Educational Program that contributed to increasing student graduation rates (Martin & Arendale, 1992). Due to its outstanding success, the program spread to other educational institutions around the world, including Australia.

In 2002, UOW Student Services launched the Peer Assisted Study Session program (PASS), based on SI (Rogan, 2004). The aims of this program are to:

- *decrease the failure rates of first and second year students in core subjects;*
- *improve retention rates of first and second year students;*
- *assist with the transition of students to University life; and*



- *enhance, recognise and promote the diversity of student learning styles.* (Rogan, 2004, p.1)

During PASS, students can discuss course material in a non-threatening environment, share any problems they are experiencing and explore study strategies. The weekly review sessions are provided for students at no charge and are lead by peer leaders who have successfully completed the subject and possess “excellent interpersonal skills” (Rogan, 2004, p.1).

The role of the PASS leader is to “act as a mentor to the students” (Dawson, Stephenson, Miller, Cutting & Serje, 2003, p.5). Their role is not to re-teach the subject material but to guide students through subject-specific activities during the sessions to foster learning (Rogan, 2004). In order to understand the purpose of PASS and to develop techniques to use in it, the leaders undergo training prior to their first session as peer leaders (Dawson et al., 2003). PASS leaders are not involved in assessing students for the subject and therefore are regarded by the students as peers rather than tutors (Rogan, 2004).

Due to the continuously high failure rate among students enrolled in Systemic Anatomy, Student Services identified this subject as high-risk in 2003. They went on to recruit PASS leaders for this subject and offered PASS to Systemic Anatomy students in 2004. PASS was successful in reducing the failure rate for the subject and, because of this success, the program continued into 2005. It is reported that PASS is successful at “targeting the identified needs of students and enhancing their learning” (Rogan, 2004, p.2) at UOW and ultimately works to address the problems faced by students entering tertiary institutions.

## 1.2 PURPOSE OF THE STUDY

The purpose of this study is to investigate the experiences of first year students enrolled in Systemic Anatomy who attend PASS at UOW. A survey of the literature has shown that, in general, assistance programs such as PASS improve student grades and, when students are made aware of this, it is potentially one of the key factors motivating students to enrol in the program (Congos & Schoeps 1998; Martin & Arendale; 1992; Price & Rust 1995). One of the aims of this study is to identify the reasons for first year Systemic Anatomy students choosing to attend PASS. This research is also designed to develop a deeper understanding of the expectations, experiences and outcomes for first year Systemic Anatomy students taking part in the PASS program.

One overarching research question is addressed in this study.

### *Main Research Question*

What are the experiences of first year Systemic Anatomy students undertaking the Peer Assisted Study Sessions program at the University of Wollongong?

This is supported by three sub-questions.

1. Why do first year Systemic Anatomy students choose to attend PASS?
2. What are the expectations of first year Systemic Anatomy students who attend PASS?

3. What are the academic, personal and social experiences of first year Systemic Anatomy students attending PASS at the University of Wollongong?

### **1.3 SIGNIFICANCE OF THE STUDY**

This study is significant because, at present, limited research has been undertaken with regard to the expectations and experiences (academic, personal and social) of students who attend PASS at UOW. The aims of the PASS program are central to its effectiveness and the information from this study will demonstrate the extent to which these aims are being met. Information gathered through this study will provide a valuable contribution to those who administer the PASS program as well as academics who teach in the subject to which it is attached.

Although PASS is offered for a number of subjects each semester at UOW, it is beyond the scope of this thesis to investigate the expectations and experiences of students attending PASS for every subject. Consequently, the researcher has chosen Systemic Anatomy as the focus of this study because of her experience as a student of Systemic Anatomy in 2002 and as a peer leader in the PASS program for this subject in 2004.

By accessing support services such as PASS, students can receive the assistance they may need to be successful in their course. This investigation into the expectations and experiences of students involved in PASS for Systemic Anatomy will provide valuable information about the manner in which the program is delivered to students in that subject.

## 1.4 LIMITATIONS

1. Since the questionnaire is voluntary, the number of participants will be limited to those who respond.
2. The study has as its focus only one subject for which PASS is offered at UOW. Generalising any results to other subjects is therefore not advisable.
3. As the researcher is a former student of Systemic Anatomy and was a PASS leader for that subject in 2004, certain biases resulting from her own experiences may be inadvertently brought to the research.

## 1.5 DEFINITION OF TERMS

Terms used in the context of this study are defined below:

*Community of learning:* an environment where the responsibility for learning is transferred to the students and intellectual risk taking can take place in a non-threatening, cooperative environment (adapted from Lundeborg & Moch, 1995).

*Expectation:* “something expected or looked forward to” (World Book Multimedia Encyclopedia, 2004).

*Experience:* “knowledge or skill gained by doing, observing, or living through things” (World Book Multimedia Encyclopedia, 2004).

*High-risk subject:* a difficult first year subject in which there is an historically high failure rate (Rogan, 2004). This term has the same meaning as 'high-risk course' that is used in literature from overseas.

*PASS:* Peer Assisted Study Session (Rogan, 2004).

*Peer:* "a person who is of equal standing" (Delbridge & Bernard, 1998, p.849).

*Systemic Anatomy:* A first year subject at the University of Wollongong with an introductory focus on human gross anatomy through the study of the major systems of the body (University of Wollongong, 2004).

## **1.6 OVERVIEW OF THE THESIS**

The remaining chapters of this thesis are arranged as follows:

### **Chapter Two – Review of Literature**

This chapter provides an overview of the research and literature regarding the development of PASS as a tool to support student learning and retention in tertiary education. This chapter has a particular focus on providing the reader with an understanding of the elements of peer assisted learning environments including theories and key concepts, the learning environment and how these types of programs work to support students in high-risk courses.

### **Chapter Three - Methods**

Chapter Three presents an outline of the design of this research, the methods used to gather information and to analyse the data. The use of questionnaires, focus group interviews and observations are discussed.

### **Chapter Four - Results**

This chapter documents the results from the questionnaires, focus group interviews and observations and is set out in accordance with the study research questions.

### **Chapter Five – Discussion and Recommendations**

Chapter Five provides a discussion of the results taking into account existing research and is a synthesis of the major themes that emerged from the data. This chapter also presents conclusions and recommendations for future studies in relation to PASS.

# **Chapter Two**

## **LITERATURE REVIEW**

### **2.1 INTRODUCTION**

Students enter tertiary institutions with various expectations about the learning environment and the experiences they will have in it. Unfortunately, many students, especially recent school leavers, are dissatisfied with their experiences of tertiary education (DETYA, 1999). Research conducted by McInnis and James (DETYA, 1999) explains that this dissatisfaction is a result of the high expectations students have of academic staff, the learning environment and the grades they will receive. Indeed, their results indicate that students who were dissatisfied had trouble adjusting to the university style of teaching, managing their workload and received lower marks than expected (DETYA, 1999). To resolve this problem of student dissatisfaction, it is believed that a number of strategies can be used within tertiary institutions to assist students in their transition to tertiary education and to enhance their academic performance. Peel (DETYA, 1999) argues that these strategies need to be implemented in the teaching and learning environments and by way of the institution's student support services.

One such program that undertakes this task is Supplemental Instruction (SI). SI is a peer-facilitated academic assistance program that aims to improve student performance by addressing the disparity that exists between student expectations and preparedness, level of instruction and expectations of academic staff (Martin & Arendale, 1992). SI specifically targets students enrolled in difficult subjects within their first year of study and aims to increase

student retention rates. Academic assistance programs similar to SI have been given various names such as Peer Assisted Learning (PAL) in the UK and Peer Assisted Study Sessions (PASS) in Australia (Capstick & Fleming, 2004; Rogan, 2004). The vast majority of research into the outcomes of these peer-facilitated learning environments has shown that students who attend these programs gain higher grades and remain at the institution, thereby reducing attrition rates (Martin & Arendale, 1992). Other research has indicated that students participating in these academic assistance programs are provided with opportunities to express their concerns in a non-threatening environment, meet other people from their courses and develop their confidence whilst enjoying the learning process (Lundeberg & Moch, 1995; Price & Rust, 1995; Loh, 1996).

## **2.2 BACKGROUND TO SUPPLEMENTAL INSTRUCTION**

Developed by Deanna C. Martin in 1974 at the University of Missouri-Kansas City, Supplemental Instruction (SI) was introduced as a way of helping students with academic difficulties in “high-risk courses” (Martin & Arendale, 1992, p.4). Blanc, DeBuhr & Martin (1983) define high-risk courses as “traditionally difficult, entry-level courses wherein student D and F rates and withdrawals exceed 30 percent of course registrants” (p.81). The grades defined as “D” and “F” by Blanc et al. (1983) may be regarded as equivalent to Pass Conceded (slightly below the Pass level) and Fail grades at UOW. Since its inception, the SI model has been used successfully in tertiary institutions across the United States and in other countries around the world such as Canada, the United Kingdom, Sweden, South Africa and Australia (Bryngfors & Bruzell-Nilsson, 1997; Capstick & Fleming, 2004; Martin & Arendale, 1992; Murray, 1999).



Bryngfors and Bruzell-Nilsson (1997) describe SI as weekly “out-of-class, peer-facilitated review sessions” (p.5). The sessions are different to tutorials in that they are more informal and give students an opportunity to explore the course material, receive feedback, and share study strategies (Arendale, 1998). The SI leader operates as a facilitator in these sessions, providing guidance and initiating the learning process.

SI leaders are students who have successfully completed a high-risk course and whose grades are demonstrative of their academic ability (Rogan, 2004). Their role is to model how successful students think as they process course material (Ogden, Thompson, Russell & Simons, 2003). By providing this guidance, less experienced students are given the opportunity to identify and adapt these strategies in order to develop their own level of knowledge and understanding (Congos & Schoeps, 1998).

SI leaders are required to undergo training prior to taking on the role. In doing so, the leaders gain a basic understanding of learning theories, appropriate teaching methods and study strategies, and potential problems that may arise during sessions (Martin & Arendale, 1992). During the semester, the SI supervisor will observe a session in order to provide feedback to the leader and give suggestions for improvement. This assists in maintaining the quality and appropriateness of the strategies used in the sessions.

Tinto (1993, cited in Arendale, 1998) states that the purpose of SI is: to reduce student failure rates in historically difficult courses; to reduce attrition rates in universities; and to assist in the integration of students into the academic and

social community. Martin and Arendale (1992) assert that there are five main features of SI programs that operate together to achieve these aims. The five features involve:

- Provision of a proactive service to students from the start of the course;
- Establishment of a link between course material and study skills;
- Attendance by SI leaders at classes;
- Voluntary attendance in non-remedial classes; and
- Encouragement of student interaction and support.

An elaboration of each of these features follows.

### **2.2.1 Provision of a proactive service to students from the start of the course**

SI is regarded as “proactive rather than reactive” (Martin & Arendale, 1992, p.5) because it targets high-risk courses rather than high-risk students. In other words, it is the course that is identified with a higher than usual risk of failure rather than the student. Students in these high-risk courses are targeted early in the semester, usually in the first week, and encouraged to attend the SI sessions. This is done so that students have access to assistance prior to encountering difficulty with the subject matter (Blanc et al. 1983). Therefore, rather than being offered study assistance as the result of failing an assessment task, students are provided with assistance with the aim of preventing failure.

This feature is outlined in a study conducted by Webster and Dee (1997) that evaluated an SI program for engineering students at Rensselaer Polytechnic Institute in the United States. The SI program was initiated to provide assistance to first year students and to promote problem solving specific to

engineering. The results of this study indicated that SI attendees received higher course grades than those who did not attend SI. In addition, results from a survey of students at the completion of the semester indicated that students were more likely to attend SI sessions when the course instructor “openly and frequently” (Webster & Dee, 1997, p.7) communicated support for the program. Having the course instructor emphasising the benefits of the SI program to the students from the start of the semester highlights the proactive nature of the program.

### **2.2.2 Establishment of a link between course material and study skills**

SI provides an environment where study skills can be linked to course material rather than being presented in isolation. Arendale (1998) describes this as a process of combining “‘what to learn’ with ‘how to learn’” (p5). Martin and Arendale (1992) report that students are often encouraged to attend study skills workshops where they are taught about study strategies. However, they argue that because these workshops do not provide a link between study skills and course content, students become frustrated or disinterested (Martin & Arendale, 1992).

The SI leader can use various methods during the SI sessions to link course content with study skills. Bridgham and Scarborough (1992) recommend several strategies that work to encourage student participation and learning. These strategies include: question and answer periods, construction of discipline-relevant questions by students, discipline-relevant vocabulary exercises, and analytical problem solving in pairs or small groups. Through participation in these cognitive processing strategies, students work to analyse

and integrate the course material and create associations that they will understand or that will have meaning for them. To facilitate the process of learning that takes place in the SI session, it is essential that the SI leader does not re-teach the course material or lecture to the students. As Capstick and Fleming (2004) point out, incorrect or misleading information could be conveyed if SI leaders take on a teaching role, as they are not qualified or experienced as teachers. It is also possible that their credibility as peers would be questioned, a role that is seen as fundamentally important in the PASS program.

### **2.2.3 Attendance by SI leaders at classes**

SI leaders attend classes, usually held as lectures, so that they are better prepared during sessions. By attending lectures, the SI leader knows what has occurred in the class and is able to construct subsequent sessions with this in mind.

Congos and Schoeps (1998) believe that when SI leaders attend classes, students will more readily relate to the SI leader as a peer. A consequence of this connection means that during SI sessions, students feel safe, are willing to make mistakes, and develop concepts through exploratory talk (Price & Rust, 1995). This process may be enhanced further by the “patience and encouragement” of the leaders (Ogden et al., 2003, p.6).

### **2.2.4 Voluntary attendance in non-remedial classes**

SI is not promoted as a remedial program and students come to the sessions voluntarily. Studies into the impact of SI on student grades and retention report a number of implications on this basis. Visor, Johnson and Cole (1992)

undertook a study to examine whether students who attend SI sessions are affectively different to those who do not. They define affective variables as locus of control, self-efficacy, and self-esteem. These variables are described as “noncognitive factors” (Visor et al., 1992, p.12) and are thought to be significant contributors to student persistence in academic environments. For clarification of meaning, a description of each of these variables follows.

Locus of control can be external or internal to the individual or somewhere in between. It refers to the way an individual perceives the events in his or her life and their beliefs associated with these events (Visor et al., 1992). For example, people with an internal locus of control will believe the events that take place in their life are largely under their control, whereas those with an external locus of control will attribute these events to outside factors or forces (Visor et al., 1992).

The terms self-concept and self-esteem are sometimes used interchangeably but, in this context, they are defined independently. Self-concept refers to the picture an individual develops of himself or herself as a result of interactions with significant others (Bandura, 1997). Self-esteem, on the other hand, refers to the value that an individual places on his or her individual self-worth (Visor et al., 1992).

Self-efficacy is related to self-concept and self-esteem and represents the belief an individual has about his or her ability to succeed in a specific task. Bandura (1982, cited in Visor et al., 1992) states that individuals with a high degree of self-efficacy would be assured of their ability to perform a task and “persist in their efforts until they succeed” (p.4).

Visor et al. (1992) hypothesised that students who choose to participate in SI would have an internal locus of control and strong feelings of self-efficacy, and by attending SI these feelings would be reinforced. From their research, this hypothesis was verified. They also discovered that students with a strong external locus of control, low self-efficacy, and low self-esteem did attend SI sessions. However, these students remained occasional participants, only attending between one to three sessions during the semester. Visor et al. (1992) proposed that despite the non-threatening atmosphere of the SI session, students with an external locus of control, low self-esteem and low self-efficacy, become frustrated with the SI sessions, as they were unsure about being able to meet the academic demands of the situation. Visor et al. (1992) suggest that it is these students who are more likely to struggle academically and, therefore, the students who SI hopes to serve. Unfortunately, these students are not among the regular attendees of the SI program (Visor et al., 1992).

Research by Ogden et al. (2003) found positive correlations existed between SI attendance, retention rates and final grades. However, in concurrence with Visor et al. (1992), they believe that selection bias could be at play, that is, due to the voluntary nature of SI participation, the students who took part in the program were those who were motivated to achieve. Ogden et al. (2003) question what role participant motivation plays in a student's decision to volunteer for SI and believe further research should be conducted in this area to improve marketing of the program to those students who will benefit most. This is further supported by Webster and Dee (1997) who conclude that strategies to

motivate students to attend SI may be necessary to reach those students who have the most to gain from attending.

### **2.2.5 Student interaction and support is encouraged**

Students at university and college are often expected to sit silently in very large classes (between 200 and 400 students) with little opportunity for communication with other students or the teacher (Belzer, Miller & Shoemaker, 2003). SI enables students to work in small groups to interact and vocalise their ideas and thoughts about the course material (Lundeberg & Moch 1995; Martin & Arendale 1992). The interactions that take place enable students to assess their knowledge and refine their thinking, as they work towards developing greater understanding.

Lundeberg and Moch (1995) studied female nursing students in a Health Science course. A SI program was implemented to give students the opportunity to “think more about concepts and processes” (Lundeberg & Moch, 1995, p.315). Almost half of the women enrolled in the course took part in the SI sessions. This was a qualitative study and used a variety of data collection procedures. From the results, it was discovered that the non-threatening atmosphere characteristic of the SI environment facilitated a shift of power from the SI leader to the students. As the SI leader encouraged students “to work cooperatively” (Lundeberg & Moch, 1995, p.315), a community of learning was established where students were able to take risks and make mistakes without being ridiculed. In effect, the environment enabled the students to have greater control over their learning and provided a supportive environment in which to do so.

Interactions that take place as a result of the cooperative learning activities instigated by the SI leader provide students with the opportunity to develop critical thinking skills, social skills, self-esteem and self-confidence (Martin & Arendale, 1992). Other researchers have also made reference to the benefits of cooperative learning environments such as increased confidence and motivation, the sharing of concerns and enjoyment of the learning process (Beasley, 1997; Coe, McDougall & McKeown, 1999; Lundeberg & Moch, 1995). Martin and Arendale (1992) go on to state that the development of a sense of community in SI, along with these cognitive and affective changes, contributes to the success of the program and ultimately leads to student success and increased student retention.

### **2.3 PASS AT THE UNIVERSITY OF WOLLONGONG**

The PASS program is an initiative of the University of Wollongong (UOW) that began in 2002 and is modelled on the SI program developed by Deanna C. Martin. The four aims of the program, identified in the preceding chapter, involve the provision of support to first and second year students in order to reduce failure rates in core subjects, improve retention rates, help students in their transition to university and enable students to develop and use a variety of learning strategies (Rogan, 2004).

The PASS program is linked to a number of high-risk subjects at the University of Wollongong that have high failure rates and are perceived as difficult by students (Rogan, 2004). Subjects in which PASS is offered include: Chemistry, Commerce, Computer Science and Programming, Mathematics, Physics,



Anatomy, Physiology, and Engineering. PASS is offered for these subjects during the two main academic sessions – Autumn Session (February to June) and Spring Session (July to November). Summer Session is the only academic session in which PASS does not operate. Students enrolled in these subjects can attend the PASS sessions that run on a weekly basis. PASS is embedded in the timetable and an online enrolment procedure allows students to nominate the session they wish to attend. However, if clashes occur due to other commitments during the semester, students are usually able to attend alternate sessions (Rogan, 2004).

Since the implementation of PASS at UOW, failure rates in many of the high-risk subjects listed above have dramatically reduced. Results from UOW have shown that students attending more than five PASS sessions in a semester generally achieve higher grades in the particular subject to which it is attached (Student Services, 2004b). In addition, no failures were recorded for students attending 10 or more PASS sessions in six out of seven subjects during the 2003 Spring Session (Student Services, 2004a).

## **2.4 PASS AND SYSTEMIC ANATOMY**

Systemic Anatomy at the University of Wollongong was targeted by the PASS Co-ordinator as a high-risk course due to its continually high failure rate (24% in 2003) and because it is a subject that many students perceive to be difficult (Rogan, 2004). Systemic Anatomy is a large introductory subject that is taken by first year students enrolled in Biomedical Science degrees as well as the Bachelor of Education (Physical and Health Education) degree.

The PASS program was first offered to Systemic Anatomy students in 2004 and the results of this pilot were encouraging. The failure rate for the subject was halved to 12%, and a significant majority of students who attended five or more PASS sessions achieved a Pass grade or better (Dawson, 2004).

## **2.5 SYSTEMIC ANATOMY AS A HIGH-RISK SUBJECT**

The stated objectives of the Systemic Anatomy course at the University of Wollongong are for students to be able to:

*Identify gross anatomical structures on both models and human cadaveric material; Understand the anatomical relationship between the systems of the body; Understand the link between structure and function of anatomical structures (University of Wollongong, 2004).*

To meet these aims, the Systemic Anatomy course is delivered to students through two one-hour mass lectures each week over 13 weeks during the Autumn Session. A further three hours is spent in the Anatomy Laboratory, comprising a two-hour practical session and a one-hour tutorial session. It is also recommended by the lecturer that additional time should be spent in the laboratory in private or small group study (Brown & McAndrew, 2004).

The practical and tutorial sessions are large (approximately 40 students) with little opportunity to interact with the lecturer or laboratory supervisor. Laboratory demonstrators, who are previous students of Anatomy, are present during the laboratory sessions, however their level of effectiveness in providing adequate assistance to students is unknown. In most laboratory sessions there may be

one to three laboratory demonstrators present. The laboratory sessions are self-directed and students work independently or in small groups. Students work through the Anatomy Laboratory Manual, examining and identifying structures on models and cadaveric material.

The subject is assessed by way of heavily weighted, infrequent examinations composed of practical and theory components. The practical examination tests a student's ability to identify certain structures marked by pins on cadaveric material and on bones and models. In contrast, the theory examination consists of a large number of multiple-choice questions.

To succeed in the assessment tasks and achieve the outcomes of the course, Systemic Anatomy students are faced with several obstacles. The four main barriers to students as they attempt to master course material are: their lack of preparation to succeed in science, the information explosion, reading skills, and mastery of terminology (Belzer et al., 2003; Maxwell, 1980).

***(i) Lack of preparation to succeed in science***

Systemic Anatomy is a subject co-ordinated by the Faculty of Health and Behavioural Sciences at the University of Wollongong. It is a foundation subject for Biomedical Science courses and is also completed by students enrolled in the Faculty of Education's undergraduate Physical and Health Education degree. Systemic Anatomy students engage in the study of anatomical structure through the use of "cadaveric specimens, radiographic images, histological slides, audiovisual materials and anatomical models" (University of Wollongong, 2005a). The diversity of student educational backgrounds,

combined with the practical elements of study, means that many students come unprepared to succeed in a science-based course (Belzer et al., 2003). In addition, Loh's (1996) study of first year nursing students studying Anatomy revealed that many are anxious and lack confidence in passing the subject, are aware of the high failure rate and have a preconceived notion that it is a difficult subject.

#### ***(ii) and (iii) The information explosion and reading skills***

The information explosion is representative of the number of amazing advances in science over the last century (Maxwell, 1980). These advances mean that students are required to work through more detailed information on the topic area. Additionally, this information is presented to the students in lengthy and difficult texts (Belzer et al., 2003). As a result, Systemic Anatomy students require strong reading skills as they are expected to read and understand anatomical texts, charts, tables, and diagrams.

#### ***(iv) Mastering the terminology***

Mastering the terminology is another common problem faced by students of Systemic Anatomy. When embarking upon study in Anatomy, the process is similar to learning a new language. Students are faced with hundreds of new words that they must learn to spell, pronounce and understand. Learning this new vocabulary requires a skilled memory and a certain degree of motivation (Maxwell, 1980). Additionally, when faced with this task, first year students readily focus on learning the content and tend to neglect the development of thinking and learning skills that are required for "mastery of the content" (Belzer et al., 2003, p.31).

As a result of these difficulties, there has been a continually high failure rate among students taking Systemic Anatomy and each year a number of students drop out of their course or are required to repeat the subject. If a student chooses to repeat the subject, they must do so during Summer Session (if the subject is offered) or in the following year. Consequently, a student will interrupt the continuity of his or her degree as the cohort moves on ahead of them. Additional study time is required by these students in order to complete their degrees, with some students graduating six months to one year after the original cohort.

## **2.6 THE BENEFITS OF PASS FOR SYSTEMIC ANATOMY STUDENTS**

With the delivery of the program by way of lectures and laboratory sessions, little time is devoted to class discussion about the course content. According to research by Raimondo, Esposito and Gershenberg (1990, cited in Price & Rust, 1995), larger classes traditionally result in fewer student interactions, or interaction at lower cognitive levels and, because of this, the development of higher-level thinking among students does not take place. This is further exacerbated by the format of the assessment tasks, such as multiple-choice exams, that tend to assess lower-level cognitive skills. In this situation, PASS has an important role to play by providing students with the opportunity to explore the subject matter in a cooperative learning environment and develop the necessary cognitive skills.

## **2.7 PASS AND THE COOPERATIVE LEARNING ENVIRONMENT**

Studies of cooperative learning environments have shown that students who work together to solve problems benefit academically (Bryngfors & Bruzell- Nilsson, 1997; Gabbert, Johnson & Johnson, 1986; Lundeberg & Moch, 1995). Gabbert et al. (1986) studied cooperative learning groups to see whether process loss or gain occurs in these conditions and how cooperative learning affects later individual performance. Process gain is said to occur when a transfer of learning takes place. In cooperative situations this transfer is from the group to the individual. In other words, students who work in groups have the opportunity to develop their awareness and cognitive abilities by sharing ideas and discussing problems. If, after working in a group situation they perform well on an individual level, group-to-individual transfer has taken place and a process gain has occurred.

Gabbert et al. (1986) found that students working in cooperative groups performed higher on the academic tasks than those working in individual conditions. This supports the concept that the performance of students working in cooperative groups may be superior to those operating individually. In addition, they found that students who had been exposed to cooperative conditions achieved higher on individual post-tests than those in the individual condition. This is an example of process gain, or a positive group-to-individual transfer.

Academic encouragement and support was described by the students as a feature of the cooperative condition, which is an important part of student social, personal and academic development (Gabbert et al., 1986). Lundeberg and

Moch (1995) directly relate cooperative learning environments to an increased sense of community that assists in the intellectual development of female health science students. Additionally, Bryngfors and Bruzell-Nilsson (1997) attribute a decrease in student complaints regarding feelings of loneliness and anonymity to the implementation of the SI program at their institution.

## **2.8 MEANING-ORIENTED AND STRATEGIC LEARNING STYLES**

In the United Kingdom, Capstick and Fleming (2004) undertook research to investigate the cooperative learning environment in Peer Assisted Learning (PAL) sessions at Bournemouth University, a program based on SI. The aim of their research was “to provide a more comprehensive model of the learning that takes place in PAL” (Capstick & Fleming, 2004, p.4). The purpose in doing this was to clarify if the reality of what took place in the PAL session was the same as that described in the literature. For the purpose of their study, they defined two types of learning styles that students adopted and may be encouraged in PAL sessions. These two learning styles are the meaning-oriented approach and the strategic approach. The meaning-oriented approach focuses on achieving greater understanding of the subject material and analytical thinking, whereas the strategic approach focuses on “recognising and utilising the most effective ways of achieving good grades” (Capstick & Fleming, 2004, p.6).

Through a series of questionnaires, interviews, discussion groups and PAL session observations, they were able to analyse the learning that took place. From their results, Capstick and Fleming (2004) supported the notion that various levels of both meaning-oriented and strategic learning styles were present in the PAL sessions. They concluded that the reason for this depended

upon the desires and needs of the students in attendance. This means that both approaches are of importance within the PAL setting, however, it is necessary to reach a balance. If a session was to focus on coursework assignments then it would be beneficial to offer assistance using a meaning-oriented approach, in other words, looking to understand the subject matter as it relates to the assignment.

Examples of a meaning-oriented approach are present in the literature. Bryngfors and Bruzell-Nilsson (1997) surveyed SI participants about what they thought had been good about SI. The most frequent answer given by students was small group discussion, followed by increased understanding. Students felt they were able to explore the course content in small groups and learn from each other, whilst the discussion of theory and exploration of problems from a different perspective was beneficial. These results indicate that students benefited from a meaning-oriented approach, that this was of most importance to them and, because of this, their results improved.

Similarly, in the survey conducted by Price and Rust (1995) to determine why students attended SI more than twice, 78% of the respondents believed that it improved their knowledge and understanding through sharing ideas, discussion of problems, and explanation of information to others in the group. In addition, 81% stated that it helped with their coursework, specifically, "how to approach it, what was required, how to present it" (Price & Rust, 1995, p.127). This is a clear example of students finding meaning-oriented and strategic approaches of benefit within the SI sessions.



A study undertaken by Packham and Miller (2000) at the University of Glamorgan, Business School, in Wales, looked at demographic data, subject attendance patterns, and compared coursework and exam grades in a PASS scheme. The purpose was “to measure attendance patterns and assist in the development of future PASS strategies” (Packham & Miller, 2000, p.58). The comparison of coursework and exam grades provided a significant insight into the dominant approach featured in the PASS sessions. The data showed that PASS attendees achieved much higher grades for coursework compared with non-attendees, however, there was no significant difference between the two groups for final exam marks. The improvement in student academic performance appeared to be linked to student success in coursework. This suggests an imbalance in the approaches used, with overuse of the strategic approach and limited focus on the meaning-oriented approach.

In contrast, the PASS program at the University of Wollongong ensures that the focus on coursework (strategic approach) within sessions does not dominate, as leaders are not allowed to provide assistance with assessable tasks (Rogan, 2004). The focus of the sessions is on the exploration of subject content and concepts (meaning-oriented approach) combined with learning how to learn, time management and study skills.

## **2.9 STUDENT EXPECTATIONS AND REALITIES**

As mentioned previously, students begin their studies with various expectations about university work and life. Research conducted by McInnis, James and Hartley (2000) shows that students underestimate “the amount of work they are required to do, the amount of time they have to spend on study and the

pressure on them [throughout the semester]" (p.33). In addition, the research conducted by McInnis and James (DETYA, 1999) supports the notion that student expectations of academic staff, the learning environment and the grades they will receive are overly optimistic.

Martin and Arendale (1992) report findings from a study suggesting that tertiary students have "less support from family, friends and teachers ... and also face increased responsibility for making major life decisions" (p.11). Findings by McInnis et al. (2000) also indicate that the added pressure of undertaking part-time or casual work whilst engaged in full-time study means that students have less time to spend engaged in university life. The combination of these factors can be problematic for students when the realities of their experiences do not match their expectations and the added pressures upon them interfere with their studies.

To explore the expectations of students further, Ledman (2005) conducted a study into student expectations of a simulation that was conducted as part of a management course. In this study, students were asked to complete a questionnaire rating their expectations of the simulation. Expectations included whether the simulation would be challenging, improve their learning, enable them to enjoy the learning process and help them learn career skills. In addition, they were asked to consider their expectations in relation to certain learning outcomes such as problem solving, teamwork and critical thinking. The results of this study indicated that student expectations of the simulation were high.

Taking the results of Ledman (2005) and the conclusions of McInnis and James (DETYA, 1999) and McInnis et al. (2000), it would be fair to suggest that student expectations of study assistance programs, such as PASS, are likely to be high. It is anticipated that further research into student expectations of PASS will provide insights into the perceived benefits of students who attend these programs.

## **2.10 CONCLUSION**

The literature describes the outstanding effect that cooperative learning environments such as SI and PASS may have on improving student achievement and retention rates. It is important to consider however, that a number of elements can affect the success of achieving the aims of each program. The approaches to learning adopted by the students (meaning-oriented or strategic); affective variables (locus of control, self-efficacy, self-esteem); level of support from the subject co-ordinator; and the ability of the PASS leader to facilitate the sessions, are all important factors to consider. It is anticipated that an exploratory study of first year Systemic Anatomy students attending PASS at the University of Wollongong will provide insights into their experiences in the program and the degree to which their expectations are met.

# Chapter Three

## METHODS

### 3.1 OVERVIEW

At the University of Wollongong, PASS provides support to students in specific high-risk subjects, that is, those subjects in which a consistent number of students receive low grades (Martin & Arendale, 1992). The PASS program is provided to students free of charge and facilitates the discussion of course material in a non-threatening environment, sharing of concerns about the course and development of study skills relative to the course content. The overall purpose of this study is to investigate the experiences of first year students enrolled in Systemic Anatomy who attend PASS at UOW. Accordingly, this chapter contains a description of the methods used by the researcher to answer the following overarching research question:

What are the experiences of first year Systemic Anatomy students undertaking the Peer Assisted Study Sessions program at the University of Wollongong?

The three supporting sub-questions to be explored are:

1. Why do first year Systemic Anatomy students choose to attend PASS?
2. What are the expectations of first year Systemic Anatomy students who attend PASS?

3. What are the academic, personal and social experiences of first year Systemic Anatomy students attending PASS at the University of Wollongong?

For the purpose of answering these research questions, a combination of qualitative and quantitative data collection methods were used to provide a deeper insight into student expectations and experiences of PASS at UOW.

### **3.2 MODE OF INQUIRY**

The research for this project was formulated on the basis of a case study approach (Yin, 1994). Case studies allow the researcher to gain an understanding of the complexity of a situation as well as the richness of the data involved. This particular approach enables observation of the characteristics of an individual unit and, in this case, the focus is a group of first year students who took part in the PASS program for Systemic Anatomy at UOW.

Although the case study approach has certain advantages, it has been criticised in the belief that the biased views of the investigator “influence the direction of the findings and conclusions” (Yin, 1994, p.9). The fact that the researcher is a past student of Systemic Anatomy and was also a PASS leader for this subject in 2004 has been recognised as a limitation of this study.

Another concern with regard to case studies is the view that it is not possible to make generalisations from only one case (Burns, 2000). Whilst this is accepted, Yin (1994) argues that the purpose of the single case study is not to generalise across a population but to “expand and generalize theories” (p.10).

Accordingly, the purpose of this study is to increase understanding of student attendance, expectations and experiences of the PASS program at UOW, rather than to “deliver statements of generalisation” (Burns, 2000, p.475).

To undertake this case study, the researcher has chosen to use a mixed model research approach. A mixed model research approach is defined by Johnson and Christensen (2004) as one in which “the researcher mixes both qualitative and quantitative research approaches within a stage of the study or across two of the stages of the research process” (p.49). By combining qualitative and quantitative research approaches the researcher is able to gain an understanding of the expectations and experiences of participants in the case study and, at the same time, objectively explore the experiences of the participants. As Reichardt and Cook (1979) explain, combining these two methods enables the researcher to “offer insights that neither [research method] alone could provide” (p.21), thereby providing a detailed picture of the case under investigation.

Additionally, by using multiple methods, the researcher is able to triangulate the findings of different methods of data collection. In other words, by supporting weaknesses in one form of data collection with strengths in another, it becomes possible to “enhance the validity of findings” (Punch, 1998, p.247).

### **3.3 SAMPLE SELECTION**

In order to obtain a sample of students to participate in the study, the researcher liaised with the Subject Coordinator for Systemic Anatomy in the Faculty of Health and Behavioural Sciences at UOW. The subject coordinator

was informed of the procedures involved in the study and enabled the researcher to inform prospective participants about the research during lectures and in compulsory laboratory sessions at the start of the Autumn Session.

As attendance at PASS was on a voluntary basis, it was not possible to draw a random sample because a complete list of students attending the sessions was not available. For this reason, the researcher felt that the best place for data collection would be in the compulsory laboratory sessions that the Systemic Anatomy students would attend on a weekly basis. This would ensure that students who completed the pre-questionnaire would be easily located again at the end of the semester to complete the post-questionnaire.

At the time of the data collection in the laboratory sessions, all students who had taken part in a PASS session or intended to attend PASS were invited to participate in the study. Their participation in the study was voluntary and this limited the number of responses that the researcher was able to collect. In light of this, a convenience sample was chosen. A convenience sample is a non-probability sampling technique and participants are selected on the basis of their availability (Wallen & Fraenkel, 2001). It was recognised by the researcher that this type of sampling would place limitations on the study. This was because convenience sampling does not ensure that every PASS attendee had an equal possibility of being included in the sample and therefore it is not certain whether the sample reflects the entire population of PASS attendees. However, in this instance, the researcher does not intend to generalise to a broader population on the basis of this study. Furthermore, as this study is

exploratory in nature, it will provide valuable insights into the experiences of first year Systemic Anatomy students participating in the PASS program.

### **3.4 DATA COLLECTION METHODS**

As described earlier in this chapter, the researcher used a mixed model research approach to collect both quantitative and qualitative data (Johnson & Christensen, 2004). These data collection methods took the form of pre- and post-questionnaires, focus group interviews and observations, combined with an analysis of anonymous final course grades for all students enrolled in Systemic Anatomy (both PASS and non-PASS participants). A description of the various data collection methods and justification for their use in this case study is set out below.

#### **3.4.1 Pre-Questionnaire and Post-Questionnaire**

Clarke (1999) states that a questionnaire can be “designed to measure a variety of social and psychological variables” (p.68). As the quality of information that can be drawn from a questionnaire is dependent on its design, the questionnaire for this study was developed in a systematic manner. In order to gather detailed information from the questionnaire, the wording of the questions was very important. The questions were revised many times, initially with assistance from academic staff in the Faculty of Education at UOW and eventually in response to the outcomes of a pilot test.

Questionnaires are advantageous as they provide the same set of questions to each respondent and, in this way, are standardised. Participants are also able to answer in their own time and at their own pace (Burns, 1994). Cohen and



Manion (1980) argue this point, noting that respondents can be limited by the written word and Burns (1994) adds that it is difficult to follow up incomplete or inaccurate responses.

It was difficult to obtain examples of questionnaires evaluating peer assisted learning programs conducted by researchers in other countries. However, one such example was obtained through email correspondence with Hugh Fleming of the University of Bournemouth in the United Kingdom (personal communication, January 21, 2005). Mr Fleming is the PAL Project Manager at the University of Bournemouth and has undertaken similar studies into PASS programs. The questionnaire he provided was used in 2004 and he indicated a number of strengths and weaknesses in its design. These elements were taken into consideration when drafting the questionnaire for this study.

To ensure that the questionnaire would be a useful tool and provide quality data, it was important to consider the main research questions in the design stages. Patton (1982) describes four major types of questions that are commonly used in questionnaires as behaviour, opinion, feeling and knowledge questions. As the focus of the pre-questionnaire was to ascertain student understanding and expectations of the PASS program, knowledge and feeling questions were dominant. In the post-questionnaire, the questions focussed on student behaviour, feeling and opinion.

The pre-questionnaire and post-questionnaire were divided into a number of sections. Section 1 of the questionnaire consisted of a series of predominantly closed questions which were used to gather data about each participant, for

example, age, gender and course enrolment. In Section 2, the body of the questionnaire, participants were asked about their understanding of PASS, how they were informed about PASS, how many sessions they planned to attend and their level of expectation about PASS. This was achieved through open and closed questions. The open questions provided the researcher with qualitative data about participants' knowledge and feelings of the PASS program. The closed questions provided information about the number of PASS sessions the participants would attend. Participant expectations were measured using a five-point Likert scale and participants were able to judge each item according to the rating of 'strongly agree', 'agree', 'disagree', 'strongly disagree' or 'don't know' to indicate their response.

The rating scale used began as a four-point even-numbered scale as described by Patton (1982). However, after discussion between the researcher and her supervisors an additional 'don't know' column was included making it a five-point odd-numbered scale. The placement of the 'don't know' column at the furthest end of the scale meant that students were more likely to consider whether they agreed or disagreed with the statement before simply ticking the 'don't know' column. Another reason for the placement of the 'don't know' column at the far end of the scale was that this option is not a true reflection of a mid-point in the scale and is not included when calculating levels of agreement or disagreement with the items.

The post-questionnaire contained an additional section. Section 3 was designed to provide the researcher with an understanding of students' overall satisfaction with the PASS program and enable participants to provide their

suggestions for improvement of the PASS program. Finally, in order to ensure that data from the pre-questionnaire and post-questionnaire were reliable, focus group interviews and observations were conducted to triangulate the data.

### **3.4.2 Observations**

Through the use of observation, it is possible to “record behaviour as it occurs” (Burns 1994, p.262). The purpose of the observations in this study was to provide further evidence of what was taking place in PASS. Although there are several constraints to observational research, Adler and Adler (1998) state that, “researchers’ observations of their settings and subjects can be considered hard evidence” (p.89). In this study observational data will be used to further enhance the consistency and validity of the research findings.

Adler and Adler (1998) also state that two variables, in particular, time and place, will enhance the credibility of findings. Although the number of observations was limited to three over a one-month period, it was considered that by observing different PASS leaders with different student groups that “the widest range of observational consistency” (Adler & Adler, 1998, p.88) would be ensured. However, due to the limited number of observations undertaken, the researcher may not have been present to observe particular behaviours or conditions that would be expected to take place in PASS but were not present at the time of the observations.

### **3.4.3 Focus Group Interviews**

The use of focus group interviews has several benefits in case study research in that they provide the researcher with in-depth information over a short period

of time (Johnson & Christensen, 2004), they are enjoyable to participants (Patton, 2002), and participants feel that their “opinions, knowledge and experiences are valued” (Litoselliti, 2003, p.20) by the researcher.

In this study, focus group interviews were used to provide further qualitative data to supplement the quantitative data collected from the pre- and post-questionnaires and for further exploration of the research questions. As the focus group interviews were held at the end of the semester, it was anticipated that the data collected would help the researcher further investigate the effectiveness of the PASS program and the expectations and experiences of the participants.

Conversely, there are limitations to focus group interviews as a method of data collection. Due to time constraints and the number of participants involved there are often restrictions on the amount of time given to questioning and obtaining responses from participants (Patton 2002). This disadvantage was addressed by having no more than three people attending each focus group interview, giving ample time to discuss the prepared questions with the participants.

Both Patton (2002) and Litoselliti (2003) state that a further limitation of focus group interviews may be the presence of people who may not wish to voice their opinions because of the fear of negative reactions. Due to the small number of participants present in each focus group, students were given the opportunity to voice their opinions in a non-threatening environment. Students were actively encouraged to speak out and express a point of view.

It can also be difficult to make generalisations from focus group interviews because of the limited number of participants. This means the sample may not be entirely representative of the case being studied (Litoselliti, 2003). For the purpose of this study, the researcher acknowledges that the results of the focus group interviews may not be able to be generalised, however they are indicative and illustrate in detail particular social phenomena.

Patton (2002) describes the focus group interview as an “interview with a small group of people on a specific topic” (p.385). By conducting numerous focus group interviews, a number of perspectives emerge and in the process “people can consider their own views in the context of the view of others” (Patton, 2002, p.386). Although focus group interviews would typically consist of six to ten participants (Litoselliti, 2003), the focus group interviews conducted in this study consisted of only two to three participants. Although the researcher had organised four to five participants for each focus group interview, on the days that the focus group interviews were conducted, some students did not attend at the scheduled time.

### **3.5 DATA COLLECTION PROCEDURES**

#### **3.5.1 Authorisation**

Approval to undertake the research was sought from the Human Research Ethics Committee of UOW. Approval was granted on 2 March 2005 after modifications were made to the original application, as requested in the Committee’s letter dated 11 February 2005. A copy of the approval letter from the Committee is located in Appendix A.

### 3.5.2 Pilot Testing

To determine whether the questionnaire was an effective research instrument and that the data collected would be valid, piloting of the questionnaire took place. By doing this, the researcher was able to refine the questions and format of the questionnaire. Piloting of the pre-questionnaire was undertaken with thirteen second year students who had participated in the PASS program for Systemic Anatomy or Human Physiology in 2004. The students were a mixed group of males and females.

Students had little difficulty in completing the questionnaire although some issues were raised in relation to particular items. The pre-questionnaire went through several revisions prior to pilot testing and therefore there were few questions that required re-wording. The majority of changes resulting from the pilot test were in relation to formatting. Students found completing the table in Section 2 (see Appendix F) difficult and suggested that shading every alternate row would make it easier for students to follow the items across the page. They also indicated that having brightly coloured paper on the front page would make the questionnaire more eye-catching and exciting.

Questions that were modified as a result of the piloting process included Question 3 and Question 6 in Section 2. Question 3 was originally a closed question asking students to identify which item had the most impact on their decision to enrol in PASS. To obtain more detailed data, this question was changed to an open question that asked for the same information but also

asked students to justify their choice. In this way, additional qualitative data were obtained.

Question 6 was originally an unnumbered question that asked students to tick a box if they would be interested in participating in focus group interviews. The pilot test group indicated that this unnumbered question was easily overlooked and it was recommended that this question should be given a number with the addition of 'Yes' and 'No' boxes that the students could tick.

Other instructional modifications were made to Question 3 and Question 10 in Section 1. These modifications were made to ensure that respondents could be guided easily through the questionnaire and answer only the questions that pertained to their circumstances.

**3.5.3 Data Collection Timetable**

The following table illustrates the sequence of data collection that took place in order to investigate the research questions in this study.

**Table 1: Data Collection Timetable**

Date	Data Collection Method
7 – 9 March 2005 (Week 3)	Pre-Questionnaire (Student Response Form 1)
April 2005	Three observations conducted
9 – 16 May 2005 (Week 11)	Focus Group Interviews
16 – 18 May 2005 (Week 12)	Post-Questionnaire (Student Response Form 2)
July 2005	Statistical data obtained from Student Services

#### **3.5.4 Recruitment**

Students enrolled in Systemic Anatomy were approached during compulsory laboratory sessions in Week 3 of Autumn Session in 2005. The researcher attended eight out of the ten weekly laboratory sessions in order to obtain a sample of students to participate in the study. The researcher was unable to attend two of the laboratory sessions because of her commitments to attend lectures and tutorials for other subjects in which she was enrolled.

Students interested in participating in the study were given a copy of the Information Sheet (Appendix B). After reading the Information Sheet, students were given time to ask questions about the research. Students then read and signed the Consent Form (Appendix C) and were then asked to complete the pre-questionnaire (Student Response Form 1, Appendix F).

Within the pre-questionnaire, participants were asked to indicate their willingness to participate in focus group interviews later in the session to discuss their experiences of the PASS program. Participants who agreed to be involved were asked to provide email and phone contact details so that the researcher could contact them to arrange these interviews. Suitable meeting times for focus group interviews were set in Week 11 of Autumn Session and all participants who indicated their willingness to participate were contacted to gauge their availability. A total of nine participants took part in the focus group interviews at the times set by the researcher.



### **3.5.5 Pre-Questionnaire and Post-Questionnaire**

The questionnaire consisted of an introductory page printed on coloured paper that contained instructions about how the questionnaire was to be completed. These instructions were written in plain language so that participants would have no difficulty in understanding what was being asked of them. The instructions included information about the purpose of the questionnaire and issues related to confidentiality. Before completing the questionnaire, participants were also given verbal instructions by the researcher about these matters.

Participants were asked to write their names on the first page of the pre-questionnaire. This was to ensure that the researcher had a record of who had completed the pre-questionnaire and to enable each participant to be followed up for the purpose of completing the post-questionnaire. Each participant was given a code and this code was written onto the post-questionnaire by the researcher. At the time of administering the post-questionnaire, the names of participants were called from a list and each participant was given the corresponding coded questionnaire to complete.

Participants were taken into the tutorial room adjoining the Anatomy Laboratory for the purpose of completing the questionnaires. The pre-questionnaire and post-questionnaire took approximately 10 to 15 minutes each to complete. When finished, participants gave the completed questionnaires to the researcher and returned to their laboratory class. The post-questionnaires of participants who were absent at the time that it was administered were

discarded, along with the corresponding pre-questionnaire data. A copy of the post-questionnaire can be found at Appendix G.

**3.5.6 Observations**

Three observations of PASS took place during the time span of the program. The researcher took the role of non-participant observer to avoid influencing the interactions that were taking place. Participants were approached before the observation took place and asked to sign a consent form indicating permission to participate in the study. This meant that the role of the observer was obvious to the participants. At the beginning of the session under observation, the layout of the classroom was recorded along with the location of where the students sat in the room.

Each observation was for the duration of the PASS session – up to one hour in length. The researcher sat in the classroom with the students and recorded observations on a prepared Fieldnote Sheet (Appendix I). The researcher recorded interactions that took place between the students and the PASS leader and among the students. A table of ‘things to consider’ was listed on the Fieldnote Sheet and contained items that had been highlighted by participants in the pre-questionnaire and also featured in the literature about PASS. These items are listed in the table below.

**Table 2: Things to consider when conducting observation**

Problem solving	Clarifying basic anatomical concepts
Clarifying complex anatomical concepts	Leader redirecting questions to students
Interaction with other students	Sharing of study skills and strategies
Discussion of course expectations	Use of anatomical terminology
Exam preparation	Catering to various learning styles
Enjoyment of learning process	Opportunities to ask questions

After recording the observations, the researcher then coded the observations according to the items in Table 2 above, for use in later analysis. By doing so, the researcher gained a broad understanding of what was taking place during the sessions.

**3.5.7 Focus Group Interviews**

A list of potential participants was collated from data provided in the pre-questionnaire in which students had indicated their willingness to participate in the focus group interviews. These students were then informed by email of the times that the focus group interviews would take place. The researcher telephoned these students a few days later and those who could attend the interviews were asked to meet the researcher at the time and location that had been established.

On the day of each interview, the researcher met the focus group participants at the agreed location and time. The participants were given a Consent Form (Appendix D) and were asked to sign it before the interview began. The focus group interviews were recorded on audio-tape for the purpose of transcription. During the interview, students were asked a series of eight open ended questions, prepared by the researcher prior to the interview. A copy of the

questions used in the focus group interviews is located at Appendix H. Those same questions were used for all four focus groups. The interviews lasted between twenty-five and forty-five minutes. At the conclusion of the interview, participants were thanked for their time and assistance and, at a later stage, the data were transcribed.

### **3.6 ENSURING CREDIBILITY AND TRUSTWORTHINESS**

In undertaking mixed model research, triangulation of methods was employed to improve the credibility of the study. Johnson and Christensen (2004) describe methods triangulation as, “the use of multiple research methods to study a phenomenon” (p.250). In this study, the combination of quantitative and qualitative research methods enhances credibility and expands the understanding of the data that would otherwise be missed if only one method of data collection was used.

To further ensure credibility, triangulation of data was also considered by the researcher. Data triangulation is described by Johnson and Christensen (2004) as, “the use of multiple data sources to help understand a phenomenon” (p.250). In this study, a series of four focus group interviews took place over the space of one week and the researcher used this data to “cross-validate and corroborate findings” (Johnson & Christensen 2004, p.426).

To ensure the trustworthiness of the results obtained in the questionnaire, the researcher undertook a test-retest reliability check of the pre-questionnaire and post-questionnaire. This involved the administration of both questionnaires to a pilot group and then retesting this group with the same instrument the following

week. This procedure produced positive results indicating the reliability of the test instrument.

Furthermore, the credibility of the research methods is highlighted by the ability of the researcher to answer the research questions using the data obtained. As stated by Hammersley (1992, cited in Ritchie & Lewis 2003, p.273), “an account is valid or true if it represents accurately those features of the phenomena that it is intended to describe, explain or theorise.”

### **3.7 DATA ANALYSIS PROCEDURES**

#### **3.7.1 Pre-Questionnaire and Post-Questionnaire**

The data from the pre-questionnaire and post-questionnaire contained a mix of quantitative data obtained from closed questions and qualitative data from open questions. The quantitative data were analysed using the SPSS statistical package. From this, frequency distribution and percentages of responses were compiled.

The qualitative data obtained from the pre- and post-questionnaires were entered into tables for analysis in order to find common themes as well as the frequency of these themes in the responses. The responses were then grouped according to themes that had been identified for further analysis and interpretation.

### **3.7.2 Observations**

The data from the observations were analysed by reviewing the completed Fieldnote Sheet. The data were then transcribed and coded under appropriate headings to identify any patterns that existed.

### **3.7.3 Focus Group Interviews**

The data from the focus group interviews were recorded onto audio-tape. Transcription of the data then took place. The transcripts were analysed to compile an index of common themes. Under each index heading a number of sub-themes were identified. The allocation of data pertaining to these sub-themes was then undertaken, ensuring that each was referenced to the focus group from which it was obtained.

### **3.7.4 PASS Program Statistics**

Statistical reports from Student Services at UOW were obtained and analysed. Using these reports the researcher was able identify the total number of students who attended PASS for Systemic Anatomy and the number of sessions they attended. These reports were then used to identify the number of students who failed Systemic Anatomy in comparison to the number of PASS sessions attended.

## **3.8 CHAPTER SUMMARY**

This chapter has outlined the variety of methods and techniques used by the researcher to address the research questions that are the focus of this study. The data collection methods are credible and trustworthy and, through the combination of these methods, triangulation of the data is possible. To answer

the research questions, the data collected from the pre-questionnaires, post-questionnaires, observations and focus group interviews will be presented in Chapter Four.

# Chapter Four

## RESULTS

### 4.1 INTRODUCTION

PASS has been implemented at UOW to provide support to students in specific high-risk subjects. Systemic Anatomy has been identified as a high-risk subject and the PASS program has been attached to it. The purpose of this study was to investigate the experiences of first year Systemic Anatomy students attending PASS at UOW. PASS is provided free of charge so that students can discuss course material in a non-threatening environment, share problems they are experiencing and discuss study strategies. Given this context, the main research question was:

What are the experiences of first year Systemic Anatomy students undertaking the Peer Assisted Study Sessions program at the University of Wollongong?

Three supporting sub-questions have been identified as follows:

1. Why do first year Systemic Anatomy students choose to attend PASS?
2. What are the expectations of first year Systemic Anatomy students who attend PASS?
3. What are the academic, personal and social experiences of first year Systemic Anatomy students attending PASS at the University of Wollongong?



This chapter presents the results of the data gathered during the investigation of these questions. A combination of quantitative and qualitative techniques were used and the results of the pre-questionnaires, post-questionnaires, focus group interviews and observations are presented in a report format with some tables displaying quantitative data. Whilst the sub-questions are addressed directly in this chapter on the basis of these data, the main research question is answered through a discussion of the various responses that have been gathered.

## **4.2 PARTICIPANT PROFILE**

A total of fifty-one first year Systemic Anatomy students who volunteered for this study completed the pre-questionnaire and post-questionnaire. Of the 51 participants, 30 (59%) were female and 21 (41%) were male.

Systemic Anatomy is a first year subject for students of Biomedical Science and Physical and Health Education. Of the 51 students who took part in the study, 38 (75%) were Biomedical Science students enrolled in BMS101 and 13 (25%) were Physical and Health Education students enrolled in EDUP131. This study sample is representative of the entire cohort of students enrolled in Systemic Anatomy, with 253 (77%) Biomedical Science students and 72 (23%) Physical and Health Education students who completed this subject.

The majority of respondents indicated that this was their first year at university. Four participants indicated that this was not their first year at university and, of those four, only one had attempted Systemic Anatomy before.

Participants varied in age, with 43 (84%) in the 17-20 year age group, five (10%) in the 21-25 age group, one (2%) in the 26-30 age group and two (4%) in the 30+ age group. From these data it is evident that most of the respondents were school leavers in the one or two years prior to entering the University.

Belzer et al. (2003) claim that many first year students lack the necessary academic preparation to succeed in science-based subjects and, as Systemic Anatomy is a branch of the biological sciences, the researcher was interested to find out if participants had studied Science before beginning university. Thirty-nine (76%) participants indicated that they had studied Chemistry, Biology or Physics (or a combination of these) in Years 11 and 12 at high school. The remaining twelve had not studied Science before. Seven of these were enrolled in the Biomedical Science course (BMS101) and five were enrolled in the Physical and Health Education course (EDUP131).

In the pre-questionnaire, participants were asked to indicate their levels of confidence with the subject matter for the course. Only nine participants (18%) reported that they were 'confident' or 'very confident', while 27 (53%) were undecided and 15 (29%) were 'uncertain' or 'very uncertain'.

The University attracts students from the Illawarra region, Sydney, NSW regional areas, other Australian states as well as international students. The participants in this study reflect the diversity of students studying at UOW. The results show there was a relatively even mix of participants with 18 from the Illawarra region, 15 from the Sydney region and 15 from NSW regional areas. Only two participants came from other Australian states and one participant was

from overseas. Of the total number of participants, 12 had moved away from home to study at UOW. Eleven of these were students in the 17-20 age group, while the remaining one was in the 21-25 age group.

In summary, the data indicate that most of the participants came straight from school and live in the Illawarra or Sydney region. A number of these young people moved from home to attend university. The majority of participants had studied Science at school, however, very few reported feeling confident about the content involved in the subject.

#### **4.3 RESEARCH QUESTION 1**

The pre-questionnaire was designed to provide the researcher with an understanding of how the participants had heard about PASS and how many sessions they planned to attend during the Autumn semester. The post-questionnaire was designed to provide information about how many sessions the participants actually attended and their reasons for attending the number of sessions they did. These results and data collected in the focus group interviews provide a response to the first research question:

*Why do first year Systemic Anatomy students choose to attend PASS?*

##### **4.3.1 How were you informed about the PASS program?**

Participants were asked in Question 2 of the pre-questionnaire to indicate how they were informed about the PASS program and which method had the greatest influence on their decision to enter the program. In answering this question, participants were asked to consider a list of six items and select the responses that best applied to them. The six items were: email/SOLS mail,

word of mouth, privately encouraged by academic staff, mentioned during a lecture or information session, condition of enrolment or other.

The results indicate that most participants were informed about PASS through email or Student OnLine Services (SOLS) mail and by hearing it mentioned in lectures. SOLS mail is an electronic letterbox through which administrative and academic staff at the University can send official communications to students and can monitor the status of these messages. At the start of the Autumn Session, the PASS Co-ordinator sent out SOLS mail to all students enrolled in Systemic Anatomy advising them about the availability of PASS and providing a link to the online enrolment page. It is interesting to note that only 38 out of the 51 participants indicated that they were informed about PASS in this way. To explain this phenomenon, some students may not have accessed their SOLS mail prior to completion of the pre-questionnaire or had disregarded the message without reading the contents. However, even though all participants did not indicate that email/SOLS was a source of information about PASS this method of hearing about PASS was rated the highest.

Only six participants indicated that they had been privately encouraged by academic staff, whilst two noted that attendance was a condition of their enrolment. A further three participants reported that other methods, such as being encouraged by their parents after a parent information night and reading about it in the UOW orientation booklet, had influenced them.

Participants were asked to select the method that had the greatest impact on them and explain why this was the case. As mentioned above, they indicated

that email/SOLS mail had the greatest impact on their decision to enrol in PASS. One participant noted that *"it gave all details and statistics on students outcomes"*. The explicit information about how students in previous years had achieved higher grades by attending PASS was a significant draw card in encouraging students to enrol in PASS for Systemic Anatomy. Additionally, the way the SOLS mail was set up meant that students had a direct link to enrol in PASS and, as one participant explained, *"the email was there in front of you telling you all the information and the links to enrol in a class"*. The PASS Coordinator had set this service up for students so that they had access to statistical data detailing the success of past PASS participants and to enable students to enrol in PASS with ease.

Hearing about PASS in lectures or information sessions also had a significant impact on participants. The fact that the lecturer, a reliable and authoritative figure, was explaining that PASS would help with their studies in the subject gave the program credibility. One participant commented that *"it was the lecturer telling us what would help us with this subject"* that provided the necessary motivation to enrol in the program.

A key selling point for PASS was informing the students about failure rates for Systemic Anatomy and how the implementation of PASS for Systemic Anatomy in 2004 reduced these failure rates. As a result of this procedure, one participant commented that *"because of the statistical information they provided, it made me worried and so I wanted to get all the help I could get"*.

Word of mouth also rated highly with participants who said other students told them about their experiences with the PASS program. One participant wrote *“you can get honest feedback on how effective the classes were”*. A number of Anatomy laboratory demonstrators who had attended PASS for Systemic Anatomy in 2004, also spoke highly of the PASS program. They were able to share their experiences with other students and give honest feedback about the program and how it helped them to achieve good grades. One participant commented that, *“the demonstrators recommended PASS as a very helpful way of staying on top of the work”*.

Finally, as most participants noted that they were informed about PASS through a variety of sources, it is interesting that one participant indicated that a combination of these factors had the greatest impact on the decision to enrol in the program. The participant wrote *“the fact that it [PASS] was mentioned through all these outlets stressed the importance of it most to me”*.

#### **4.3.2 How many PASS sessions do you think you will attend this semester?**

Students were asked in the pre-questionnaire how many PASS sessions they thought they would attend during the semester. The results of this question are displayed in Table 3 below.

**Table 3: Number of sessions**

No of sessions	How many PASS sessions do you think you will attend this semester? (Pre-Questionnaire)	How many PASS sessions did you attend this semester? (Post-Questionnaire)
0	1 (2%)	1 (2%)
1 – 4	1 (2%)	14 (27%)
5 – 9	15 (29%)	24 (47%)
10 +	34 (67%)	12 (24%)

Thirty four (67%) participants indicated that they would attend more than ten sessions in the semester and only two (4%) participants indicated they would attend less than five sessions during the semester.

**4.3.3 How many PASS sessions did you attend this semester?**

In the post-questionnaire, participants were asked to indicate how many sessions they had attended in the semester. The results of this question are displayed in Table 3 above. As the post-questionnaire was conducted in Week 12 of the semester and PASS began operating in Week 2, students could have attended up to 11 sessions by this stage if they had attended one session a week for every week that had passed.

In contrast to the pre-questionnaire predictions the participants made about their attendance at PASS, only 12 (24%) had attended ten or more sessions and a total of 36 (71%) indicated that they had been to five or more PASS sessions. The number of participants who had been to less than five sessions was 15 (29%).

**4.3.4 If you attended five or more sessions, what motivated you to keep attending?**

As mentioned in 4.3.3 above, 36 of the 51 participants indicated in the post-questionnaire that they had attended five or more PASS sessions. These participants were asked to specify what had motivated them to keep attending.

The participants identified a wide range of motivating factors and these responses have been grouped into themes (see Table 4). The frequency of responses are displayed in Table 4 below. Most participants indicated that a combination of two or three of these factors contributed to their continued attendance.

**Table 4: Motivation for attending five or more PASS sessions**

<b>If you have been to five or more PASS sessions, what motivated you to keep attending? (Post-questionnaire)</b>	<b>Count</b>
Improved understanding, opportunity for revision	18
Extra time for study	9
Importance of passing subject	9
Helpful PASS leader	9
Study tips and strategies	6
Enjoyed interaction with others	5
Got better marks, increased confidence	2
Total responses	58

Of the 36 participants who had been to five or more PASS sessions, 18 indicated that PASS provided an opportunity for revision or clarification of the subject matter and this improved their understanding of the course material. For example, one participant stated that *“It gave a further learning experience to refresh and go over course material.”* Another participant wrote that *“It is a hard*



*subject and going recalled the information that was learned and helped me learn/remember.”*

The opportunity for further clarification is demonstrated in this comment from one participant who wrote, *“PASS session helped me to improve the understanding of BMS101 because there is so much information. PASS sessions make me more clear about what I’m studying”*. These comments demonstrate that the academic support provided by PASS was a motivating factor for students to attend five or more times. Revision and clarification are clearly important considerations for these students.

The desire to improve grades was also indicated as a motivating factor for attending PASS. Responses from participants reflected this, with one participant stating, *“I don’t want to fail”* and another indicating that PASS might provide an opportunity *“to get a better mark in Anatomy”*.

These statements indicate that these participants have a personal desire to improve their mark and PASS may be a way to achieve this goal. One participant mentioned a *“fear of failure”* as a motivating factor whilst another participant rationalised this fear by writing, *“The fact that BMS101 is the most important subject to pass to continue with the degree”*. The fact that BMS101 is a pre-requisite for further subjects in the degree is a driving force for these students. Therefore, students are motivated to attend PASS in order to complete the subject successfully.

Participants also thought that attending PASS was a constructive way of spending extra time at university. Participants commented that PASS *"filled in a one hour break"* and that it helped to *"break up a big gap between classes"*. Additionally, participants noted the positive outcomes they anticipated from spending this extra time in PASS, for example, *"I knew that it could only benefit me to attend and I wouldn't have to spend so much time at home studying"*. These comments demonstrate an awareness of the benefits of attending PASS for Systemic Anatomy.

Participants' positive experiences of PASS were another factor motivating attendance at five or more sessions. Interactions with the PASS leader featured in the responses of nine participants and bring to light the role that the PASS leader has in facilitating learning. This is demonstrated by one participant who wrote *"Great PASS leader who made the sessions interesting, while educating at the same time"*.

Participants indicated that an outcome of attending five or more PASS sessions was that they learnt new ways to study Systemic Anatomy. This made learning easier and prepared them for assessment tasks. Some participants claimed that it was possible to *"get hints or tips on how to remember/learn things"* and that *"easier methods for study"* were learned. One participant noted that the PASS leader supported learning by setting *"things out ... as closely related to the exam style as possible"*. This support is clearly a motivational factor for a number of students undertaking a subject that is perceived as difficult in their first year of university study.

Interestingly, only five participants indicated that the interactions with other students were a motivational factor for attending five or more sessions. Some noted that they *“enjoy[ed] learning with fellow students”* and that *“It was fun/interesting to see where other students were at”*.

Finally, two participants stated that they felt attending PASS had boosted their confidence and helped them to achieve better marks. One wrote: *“I was finding that I was becoming more confident in the course material and my mid-session marks were good so I thought it was working”*. The other noted an increase in *“confidence, [and] good results in mid-semester”*.

#### **4.3.5 If you have been to fewer than five sessions, why was this the case?**

Fifteen participants indicated in the post-questionnaire that they had attended fewer than five PASS sessions. Eleven of these participants indicated that issues relating to time contributed to their lack of attendance. These issues included the time the session was held. For example, one student wrote: *“My PASS time was the last class of my day so I often wanted to go home”*. Another noted that, *“The class I was going to got cancelled and moved to a time I couldn’t attend. All the other classes didn’t really suit my timetable.”*

Some participants indicated that other commitments took precedence over PASS. For example, one participant commented that he *“became too busy with assessments and other activities”* and these interfered with his attendance. For another student, living in Sydney and travelling to the University was time consuming. This participant wrote, *“...it was a lot of travelling to and from uni”*.

*and I couldn't just be there whenever I wanted to". For others, a lack of organisation skills was mentioned. For example, "Didn't organise myself. Would've like (sic) to go".*

Five participants indicated dissatisfaction with PASS as their reason for attending less than five sessions. With reference to the classes, participants made the following observations *"Most of the time I didn't think they were very well organised or helpful"* and, *"I found the classes to be slightly overfilled and perhaps not as well organised. I would have preferred something more structured"*. Another participant noted, *"I didn't find the activities helpful"*.

Some claimed they were not motivated enough to continue going. This is supported by the following comment from a participant who wrote, *"I couldn't be bothered. If my friend didn't go then I usually did not"*.

Finally, two participants indicated that they preferred to study alone and this was their reason for attending fewer than five sessions. One wrote, *"I think I learn better alone finding the answers for myself than hearing the right answers from others"*. The other participant indicated that they made positive use of the time that had been set aside for PASS by *"study[ing] for BMS in the time PASS was on"*.

#### **4.3.6 What made you decide whether to go to a session or not?**

A total of nine participants attended the four focus groups organised by the researcher. When reporting the comments of participants from the focus groups in this chapter the abbreviation "FG" has been used followed by the

number of the focus group in which the comment was made (for example FG1 stands for Focus Group 1). For the purposes of confidentiality, individual participants have not been identified.

To corroborate the data provided by participants in the pre- and post-questionnaires and to gain a deeper insight into why students attend PASS, the participants of the focus groups were asked “*What makes you decide whether to go to a session or not?*” In analysing the answers to this question, several themes emerged and these are reported under two headings: (i) reasons for attending PASS and (ii) reasons for not attending PASS.

***(i) Reasons for attending PASS***

Most of the focus group participants had been regular attendees of PASS during the semester and felt that the onus was on the individual to make the effort to attend. Several comments from participants in the focus groups illustrate this point, for example: “*Why not go if it’s offered to you? Why not take it up and use it?*” (FG2) and “*If I’m free that hour I will go. It’s better than me not going*” (FG2).

One participant described his reasons for being selective with the PASS sessions he attended and stated, “*If I get stuck on something I will make sure I attend, but if I’m just cruising along and I’m finding it fairly easy ... then sometimes I wouldn’t go*” (FG4). This further demonstrates the role the individual has in making the choice to attend.

Not attending a session was viewed as disadvantageous by some participants, who felt that they would “*miss out on heaps*” (FG3) if they didn’t attend because the PASS sessions were very helpful. One participant described her feelings after not being able to attend PASS for a week or two: “*I was craving to get back because I felt I was missing out, I felt I was behind*” (FG1). These comments clearly indicate that a number of participants identified attendance at PASS as beneficial.

Attending PASS because it was an opportunity for extra study of subject material was a common theme amongst the participants and there was agreement between participants that PASS was beneficial for this purpose. This was revealed in a number of statements, particularly: “*You go to the lecture, you go to the tutorial, you go to the lab and it’s another repetition of the subject matter*” (FG1).

The benefit of group study was motivating for one participant who stated, “*It would be an extra hour or two private study at home if you don’t go to it*” (FG2). This indicates that PASS was considered by some as an alternative to private study at home.

Two participants described their commitment to their PASS sessions by placing it in their weekly timetable. One participant stated that “*it’s basically a part of my timetable that I have to go to*” (FG3), which demonstrates the priority they placed upon attending.

## **(ii) Reasons for not attending PASS**

Focus group participants reported that their reasons for not attending PASS mainly related to other priorities and factors beyond their control. For instance, two mature age students who took part in the focus groups commented that familial commitments sometimes took precedence, for example: *"I found a few Friday's I wasn't able to make it because of my children and whatever"* (FG1) and *"I'd been to every one but then I had a sick child so I wasn't able to go one week"* (FG1). In some instances, other course work took precedence as one participant claimed, *"After the exam of late I haven't [been going to PASS] just because we have had so much on"* (FG4).

One focus group participant sympathised with those who chose not to attend because of other commitments by saying, *"I think for example if you have assignments due in or something, then you are pretty discouraged to go to the things you don't have to go to in order to study or finish your assignment"* (FG3).

One focus group participant who had not been a regular attendee of PASS stated that he had been very busy with other things and would like to have attended more PASS sessions. His main concern was the time it took him to travel to and from the University and he stated that, *"I think if I lived a lot closer I would have gotten there almost every week"* (FG4). This supports comments made by participants in the post-questionnaire who indicated that time management played a significant role in their reason for not attending PASS.

Participants in the focus groups agreed that Anatomy was a difficult subject and when probed about why other students might not attend PASS, one participant

observed: “*I think [Anatomy] becomes easier or it doesn’t and I think if it doesn’t become easier as you persevere with it, there could easily be a tendency to [stop coming to PASS]”* (FG1). Interestingly, participants in the post-questionnaire did not report their frustration with the subject matter as a reason for attending less than five PASS sessions.

In summary, the results described above indicate that students are motivated to attend PASS for a number of reasons. These motivations, on the whole, are academic in that, by attending, participants hope to revise subject matter and improve their chances of passing the subject. The majority of participants heard about PASS through email/SOLS mail and/or during a lecture or information session. Overall, participants did not attend as many sessions as they anticipated in the pre-questionnaire. A variety of reasons were given for this, the most significant involving factors related to time and time management.

**4.4 RESEARCH QUESTION 2**

The pre-questionnaire was designed to provide the researcher with an understanding of the participants’ expectations of the PASS program for Systemic Anatomy. These data and data collected in the focus group interviews addressed the second research question:

*What are the expectations of first year Systemic Anatomy students  
who attend PASS?*

In the pre-questionnaire, participants were asked about their understanding and expectations of the PASS program. In relation to expectations, participants were asked to indicate on a five point Likert scale the degree to which they



agreed or disagreed with 17 items contained in the questionnaire. The ratings used in the Likert scale were ‘strongly agree’, ‘agree’, ‘disagree’, ‘strongly disagree’ and ‘don’t know’. For the purpose of analysis, the 17 items were divided into three categories – academic, personal and social. The academic category has been further divided into two sub-categories: meaning-oriented and strategic (Capstick & Fleming, 2004). Results for each category are set out in Tables 5 to 8 below.

#### 4.4.1 Academic: Meaning-Oriented Expectations

Meaning-oriented expectations are those that refer to situations where the student is focussed on achieving greater understanding of the subject material and is involved in the development of analytical thinking (Capstick & Fleming, 2004). The meaning-oriented expectations of participants are set out in Table 5 below.

**Table 5: Meaning-Oriented Expectations**

Item No.	I expect to:	n	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1	Increase my understanding of the subject matter	51	39 (76%)	11 (22%)	0 (0%)	0 (0%)	1 (2%)
2	Have opportunities to clarify basic anatomical concepts	51	36 (71%)	14 (27%)	0 (0%)	0 (0%)	1 (2%)
3	Have opportunities to clarify complex anatomical concepts	51	29 (57%)	20 (39%)	0 (0%)	0 (0%)	2 (4%)
4	Have opportunities to ask questions	51	32 (63%)	18 (35%)	0 (0%)	0 (0%)	1 (2%)

The majority of participants circled either the ‘strongly agree’ or ‘agree’ categories of the meaning-oriented expectations. Indeed, for Item 1 (increase my understanding of the subject matter) and Item 2 (have opportunities to clarify

basic anatomical concepts), 76% and 71% of participants respectively, strongly agreed with these expectations. Additionally, for Item 3 (have opportunities to clarify complex anatomical concepts) and Item 4 (have opportunities to ask questions), over half the participants indicated they strongly agreed with these expectations. No student indicated disagreement with any of these items, and very few were unsure of their expectations. These results indicate that all participants were significantly focussed towards the meaning-oriented aspects of PASS.

#### 4.4.2 Academic: Strategic Expectations

Strategic expectations are those which relate to methods that students can use to improve their grades (Capstick & Fleming, 2004). This includes the sharing of study strategies and techniques as well as participation in exam preparation activities. The strategic expectations of participants are set out in Table 6 below.

**Table 6: Strategic Expectations**

Item No.	I expect to:	n	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1	Be better prepared for assessments and exams	51	30 (59%)	19 (37%)	0 (0%)	0 (0%)	2 (4%)
2	Develop my study skills and learn new study strategies	51	23 (45%)	24 (47%)	0 (0%)	0 (0%)	4 (8%)
3	Practice and refine my use of anatomical terminology	51	29 (57%)	21 (41%)	0 (0%)	0 (0%)	1 (2%)
4	Get better marks in assessment tasks	51	27 (53%)	21 (41%)	0 (0%)	0 (0%)	3 (6%)
5	Have a greater awareness of course expectations	51	18 (35%)	26 (51%)	2 (4%)	0 (0%)	5 (10%)

These results are similar to the meaning-oriented expectations in that the majority of participants circled either the 'strongly agree' or 'agree' categories for these items, however, participant responses are more equally distributed across the two categories. An example of this is Item 2 (develop my study skills and learn new strategies) in which 45% and 47% of participants have indicated that they strongly agreed or agreed with this statement respectively. For Item 1 (be better prepared for assessments and exams) and Item 3 (practice and refine my use of anatomical terminology), the majority of participants strongly agreed with these expectations (59% and 57% respectively). In addition, there was also a greater proportion of participants who were unsure of their expectations in this category compared to the meaning-oriented items.

These high expectations are further supported by the qualitative data taken from the pre-questionnaires and focus group interviews. Question 1 in Section 2 of the pre-questionnaire asks: *"What is your understanding of the way the PASS program supports students at the University of Wollongong?"* In response to this question, participants indicated that PASS primarily provides academic assistance to students and comments from participants contain references to both meaning-oriented and strategic expectations of PASS. Examples of these are detailed below.

Meaning-oriented responses in the pre-questionnaire indicated that the extra hour spent studying Anatomy in PASS would be beneficial. One student wrote, *"Provides an additional time frame devoted to Anatomy and therefore another opportunity to reflect on the information learnt"* (pre-questionnaire). Furthermore, when spending this extra time reflecting on the subject,

participants reported that the learning environment would be one in which they would receive help to revise subject matter in order to develop their understanding of the course content. One participant wrote that it *“helps revise what is learnt in lectures and practicals”* (pre-questionnaire).

Additionally, several participants commented that in PASS they would have the opportunity to ask questions about the course content. One participant wrote that PASS *“helps students in answering questions that are unclear from the lectures”* (pre-questionnaire). More specifically, it was implied by some participants that this would take place in a group environment, distinctly different to that of the lectures. This is emphasised by one participant who wrote, *“Allows a group of students to come together to discuss, question and answer any concerns etc regarding Anatomy”* (pre-questionnaire). This theme was echoed by participants in the focus group interviews, with the addition that in PASS it was possible to *“be able to ask questions in an informal setting and not feel so stupid”* (FG1).

Finally, there was the expectation that PASS would help students by simplifying the subject matter. One participant wrote, *“provide an explanation/understanding of a concept in words or ways that are not too far above your knowledge”* (pre-questionnaire).

In relation to strategic expectations, several participants indicated that they believed that PASS would support them by giving them the opportunity to share study tips and, more specifically, help *“students learn and memorise body parts in an easier way”* (pre-questionnaire). In addition to this, participants

commented that a past student of Anatomy would be facilitating and contributing to this process. In other words, *“a fellow student who has studied the course and done well can explain their own methods for learning the content and study methods”* (pre-questionnaire).

To summarise, these results suggest that participants have high academic expectations across both meaning-oriented and strategic categories. There is a strong focus to develop a greater understanding of the course content coupled with the desire to learn new ways of studying and remembering course material in order to achieve better grades. Therefore, the expectation students have when they enrol in PASS is that by attending they will improve their grades by spending additional time revising the subject matter and that this will take place in an informal setting where they will be at ease.

### 4.4.3 Personal Expectations

Personal expectations reflect what students hope to gain personally from attending PASS. This includes such things as enjoying the learning process, building confidence and improving overall results in the course. The results of these items are set out in Table 7 below.

**Table 7: Personal Expectations**

Item No.	I expect to:	n	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1	Enjoy the learning process	51	13 (25%)	29 (57%)	3 (6%)	0 (0%)	6 (12%)
2	Develop my confidence	51	18 (35%)	24 (47%)	3 (6%)	0 (0%)	6 (12%)
3	Have opportunities to air my concerns away from teaching staff	51	13 (25%)	20 (39%)	9 (18%)	0 (0%)	9 (18%)
4	Improve my results in the course	51	33 (65%)	16 (31%)	0 (0%)	0 (0%)	2 (4%)

The majority of participants reported that they strongly agreed or agreed with the personal expectations of PASS. Participants rated highest their desire to improve their results in the course with 65% of participants reporting they strongly agreed with this item. In relation to Item 1 (enjoy the learning process) and Item 2 (develop my confidence), 57% and 47% of participants respectively indicated that they agreed with these items. In relation to Item 3 (have opportunities to air my concerns away from teaching staff), 25% indicated that they strongly agreed and 39% indicated that they agreed.

Some participants reported that they disagreed with Items 1, 2 and 3 with the largest number (18%) disagreeing with Item 3 (have opportunities to air my concerns away from teaching staff). Additionally, a number of participants indicated that they were unsure about their personal expectations of PASS. Again, the majority in this category were unsure in relation to Item 3 (have opportunities to air my concerns away from teaching staff).

In the pre-questionnaires and focus group interviews, participants made very few references to the ways that PASS would assist them on a personal level. When participants were asked about their reasons for enrolling in PASS in the focus group interviews, the responses indicated that they had been warned by academic staff and other students that Systemic Anatomy was “*really hard*” (FG3) and that PASS would improve their chances of success in the course (FG1, FG4). A personal expectation therefore would be to improve their results in the course. In support of this, one focus group participant indicated that her

reason for enrolling in PASS was to *“get a better mark than I would have gotten if I didn’t attend”* (FG3).

There was some indication that the PASS leader’s experience in the subject would enhance the learning process. One participant wrote: *“2<sup>nd</sup>/3<sup>rd</sup> year students guide us as to what to expect in the subject, help with revision and give tips on how best to study Anatomy”* (pre-questionnaire). In addition, the personal experience of the PASS leader would provide a fresher perspective and deeper insights. One participant wrote, *“Provides the students with another different perspective beside the lecturers and demonstrators (sic)”* (pre-questionnaire), and another wrote, *“Gain insight from someone who has already completed the subject”* (pre-questionnaire).

It is important to remember that a number of participants were unsure of or in disagreement with the personal expectations of PASS. These aspects would not have been included when they described their understanding of how the PASS program supports students at UOW.

#### **4.4.4 Social Expectations**

The peer assisted learning environment of PASS means that students will be learning in smaller groups to revise subject matter. This provides students with opportunities to interact with each other and potentially create a supportive learning environment. Participants’ social expectations of PASS are detailed in Table 8 below.

**Table 8: Social Expectations**

Item No.	I expect to:	N	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1	Meet other people in my course	51	12 (23%)	34 (67%)	3 (6%)	0 (0%)	2 (4%)
2	Interact with other students in the learning environment	51	19 (37%)	28 (55%)	1 (2%)	0 (0%)	3 (6%)
3	Gain assistance with settling into university	51	6 (12%)	23 (45%)	16 (31%)	0 (0%)	6 (12%)
4	Develop a bond with others in my PASS group	51	10 (20%)	29 (57%)	4 (8%)	0 (0%)	8 (15%)

The majority of participants strongly agreed or agreed with the social expectations of PASS. Participants rated as highest Item 1 (meet other people in my course) and Item 2 (interact with other students in the learning environment) with 23% and 37% reporting that they strongly agreed and 67% and 55% reporting that they agreed with these items respectively.

Sixteen (31%) participants indicated that they disagreed with Item 3 (gain assistance with settling into university) and a further 12% were unsure about their expectations in relation to this item. This is interesting to note, as assisting students with settling into university is one of the aims of the PASS program (Rogan, 2004). In addition, 15% were unsure about Item 4 (develop a bond with others in my PASS group) and 8% indicated that they disagreed with this item.

Of all the categories for which results were recorded – academic, personal and social – the social expectation category was the only one in which participants recorded some level of disagreement across all items contained within it.



In the pre-questionnaires and focus group interviews, few references were made to the social expectations of PASS. The data indicate that any comments relating to social expectations were firmly associated with academic expectations. For example, in a pre-questionnaire, one participant wrote that PASS *“Allows students to interact and help each other to share knowledge and pass the subject”*. For some it appeared that the interactions taking place between students would be directly related to improving their understanding of the subject matter and getting better grades.

Two participants indicated that these interactions would promote a level of comfort with their peers and in turn further facilitate the learning process. Illustrating this is the comment of one participant who wrote, *“It is among people at the same level as us and makes us feel comfortable while giving us a good group study session”* (pre-questionnaire).

In summary, the above data indicate that participants have high expectations of PASS across all three categories – academic, personal and social. Of these three categories the highest relate to academic expectations, for example increasing their understanding of the subject matter, clarifying anatomical concepts and practicing and refining their use of anatomical terminology. Almost all expect that PASS will improve their results in the subject and that they will interact with other students in the learning environment. These expectations are clearly supported by the qualitative data collected in the focus group interviews and pre-questionnaires.

4.5 RESEARCH QUESTION 3

The post-questionnaire was designed to provide an insight into the experiences of students attending PASS for Systemic Anatomy. By comparing these findings with pre-questionnaire data, the researcher can gain an understanding of the degree to which participant expectations were met. Using this information and combining it with data collected from the observations and focus group interviews, the researcher is able to answer the third research question:

*What are the academic, personal and social experiences of first year Systemic Anatomy students who attend PASS at the University of Wollongong?*

In the post-questionnaire, participants were asked about their experiences of the PASS program. Participants were asked to indicate on a five point Likert scale the degree to which they agreed or disagreed with 17 items contained in the post-questionnaire. The ratings used in the Likert scale were ‘strongly agree’, ‘agree’, ‘disagree’, ‘strongly disagree’ and ‘don’t know’. For the purpose of analysis, these items were divided into three categories – academic, personal and social. The academic category has been further divided into two sub-categories: meaning-oriented and strategic (Capstick & Fleming, 2004). Results for each category are set out in Tables 9 to 12 below.

The responses from 50 of the 51 participants have been included in these results as one participant did not attend any PASS sessions and therefore did not complete this section of the post-questionnaire.

4.5.1 Academic: Meaning-oriented Experiences

Meaning-oriented experiences refer to situations where the student was focussed on achieving greater understanding of the subject material and was involved in the development of analytical thinking (Capstick & Fleming, 2004). The results of the meaning-oriented experiences of participants are set out in Table 9 below.

Table 9: Meaning-Oriented Experiences

Item No.	By attending PASS, I	n	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1	Increased my understanding of the subject matter	50	10 (20%)	33 (66%)	6 (12%)	0 (0%)	1 (2%)
2	Had opportunities to clarify basic anatomical concepts	50	13 (26%)	35 (70%)	2 (4%)	0 (0%)	0 (0%)
3	Had opportunities to clarify complex anatomical concepts	50	12 (24%)	29 (58%)	8 (16%)	0 (0%)	1 (2%)
4	Had opportunities to ask questions	50	18 (36%)	29 (58%)	3 (6%)	0 (0%)	0 (0%)

The majority of participants either strongly agreed or agreed with the meaning-oriented experiences. Indeed, for Item 1 (increased my understanding of the subject matter) a total of 86% and for Item 2 (had opportunities to clarify basic anatomical concepts) a total of 96% of participants indicated that they strongly agreed or agreed with these experiences. Additionally, for Item 3 (had opportunities to clarify complex anatomical concepts) a total of 82% and for Item 4 (had opportunities to ask questions) a total of 94% of participants indicated that they strongly agreed or agreed with these experiences.

For each of the meaning-oriented items, a small percentage of participants indicated that they disagreed. In particular, for Item 3 (had opportunities to

clarify complex anatomical concepts), 16% reported their disagreement with this statement. Of note, none of the participants indicated that they strongly disagreed with any of the meaning-oriented items.

Interestingly, in the post-questionnaire, even though there was agreement in relation to these items from participants, there was a shift from 'strongly agree' to 'agree' in the scale when compared with the expectations indicated by participants in the pre-questionnaire (see Table 5).

To provide greater insight into the meaning-oriented experiences of students attending PASS, qualitative data from the focus group interviews, observations and post-questionnaire are set out below. A number of participants indicated that by attending PASS they increased their understanding of the subject matter. This came about through several means as described in the comments of participants. Firstly, by spending the additional time reviewing the course content, participants were better able to remember what was being taught in the lectures and laboratory sessions. To illustrate this, one participant commented that, "*the more you learn something, the better you remember it*" (FG3). The extra time spent reviewing the course content in PASS was important because, as several participants commented, the lecturer was "*hard to keep up with*" (FG2) and the large volume of material covered was "*so overwhelming*" (FG1).

Secondly, the participants spoke about the way the PASS sessions assisted in their understanding of the subject matter by "*having that person explain it in their words, in their terms*" (FG3). This process of having concepts explained in

simpler terms by the PASS leader or other students in the group was reported by several participants.

Finally, by revising the subject matter, participants found what they did know but also identified the things they did not know. As one participant stated, *“you find stuff that you don’t know and you can move on to study that at home”* (FG3). This process enabled students to see where they needed to focus their studies and further develop their understanding of the subject matter.

The observations of PASS demonstrated this process in action. In one session, students undertook a mock exam that involved moving around the room where a number of stations had been set up with photocopies of anatomical structures. The students were required to identify the structures that had been marked and, after a set period of time, move on to the next station. This process gave students the opportunity to identify the structures that they knew and enabled them to discover the structures they had difficulty identifying.

Participants commented that PASS provided them with opportunities for clarification of subject matter. The PASS leader supported student learning of the subject matter by helping to *“clarify areas of uncertainty”* (post-questionnaire) and reinforcing this understanding by *“go[ing] over stuff that you already know to make sure you really know it”* (FG3).

In addition, the opportunity to ask questions featured among the comments of participants in the focus groups and in the post-questionnaires. By asking questions it was then possible to discuss the answers *“with everyone else”*

(FG2) in the group. Additionally, as the PASS sessions were small in number, one participant commented that, *“it was easier to ask questions [in PASS] than join the queue of people asking demonstrators questions”* (post-questionnaire).

From the results, it appears that PASS provided the opportunity for a large number of meaning-oriented experiences. These experiences are reflective of the high expectations that participants had of PASS as reported in section 4.4 of this chapter.

### 4.5.2 Academic – Strategic Experiences

Strategic experiences are those that refer to situations where the student was focussed on discovering methods to improve their grades (Capstick & Fleming, 2004). This would include sharing study strategies and techniques and participation in exam preparation activities. The results of the strategic experiences of participants are set out in Table 10 below.

**Table 10: Strategic Experiences**

Item No.	By attending PASS, I	n	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't know
1	Was better prepared for assessments and exams	50	6 (12%)	28 (56%)	10 (20%)	2 (4%)	4 (8%)
2	Developed my study skills and learnt new study strategies	50	11 (22%)	26 (52%)	11 (22%)	1 (2%)	1 (2%)
3	Practiced and refined my use of anatomical terminology	50	9 (18%)	36 (70%)	4 (8%)	1 (2%)	0 (0%)
4	Got better marks in assessment tasks	50	3 (6%)	24 (48%)	12 (24%)	2 (4%)	9 (18%)
5	Had a greater awareness of course expectations	50	10 (20%)	26 (52%)	9 (18%)	0 (0%)	5 (10%)

These results indicate that the majority of participants strongly agreed or agreed that PASS provided them with opportunities for strategic learning experiences. Indeed, for Item 3 (practiced and refined my use of anatomical terminology), 70% of participants agreed with this statement. For Item 2 (developed my study skills and learnt new study strategies) and Item 5 (had greater awareness of course expectations), approximately 70% of participants indicated they strongly agreed or agreed with these statements.

For each of the strategic items above, a number of participants indicated that they strongly disagreed or disagreed with these statements. In particular, 20% for Item 1 (was better prepared for assessments and exams), 22% for Item 2 (developed by my study skills and learnt new study strategies) and 24% for Item 4 (got better marks in assessment tasks) indicated that they disagreed with these statements. Additionally, for Item 4 (got better marks in assessment tasks), 18% were unsure about whether they agreed or disagreed with this item.

When comparing these results with those in the pre-questionnaire, fewer participants indicated that they strongly agreed with these items. However, the number of participants who agreed with these items either remained steady or rose slightly (see Table 6). There has been a negative shift from expectations to experiences across all items, with a number of participants indicating that they strongly disagreed or disagreed that PASS provided them with strategic learning experiences.

Qualitative data from the focus group interviews, observations and post-questionnaires provide greater insight into the strategic experiences of

students attending PASS. Participants discussed several methods that were used in PASS to practice for the mid-semester exam and indicated that these methods were successful and useful ways to prepare. To support this, one participant stated that *“the methods that [PASS leader] used to help us revise, I used to study for my mid-semester exam”* (FG1). Another participant went on to claim that PASS *“prepares you for the exam and makes it a lot easier and less stressful because you know how everything has to be approached”* (FG3).

Study skills and strategies were developed in the PASS sessions with the assistance of the PASS leader. As one participant explained, *“they just give you little rhymes to remember things which really helps with your study and then that sort of teaches you to sort of make up your own rhymes”* (FG3). It was not only the PASS leader who contributed to this process. One participant stated in the post-questionnaire that, *“I also found out different ways to remember things from other students”*. Evidence of this process was present in one of the observed PASS sessions in which the leader discussed with the students a number of acronyms that can be used to remember different muscle groups. For example, the phrase *“Put Sausages On Ice Quick”* was repeated several times during the session to help students remember the muscles of the hip.

The PASS leaders were also observed in the sessions giving tips to students about how to remember certain anatomical structures. For example one leader informed the group *“go back and check you know how to find it on a cadaver”* and *“make sure you know where [the sciatic nerve] is in relation to the muscles around it”*. Another PASS leader referred to this method of using landmarks to identify structures. She prompted the students to consider the following



question: *“What are the hints, tricks or features I know about that nerve? ... is it going along a bone or between two muscles?”* and reminded the students that keeping these things in mind would be helpful in being able to identify structures in an exam.

As described above, the majority of participants indicated that they practiced and refined their use of Anatomical terminology in PASS. Comments from the participants detail several methods used for this purpose. For example, the “[PASS leader] *did a lot of diagrams up on the overhead that were numbered and then we went around the room one by one and you had to name what that number was*” (FG1) and, *“they gave us pieces of paper, one which said muscles and another group that said insertions and origins and you just had to match them all up together”* (FG3)

During the observations of PASS, other activities in which students practiced and refined their use of Anatomical terminology were noted. The mock exam described earlier is one such example. Other examples included the creation of a table by the students identifying the cranial nerves and their functions, the practice of a specific study technique that involved identifying and memorising anatomical structures and discussions in the session about various acronyms that can be used to remember the order of certain muscle groups in the body.

The results show that the majority of participants indicated that by attending PASS they developed a greater awareness of course expectations. The expectation to read and understand the large volume of material presented in the textbook was a concern expressed by students in the focus group interviews

and during the observations of PASS. One participant stated, *"It's a little bit confusing, particularly with the text book, there is so much stuff in there and you think how much of this do I actually have to know?"* (FG1). Participants reported that they were guided by the PASS leader who identified what they needed to know as well as what they did not need to know. An example of this was observed in one of the PASS sessions where the leader stated, *"the textbook gives really good detailed description of the nerves. Know the differences but don't worry about too much detail."*

A further concern for participants was knowing what would be expected of them when completing assessment tasks and, in relation to this, one participant stated that *"PASS ... provided more information about what was expected of me in assessments"* (post-questionnaire). The observations undertaken of PASS demonstrated how students went about developing a greater awareness of course expectations and tried to prepare for assessments and exams. From the two sessions that were observed before the mid-session exam it was noted that students posed several questions to the PASS leader in relation to the examination process. For example, they wanted to know how many spelling mistakes they could make when naming anatomical structures, how much time they would have to identify the structures at each station and whether or not they would be instructed to move on or if they could do so on their own.

Finally, some participants correlated their PASS attendance to the marks they achieved in their mid-semester exam. Two participants attributed their marks directly to PASS by saying, *"I think that it helped my marks so much just with mid-session"* (FG3) and, *"I would say that PASS did help me to do well in my*

*mid-semester*” (post-questionnaire). Interestingly, one participant who did not achieve as well as anticipated in the mid-semester exam claimed that PASS “*probably helped me not fail as bad*” (FG2).

Overall, these results indicate that participants experienced significant academic meaning-oriented and strategic gains from their attendance at PASS. However, the high academic expectations that participants had of PASS across both sub-categories were not entirely realised when compared to their experiences.

### 4.5.3 Personal Experiences

Personal experiences relate to what students gained from attending PASS. This includes such things as enjoyment of the learning process, building of confidence and improved overall results in the course. The results of these items are set out in Table 11 below.

**Table 11: Personal Experiences**

Item No.	By attending PASS, I	n	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1	Enjoyed the learning process	50	3 (6%)	38 (74%)	7 (14%)	1 (2%)	1 (2%)
2	Developed my confidence	50	3 (6%)	26 (52%)	15 (30%)	0 (0%)	6 (12%)
3	Had opportunities to air my concerns away from teaching staff	50	8 (16%)	18 (36%)	13 (26%)	1 (2%)	10 (20%)
4	Improved my results in the course	50	5 (10%)	24 (48%)	11 (22%)	2 (4%)	8 (16%)

These results indicate that the majority of participants strongly agreed or agreed with the statements relating to their personal experiences of PASS. Indeed, for

Item 1 (enjoyed the learning process), 80% of participants stated that they strongly agreed or agreed with this statement.

For each of the personal experiences in the table above, a number of participants indicated that they disagreed or strongly disagreed with these items. Specifically, 30% for Item 2 (developed my confidence), 28% for Item 3 (had opportunities to air my concerns away from teaching staff) and 26% for Item 4 (improved results in the course) indicated that they either disagreed or strongly disagreed with these statements. In addition, for Item 3 (had opportunities to air my concerns away from teaching staff) and Item 4 (improved my results in the course), 20% and 16% respectively were unsure as to whether they agreed or disagreed with these items.

There are some interesting trends when comparing post-questionnaire experiences to pre-questionnaire expectations. For example, with regard to Item 4 (improve my results in the course), there was a negative shift when comparing expectations to experiences. In the pre-questionnaire, 65% indicated that they strongly agreed with this as an expectation of PASS, with an additional 31% who agreed (see Table 7). In the post-questionnaire however only 10% indicated that they strongly agreed and 47% indicated that they agreed that PASS improved their results in the course.

In relation to Item 2 (developing my confidence), pre-questionnaire expectations were high with 25% who strongly agreed and 47% who agreed with this item. In comparison, the post-questionnaire results show that a significant number of participants (30%) indicated that they disagreed that PASS had helped in

developing their confidence. Finally, with regard to airing concerns away from teaching staff, the pre-questionnaire expectations did not differ greatly when compared with the post-questionnaire experiences (see Table 7) with 64% of participants indicating that they strongly agreed or agreed in the pre-questionnaire and 52% indicating that they strongly agreed or agreed in the post-questionnaire.

To substantiate these findings, qualitative data from the focus group interviews, observations and post-questionnaires will be considered. Several comments from participants indicated the positive experiences they had in PASS and how the PASS leader facilitated the learning environment to make it fun and interesting. One participant stated that “[the PASS leaders] *are really friendly and they are willing to help*” (FG3) and another participant claimed that “*with the activities it just makes it more interactive and it just stimulates, instead of someone just talking to you*” (FG3). This comment indicates that students utilise learning strategies in PASS that are very different to those in the lectures. A number of these learning strategies that were observed in the PASS sessions have been described in the previous section under Academic Experiences.

In one of the focus groups, the participants attested to their enjoyment of the learning process and to the fact that the learning environment of PASS was “*very encouraging*” (FG1). One participant went on to state that “*the enjoyment of ... knowing it in the end ... of it actually sinking in*” (FG1) was a highlight for her. Some participants indicated that PASS made them feel comfortable and that this was the result of several factors such as the informal learning environment and the facilitation provided by the PASS leader. One participant

in the post-questionnaire wrote, *“The informal setting was great and knowing that other students were having the same problems I was helped.”* Another participant stated in a focus group, *“I think after the first couple [of PASS sessions] you realise you’re not going to be made to look silly if you get it wrong and it’s OK to get it wrong”* (FG1).

As PASS sessions are informal, small group learning environments, there is the opportunity for students to discuss concerns away from teaching staff. These discussions focus not only on the subject matter but also on concerns relating to the subject such as how to approach assessments and cope with the volume of material. As one participant stated, PASS *“gives you the opportunity to discuss things. You hear other people saying their concerns and you find out that your concerns are the same as theirs”* (FG1). In the observations of the PASS sessions undertaken by the researcher, students raised a number of concerns. In particular, when discussing how to identify nerves on the cadavers, one student exclaimed that *“some of [the nerves] were easy to see ... for others it’s hard to tell which is the nerve, artery or vein.”* Another student was concerned that being unable to touch the cadavers during the practical exam would make the identification process more difficult, especially if the cadaver was presented in an unusual position.

Finally, a number of participants indicated in the post-questionnaire and focus group interviews that attending PASS had improved their marks. Some participants also stated that had they attended more sessions this would have had a greater impact on their performance in the subject. One participant directly attributed his or her marks in the subject to PASS by commenting in the

post-questionnaire that PASS “helps me to understand the subject material better and gain a better mark”.

Overall, these results indicate that many participants in PASS enjoyed the learning process, developed their confidence, had opportunities to share concerns and improved their results in the course. A number of participants however, indicated that these experiences were not realised through PASS.

4.5.4 Social Experiences

As students revise subject matter in small groups during PASS, they are provided with opportunities to interact with each other and potentially create a supportive learning environment. The social experiences of participants are detailed in Table 12 below.

Table 12: Social Experiences

Item No.	By attending PASS, I	n	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1	Met other people in my course	50	3 (6%)	37 (74%)	8 (16%)	1 (2%)	1 (2%)
2	Interacted with other students in the learning environment	50	5 (10%)	39 (78%)	4 (8%)	1 (2%)	1 (2%)
3	Gained assistance with settling into university	50	4 (8%)	20 (40%)	16 (32%)	4 (8%)	6 (12%)
4	Developed a bond with others in my PASS group	50	3 (6%)	24 (48%)	13 (26%)	3 (6%)	7 (14%)

The results reveal that there is a distinct divide between the outcomes for the items in this category. As indicated in the table above, 80% of participants either strongly agreed or agreed with Item 1 (met other people in my course) and 88% of participants strongly agreed or agreed with Item 2 (interacted with other students in the learning environment). In contrast, only 48% of

participants strongly agreed or agreed with Item 3 (gained assistance with settling into university) and 54% of participants strongly agreed or agreed with Item 4 (developed a bond with others in my PASS group). Also, a considerable number of participants indicated that they disagreed or strongly disagreed with Items 3 and 4 – 40% and 32% respectively. Furthermore, 12% of participants for Item 3 and 14% of participants for Item 4 indicated that they did not know if PASS provided them with the opportunity for these social experiences.

Interestingly, these results indicate that the social experiences of participants are consistent with the pre-questionnaire expectations. Indeed, for Item 3 (gain assistance with settling into university), the experiences almost mirror the expectations of participants (see Table 8) and indicate only a slightly negative shift away from what was expected by participants.

Most participants agreed that they met other people in their course (Item 1) and were provided with opportunities to interact with other students (Item 2). There was however a small number of participants who indicated that they disagreed with these items and this indicates a negative shift when compared to pre-questionnaire expectations.

The qualitative data from the focus group interviews, observations and post-questionnaires provide further insight into the social experiences of participants in this study. The focus group participants stated that they had met other people in their course as a result of attending PASS, with one participant claiming to have met someone who was from the same region of northern NSW. Conversely, one participant shared disappointment at not having met



many other people in their PASS session by saying that *“meeting people and all that hasn’t really happened, and the people that I go to PASS with are people that I know”* (FG3).

Participants reported that they had many opportunities in PASS to interact with other students in the learning environment. As one participant explained, the PASS leader *“always breaks people up into groups and she will just give you a task ... so you just have to talk to everyone”* (FG3). Other comments on the benefits of these interactions were, *“I normally like to work by myself but I don’t mind [working in groups] because [Anatomy is] so hard”* (FG 2) and, *“[I like] working with other people because two brains are usually better than one”* (FG2). The benefit of the group learning process was described by another participant who said it *“help[s] with motivation”* (post-questionnaire).

In contrast, two participants explained that in relation to interactions with other students, PASS did not live up to their expectations. Their comments were that PASS was *“not as interactive as I would have hoped”* (post-questionnaire) and, *“there didn’t seem to be much group interaction”* (post-questionnaire). One focus group participant commented that he liked *“the group work and the interaction with the other students”* (FG3), however he was not as impressed with the interaction from the leader.

The observations of PASS also provide mixed results in relation to the interactions between the students. For example, in one session where six students were present, the PASS leader facilitated the students in working as a group to create a table outlining the cranial nerves and their functions. After this

activity, the leader gave the students a diagram of the peripheral nervous system and asked them to label the nerves. During this activity the room was silent and no verbal interactions took place between the students. In another session, students worked individually on a mock exam and, after a group discussion of the answers, the leader split them up into groups of two or three to complete a worksheet that involved labelling the various muscles of the leg. It was noted by the researcher that although some groups were working together to complete the worksheet, other groups did not interact and the students appeared to be working as individuals.

To summarise, these results demonstrate that during PASS the majority of participants had opportunities to meet other people in their course and interact with other students in the learning environment. Despite this, some participants indicated their PASS experiences did not assist them with settling into university or in developing a bond with others in their PASS group. Additionally, there were mixed feelings expressed by participants in the focus group interviews in relation to meeting other people and interacting with other students in PASS.

#### **4.5.5 Overall Satisfaction with the PASS Program**

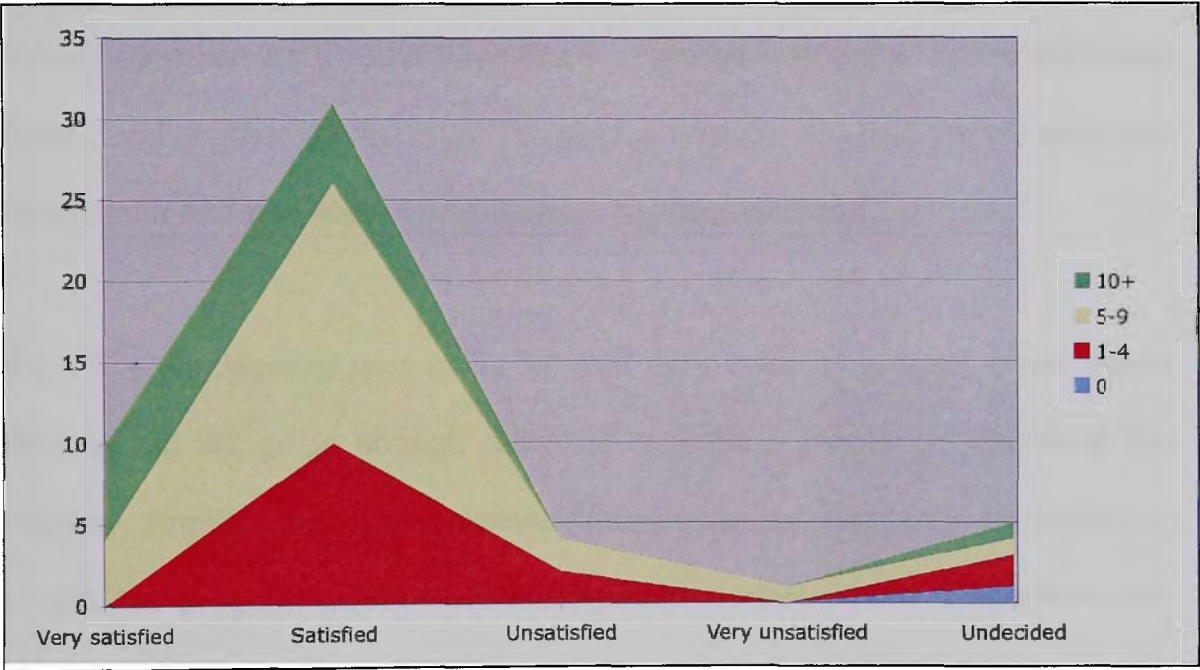
In the post-questionnaire, participants were asked to indicate on a Likert scale their overall level of satisfaction of the PASS program for Systemic Anatomy and to explain their answers. The ratings used in the Likert scale were 'very satisfied', 'satisfied', 'unsatisfied', 'very unsatisfied' and 'undecided'. The reported level of satisfaction in relation to the number of sessions attended by the participants is displayed in Table 13 below.

**Table 13: Level of satisfaction with PASS in relation to number of sessions attended**

No. of sessions	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Undecided
0	0	0	0	0	1
1-4	0	10	2	0	2
5-9	4	16	2	1	1
10+	6	5	0	0	1
Total	10 (20%)	31 (60%)	4 (8%)	1 (2%)	5 (10%)

This information is also presented graphically in Graph 1 below.

**Graph 1: Level of satisfaction in relation to number of sessions attended**



The results indicate that 80% of participants were very satisfied or satisfied with PASS and that most of these participants had attended five or more sessions. Comments from participants who were very satisfied or satisfied with PASS focussed on a number of characteristics that have been described in the sections above regarding the academic, personal and social experiences of participants. A number of comments focussed on how PASS provided

opportunities for revision and clarification of the subject matter and that by attending they increased their understanding of the subject matter. Comments were made about the opportunities PASS provided for learning new study skills and strategies and the interactive activities that made studying easier. A number of participants also made mention of the small group study environment that *“was relaxed”* and how this made it easier to discuss the subject matter.

Comments from participants who were unsatisfied or very unsatisfied with PASS indicated that the PASS sessions were not very well organised and they had higher expectations of the PASS leader and how the sessions would be facilitated. One participant wrote *“in the PASS session I don’t feel like I was learning as much as I would have liked ... not as interactive as I would have hoped”*, and another claimed that *“the person who ran the PASS class was very unorganised and she always spoke about her ‘big weekend’.”*

Of the five participants who indicated that they were undecided, three stated that they did not go to enough sessions to make a proper judgement of the program. Another participant claimed *“there were good aspects”* to PASS but thought the program would have had greater benefit had she attended with some friends.

Participants were also asked to describe anything they would like to see improved or developed in relation to PASS. Not all participants responded to this question however, the comments made by those participants who did respond were constructive. Some of their comments highlighted that more theory should be covered rather than the strong focus on the practical

component of Systemic Anatomy. Some participants wanted “*more practice tests*” and “*more group interaction and getting people involved*” during the sessions. Others requested that at least one PASS session should be “*held in the lab or in the computer room next to the labs*” to make use of the anatomical models. There was also a suggestion that the Biomedical Science students and Physical and Health Education students have separate PASS sessions “*because their work doesn’t correlate exactly to each other.*”

#### 4.5.6 PASS Program Statistics

Student Services at UOW compile statistical reports for each of the subjects for which PASS is offered. These reports summarise the number of sessions students attend in relation to their final course grades. Copies of these reports can be found at Appendix J and Appendix K. Appendix J contains reports for BMS101 and EDUP131 students enrolled in Systemic Anatomy in 2004. Appendix K contains reports for BMS101 and EDUP131 students enrolled in Systemic Anatomy in 2005.

A comparison of the PASS program statistics for 2004 and 2005 show some interesting results. Table 14 below displays the number of PASS sessions attended by students enrolled in Systemic Anatomy in 2004 and 2005.

**Table 14: Number of PASS sessions attended by Systemic Anatomy students in 2004 and 2005**

Year	No. of PASS sessions attended				Total students Enrolled
	0	1 to 4	5 to 9	10 +	
2004	135 (33%)	124 (30%)	106 (26%)	47 (11%)	412 (100%)
2005	131 (41%)	96 (30%)	69 (21%)	26 (8%)	322 (100%)

These results show that when compared with 2004 there was a drop in the number of students attending PASS for this subject in 2005, with 59% of students attending one or more sessions compared to 67% in 2004. In 2004, 36% of students enrolled in Systemic Anatomy attended five or more PASS sessions whereas in 2005 only 29% of students attended five or more PASS sessions.

Table 15 below displays the data relating to the number of Fail grades recorded in the subject compared to the number of PASS sessions attended. The final column shows, as a percentage, the total number of students who failed Systemic Anatomy in that year.

**Table 15: Number of students who failed according to the number of PASS sessions attended and percentage of total enrolments**

Year	No. of Fail grades according to no. of PASS sessions attended					Total enrolments	% of total enrolments
	0	1 to 4	5 to 9	10 +	Total		
2004	31	19	3	1	54	412	13%
2005	36	20	5	1	62	322	19.25%

In 2004 a total of 54 students failed Systemic Anatomy. This was 13% of the total number of students enrolled in the course. In 2005, 62 students failed Systemic Anatomy, which was 19.25% of the total course enrolments. For both years, students who attended five or more PASS sessions were less likely to fail.

## **4.6 CHAPTER SUMMARY**

This chapter analysed the results of the data gathered in order to answer the overarching research question. These data provide answers to the sub-questions and enable the researcher to address the overarching research question through a discussion of these results. The combination of quantitative and qualitative data gathered from pre-questionnaires, post-questionnaires, focus group interviews, observations and statistical reports strengthens the quality of the results. Consequently, the data contained in this chapter inform the reader about the expectations and experiences of the case study group of first year Systemic Anatomy students attending PASS in 2005.

# **Chapter Five**

## **DISCUSSION**

### **5.1 INTRODUCTION**

The purpose of this study was to explore the experiences of first year Systemic Anatomy students attending PASS at UOW. Using a case study methodology, data were collected using pre-questionnaires, post-questionnaires, observations and focus group interviews. In addition, statistical data outlining final course grades in relation to the number of PASS sessions attended were analysed.

The aim of this chapter is to interpret the results presented in the previous chapter and to make recommendations for the future. In order to address the main research question, the key issues and major conclusions to be drawn from the data are discussed in relation to each of the sub-questions.

### **5.2 RESEARCH QUESTION 1**

<b>Why do first year Systemic Anatomy students choose to attend PASS?</b>
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When questioned about their reasons for attending PASS, participants gave a wide range of responses. In particular, there were a number of perceived benefits associated with PASS including increased understanding of the subject matter, learning new study skills and strategies and the provision of opportunities to ask questions in a non-threatening environment. Participants had also been informed that Systemic Anatomy was a difficult subject with a high failure rate. Many students believed that attending PASS would be a good



strategy to get them through the subject successfully because academic staff and other UOW students had emphasised the benefits of attending.

In relation to the number of PASS sessions attended by participants, it is interesting to note that the majority of participants did not attend as many sessions as they predicted. In the pre-questionnaire, the majority (96%) of participants indicated that they would attend five or more sessions during the semester. Compared with the post-questionnaire, only 71% of participants indicated that they had attended five or more sessions.

Martin and Arendale (1992) note that a key feature of PASS is that it is non-remedial and attendance at the sessions is voluntary. Due to the voluntary nature of the program, students are not forced to attend but can go when they believe they need assistance. The results of this study indicate that this is the case, with some participants claiming that they attended only when they were “*stuck on something*” (FG4). However, some participants were more diligent in their attendance patterns by making their PASS session part of their weekly university timetable.

Students who were not regular attendees of PASS, or those who attended less than five sessions, gave a number of reasons for this. Some participants prioritised other course work such as assignments and exams over attendance at PASS as these were assessable components of their degree studies whilst PASS was not. Some participants, who were dissatisfied with the way the PASS sessions ran, did not continue to attend because of these negative

experiences. Others preferred to study alone or chose not to attend, stating that they were not motivated, especially if their friends were not going.

Scheduling of PASS sessions in the timetable determined whether or not some students would attend. If the session was before compulsory classes or after the last class of the day, participants were more likely to arrive late or leave early and not attend. Some participants who lived further from UOW, in the Sydney region, spent more time travelling to and from the campus and they indicated that this impinged on their ability to attend PASS.

There are a number of recommendations that can be made to assist students in overcoming these barriers to attend PASS and to increase regular attendance at sessions. These recommendations are noted below.

- ***Timetabling PASS sessions in between compulsory classes***

Some participants indicated that they would not attend if there was no other reason for them to be on campus. By scheduling PASS sessions between compulsory classes, students would be able to use PASS to fill in breaks between other classes. Some students who had large breaks between classes indicated that attending PASS was a constructive way to fill in these breaks.

- ***Offering PASS at the University of Wollongong Loftus campus for students who live in Sydney***

The Loftus Education Centre is “a joint initiative of the University of Wollongong, the Sydney Institute of TAFE and Sutherland Shire Council”

(University of Wollongong, 2005b) and is located in southern Sydney. Offering PASS sessions to students from Sydney at the Loftus campus could make them more accessible to those students who commute to the main campus from Sydney or southern Sydney.

- ***The creation of an online PASS discussion group***

Providing students with access to PASS when they are not on campus may alleviate some of the time management problems that interfere with attendance at PASS. The creation of an online PASS discussion group that students could log into for the purpose of accessing activities and engaging in online discussion with other students, facilitated by the PASS leader, could be another way of enabling students to access PASS without having to be on campus.

- ***Ongoing encouragement to attend PASS by the subject lecturer***

Participants in this study indicated that being informed about PASS by the subject lecturer had a significant impact on their decision to enrol in PASS for this subject. Therefore, continuing encouragement from the subject lecturer and other academic staff to remind students of the benefits of PASS could be effective. As demonstrated in the research by Webster and Dee (1997), ongoing encouragement from the course instructor greatly influenced students' decisions to attend PASS.

- ***Encouraging students to attend different PASS sessions early in the semester to find a leader with whom they can connect***

A number of participants in this study indicated that they were not satisfied with the way that the PASS sessions were run and did not continue to attend. As there are a number of different PASS leaders for this subject, it may be worthwhile recommending to students that they attend different PASS sessions early in the semester to find a leader they can connect with or whose style of facilitation meets their expectations. Students would be reminded of the availability of other sessions throughout the subject, encouraging them to seek alternative sessions if required.

### **5.3 RESEARCH QUESTION 2**

<p><b>What are the expectations of first year Systemic Anatomy students who attend PASS?</b></p>
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The results of this study indicate that participants had very high expectations of PASS across all three categories: academic, personal and social. To account for these high expectations, research by McInnis and James (DETYA, 1999) indicates that first year students are often very optimistic in regard to their expectations of the learning environment. Taking this into consideration, it is likely that the expectations of participants in this study were overly optimistic.

#### **5.3.1 Academic Expectations**

The academic expectations of students were divided into two categories: meaning-oriented and strategic. Meaning-oriented expectations relate to situations where students are focussed on achieving greater understanding of the subject matter and developing analytical thinking whereas strategic

expectations relate to situations where students work on recognising and using methods to achieve good grades (Capstick & Fleming, 2004).

The meaning-oriented expectations of participants in this study were extremely high. The items contained in the questionnaire relating to meaning-oriented expectations were:

- increase my understanding of the subject matter;
- have opportunities to clarify basic anatomical structures;
- have opportunities to clarify complex anatomical structures; and
- have opportunities to ask questions.

Nearly all participants indicated that they agreed with these items and the one or two participants who did not agree had marked the 'don't know' column on the questionnaire. The data from the pre-questionnaire and focus group interviews revealed that participants expected PASS to be a time for revision of subject matter and provide opportunities for them to further develop their understanding of the course content. The participants anticipated that the informal group setting of PASS would provide opportunities for them to ask questions about the subject matter and not feel awkward or self-conscious doing so.

In line with the meaning-oriented expectations, the strategic expectations of participants were also high. The items contained in the questionnaire relating to strategic expectations were:

- be better prepared for assessments and exams;
- develop my study skills and learn new study strategies;

- practice and refine my use of anatomical terminology;
- get better marks in assessment tasks; and
- gain greater awareness of course expectations.

There was little difference between these results and those for the meaning-oriented items. The only difference was that the number of participants who had marked the 'don't know' column was slightly higher (up to 10%) and two participants (4%) indicated that they did not expect PASS to provide them with a greater awareness of course expectations. The pre-questionnaire and focus group data indicate that participants expected to learn techniques in PASS that would make studying for Systemic Anatomy easier.

It is not surprising that participants have high academic expectations of PASS, considering the information that they received about PASS early in the semester. Students were informed about PASS from several sources emphasising how PASS worked to halve the failure rate of students in Systemic Anatomy in 2004. They were also informed of statistics indicating that students who attended five or more PASS sessions were more likely to pass the subject. These points were reiterated by the students in the focus group interviews and it is likely that these events influenced the students' academic expectations of PASS.

The literature indicates that one of the defining features of PASS is that it provides a link between course material and study skills (Martin & Arendale, 1992). This is a direct amalgamation of the meaning-oriented and strategic learning styles described by Capstick and Fleming (2004). Therefore, it is not

difficult to understand that participants in this case study would have high meaning-oriented and strategic expectations of PASS when these factors are directly related to the way in which the program works.

### **5.3.2 Personal Expectations**

The personal expectations recorded by participants in the pre-questionnaire were interesting in that not all participants agreed that these items would feature in PASS. The items contained in the questionnaire relating to personal experiences were:

- enjoy the learning process;
- develop my confidence;
- have opportunities to air my concerns away from teaching staff; and
- improve my results in the course.

Of these items, the most significant for participants was the possibility of improving their results in the course. This was the only item under the personal expectations category with which 96% of participants agreed. The other 4% of participants had marked the 'don't know' column for this item. The fact that this item rated so highly is significant as the students had been informed at the start of the semester that their potential to pass the subject increased with the number of PASS sessions they attended. Therefore, the expectation was that by attending PASS they would improve their results in the course.

Students were not informed about the other potential benefits of PASS such as the enjoyment they would get out of attending or the fact that they might develop confidence and have opportunities to discuss issues that concerned

them in the absence of teaching staff. A possible recommendation from this study is that students are informed in greater detail about the other ways that PASS can assist them in their personal journeys through tertiary education.

### **5.3.3 Social Expectations**

The items contained in the questionnaire relating to social expectations were:

- meet other people in my course;
- interact with other students in the learning environment;
- gain assistance with settling into university; and
- develop a bond with others in my PASS group.

One of the key features of PASS is that student interaction and support is encouraged (Martin & Arendale, 1992) and the results of this study indicate that students have high social expectations of PASS. The two items that most participants agreed with were the opportunity to meet other people in the course (90%) and interacting with other students in the learning environment (92%). Only 77% of participants indicated that they expected to develop a bond with others in the PASS group, with 8% disagreeing and 15% who were unsure.

Participants were aware of interactions that would take place in PASS as one participant wrote in the pre-questionnaire that PASS “*allows students to interact and help each other to share knowledge*”. This example demonstrates the link made by participants between social interactions and academic outcomes. In other words, students expect that the result of these social interactions would be increased understanding of the subject matter rather than the development of a bond with others in the PASS group.



In relation to gaining assistance with settling into university, only 57% of participants agreed that they considered this an expectation of the PASS program. Thirty-one per cent of participants disagreed with this expectation, making it the most disagreed with expectation contained in the questionnaire. This is interesting as one of the stated aims of the PASS program is to “assist with the transition of students into University life” (Rogan, 2004, p.1). Perhaps students do not anticipate the demands that they will encounter as they begin tertiary studies or feel that a program whose focus is on academic assistance will not address this issue. It is also possible that students who travel longer distances to and from university and are employed in part-time or casual work are less connected to life on campus and do not consider assistance with settling into university a priority.

From the discussion of the results above, it is obvious that participants in this case study had extremely high expectations of the PASS program. The reasons for these high expectations can be attributed to several factors. Firstly, as McInnis and James (DETYA, 1999) claim, the expectations of first year students in relation to the learning environment are generally overly optimistic. Secondly, research by Ledman (2005) also indicates that students have high expectations of learning assistance programs. Finally, the information students received about the PASS program early in the semester from academic staff and other students at UOW can unintentionally raise the level of expectation students have in relation to the outcomes of the program.

### 5.3.4 Recommendations

Students need a clear understanding of what the PASS program will provide. The following recommendations are suggested to ensure that student expectations of the program remain realistic.

- ***Inform PASS leaders about what students expect from PASS***

It is important that PASS leaders are aware of the academic, personal and social expectations of students who enrol in the PASS program. Incorporating this information into the PASS leader training days will ensure the PASS leaders are aware of these expectations and can provide a service that will work towards meeting the expectations of the students. Informing the PASS leaders about the differences between meaning-oriented and strategic expectations and how to provide opportunities for both of these in PASS will help in ensuring a balance of the two is reached during the sessions.

- ***Hold a PASS induction workshop for first year students***

To make students more aware of how the PASS program works and what to expect from the program, a PASS induction workshop at the start of the semester could be implemented. The researcher understands that there are logistical problems with this initiative, however, it would be beneficial for students. The induction workshop could be used to:

- inform students about the program and how it operates;
- give them an opportunity to meet the PASS leaders;
- hear testimonials from past students speaking about the program;
- give them an opportunity to meet other people in the subject;

- hear the subject coordinator speak about the role they want PASS to play in supporting the students in the subject; and
- inform students about meaning-oriented and strategic learning strategies and how they correlate with their expectations.

## 5.4 RESEARCH QUESTION 3

**What are the academic, personal and social experiences of first year Systemic Anatomy students who attend PASS at the University of Wollongong?**

It was evident that the majority of students involved in the study agreed in varying degrees with the academic, personal and social experiences of PASS. This was supported by data collected from the questionnaires, observations and focus group interviews. The analysis of final grades of students enrolled in Systemic Anatomy adds quantitatively to the evidence of the academic support that PASS provides.

### 5.4.1 Academic Experiences

The academic experiences of students attending PASS are many and varied. The post-questionnaire data indicate that participants in this study had opportunities for meaning-oriented and strategic experiences in PASS. These findings are supported by comments from students in the focus group interviews and from the observations of PASS undertaken by the researcher.

The meaning-oriented experiences of participants were extremely high. In this study, 86% of participants agreed that attending PASS had increased their understanding of the subject matter, 96% agreed they had opportunities to clarify basic anatomical concepts, 94% agreed they had opportunities to ask

questions and 82% agreed they had opportunities to clarify complex anatomical concepts. These strong figures confirm that PASS does provide students with opportunities for meaning-oriented experiences.

In developing their understanding of the subject matter, focus group participants reported that group discussions in PASS played an important role. The process of having the PASS leader or other students explain anatomical concepts in their own words meant it was easier to understand and process. Participants also commented that they had difficulty keeping up with the lecturer and that the volume of material covered in the lectures was overwhelming. PASS provided them with opportunities to discuss any questions that arose from the lectures or laboratory sessions in an informal and friendly environment.

The observations of PASS provided evidence that students were engaged in various meaning-oriented learning activities. These activities involved the students identifying anatomical structures, creating tables and flow charts that outlined the function of various anatomical structures, answering questions in a “pop” quiz and informally discussing questions raised by the group members. These activities were facilitated by the PASS leader and provided students with the opportunity to ask questions, share knowledge, deepen their understanding of the course content and clarify anatomical concepts.

The results also indicated that six participants (12%) did not agree that PASS increased their understanding of the subject matter and eight (16%) did not agree that they had opportunities to ask questions. Although the observations indicate that opportunities for these experiences existed, the affective variables

described by Visor et al. (1992), such as locus of control, self-efficacy and self-esteem, may have played some role in their experiences. Students with an external locus of control, low self-efficacy and low self-esteem may have found PASS to be too academically challenging despite the non-threatening environment. As a result they may have stopped attending or did not actively participate in the sessions and, therefore missed opportunities to ask questions. Further research would need to be conducted into the affective variables of students attending PASS to determine if this was the case.

The results indicate that participants engaged in a variety of strategic experiences in the PASS environment. The data from the post-questionnaire indicate that 88% of participants agreed that they practiced and refined their use of anatomical terminology. This is supported by evidence from the observations in which students were observed participating in a mock exam in which they were required to identify a number of anatomical structures. Other activities in which this was evident included the creation of a table outlining the function of the cranial nerves and answering questions in a “pop” quiz.

The post-questionnaire results indicate that 74% of participants agreed that they developed study skills and learnt new study strategies and 68% agreed that they were better prepared for assessments and exams. During the focus group interviews, participants discussed a number of study skills and strategies that they learnt and practiced during the PASS sessions. They also discussed how they used these strategies to help them revise and study for the mid-session exam. The PASS leaders also ran mock exams leading up to the mid-session

exam and this was helpful for some participants who said it made sitting the exam less stressful because they knew what to expect.

Although participants engaged in these activities during PASS, only 54% agreed that by attending PASS they achieved better marks in assessment tasks. The remainder were split between 'disagree' or 'strongly disagree' (28%) and 'don't know' (18%). The fact that PASS provided opportunities for exam preparation and learning of new study skills, indicates that students who attend PASS gain experience using these techniques. Outside of PASS, it is up to the students to practice these techniques to make studying easier and to achieve better marks. Maxwell (1980) states that to achieve in Science, students require a certain degree of motivation. Interestingly, lack of motivation was a reason given by some participants in the post-questionnaire when asked about their infrequent attendance at PASS. Students who lack motivation and do not attend PASS regularly may not spend enough time practicing the learning and study techniques outside of PASS. As a result, these students would be less likely to agree that PASS helped them achieve better marks in assessment tasks.

In relation to developing a greater awareness of course expectations, 72% agreed that PASS assisted them in this process. During the observations, it was noted that students often asked questions about the subject matter but also about other issues such as the number of spelling mistakes they could make in the exam without being penalised, or which information in the textbook they needed to know. Discussion with the PASS leader clarified these issues for them and therefore brought about a greater awareness of what was expected of

them in the subject. In addition, the PASS leaders would often give study tips to the students concerning ways to remember things and possible exam questions.

It is evident that the majority of participants in this study were exposed to meaning-oriented and strategic learning experiences in PASS for Systemic Anatomy. However, the results indicate that participants' expectations of what PASS would deliver were not in line with their experiences. As explained earlier, McInnis and James (DETYA, 1999) made the case that first year students have high expectations of the learning environment and that these expectations are very optimistic. It would seem that the results of this study support the notion that students have overly high expectations of the learning environment. Attendance levels may also have a role in relation to the inconsistency between expectations and experiences. If participants did not attend many sessions, they may not have been able to make the most of the opportunities for academic experiences that PASS had to offer.

#### **5.4.2 Personal Experiences**

A number of studies have suggested that the cooperative learning activities that take place in PASS provide students with opportunities for developing self-esteem, self-confidence and enjoyment of the learning process. They go on to claim that an outcome of these opportunities in the cooperative learning environment is increased student success (Coe, McDougall & McKeown, 1999; Lundberg & Moch, 1995; Martin & Arendale, 1992). The results of this study indicate that the majority of participants enjoyed the learning process, developed confidence and had opportunities to air their concerns away from



teaching staff. In addition to this, 58% agreed that their attendance at PASS led to improved results in the subject.

To explore these experiences further, it was noted in the post-questionnaire that 82% of participants agreed that they enjoyed the learning process. In the focus group interviews, participants described the PASS leaders as “friendly” and “helpful” and the activities used in PASS as “stimulating”, “interactive” and “involving”. These comments substantiate the data in the post-questionnaire relating to student enjoyment of the learning process. It appears that the majority of students enjoyed the different learning opportunities offered in PASS sessions and found them more engaging than lectures and laboratory sessions.

In relation to developing confidence, 58% of participants agreed that PASS had assisted in this process. In the focus group interviews, participants indicated that the PASS leaders had a significant role to play in developing their confidence in the subject. Participants commented that the insights and experience that the PASS leaders brought to the sessions were beneficial. Participants also claimed that they felt reassured when the PASS leaders indicated they had struggled with certain aspects of the course that the participants were finding difficult. Lundeberg and Moch (1995) explain that student confidence increases in environments where students are able to take intellectual risks and make mistakes without being ridiculed. The participants in this study reported that the informal setting created by the PASS leaders was one in which they were “*not made to look silly*” if they gave incorrect answers.



The results of this study also indicate that 30% of participants did not agree that PASS assisted in developing their confidence. This could be attributed to the role that the PASS leaders play in developing student confidence. As some participants indicated in the post-questionnaire, they thought that a particular PASS leader was not well organised and were not pleased with the way the sessions ran. For this reason, it would have been difficult for the PASS leader to improve confidence levels in the participants.

Of the students surveyed, 28% did not agree that they had opportunities to air their concerns away from teaching staff. The opportunities for this to take place can depend upon the willingness of the students to discuss these topics and the ability of the PASS leaders to facilitate this discussion. The former of these two circumstances is perhaps more likely as Rogan (2004) claims that PASS leaders are “recruited on the basis of their academic record and their excellent interpersonal skills” (p.1). In addition, students may be unwilling to discuss their concerns if they consider a PASS leader to be a tutor rather than a peer. This is possible if students are intimidated by a PASS leader’s strong academic record. Therefore, a number of students may feel uncomfortable expressing their concerns in the PASS environment.

Results of the post-questionnaire and focus group interviews indicate that a number of participants attributed improved marks in the subject to their attendance at PASS. Additionally, some participants reflected on the notion that if they had attended more sessions then the impact on their performance in the subject may have been greater. The fact that the majority of participants did not attend as many sessions as anticipated could explain why 13 participants

(26%) did not agree that attending PASS improved their results in the course. A further eight participants (16%) were unsure if PASS improved their results in the course. This could be due to the fact that at the time of the post-questionnaire they had only completed one assessment task and did not know their final course grades.

When looking at final grades of students enrolled in Systemic Anatomy, it is clear that the students who attended five or more PASS sessions achieved better grades than those who attended less than five sessions. In 2004, 37% of students enrolled in Systemic Anatomy attended five or more PASS sessions and the failure rate for the subject was 13%. In 2005, the number of students that attended five or more PASS sessions was 29% and the failure rate for the subject increased to 19%. As this research focussed on a case study group of PASS attendees, it is impossible to know why fewer students attended PASS for Systemic Anatomy in 2005 and what could have contributed to the increase in the failure rate. However, the responses given by participants in this study who attended fewer than five PASS sessions indicate that the times of the sessions and how they prioritised their workload played a significant role with regard to their attendance behaviour. In addition, as McInnis et al. (2000) report, an increase in the number of students who are employed in part-time or casual work means that they have less time to spend on campus and may sacrifice attending programs such as PASS for this purpose.

#### **5.4.3 Social Experiences**

It is important to note that of the three categories explored in this study – academic, personal and social – the social experiences of participants recorded

in the post-questionnaire are the most consistent with the pre-questionnaire expectations. As the focus of the PASS program was on academic assistance, the social expectations of students may be reduced and therefore are more in line with their experiences.

The literature indicates that PASS is considered to be a good example of a cooperative learning environment. The results of this study indicate that this was the case as 88% of participants agreed that they interacted with other students in the learning environment and 80% agreed that PASS provided them with opportunities to meet other people in their course. The observations and focus group interviews provide examples of these processes in action. However, as revealed during the observations of PASS, a number of students continue to work individually, even when encouraged to work in groups and this could have negative effects on academic performance. Gabbert et al. (1986), for example, suggest there is a positive group to individual transfer for students exposed to cooperative conditions, as opposed to students working individually.

Additionally, the fact that a number of students continue to work on their own in the PASS environment could explain why only 54% of participants in this study agreed that they developed a bond with others in their PASS group. This result could also be attributed to the fact that participants did not attend as many sessions as anticipated and, consequently, were presented with fewer opportunities for forming these bonds with others. As students were focussed on the academic benefits that could result from their social experiences, the interactions that took place between participants may have been of a superficial nature.

PASS supports student integration into university by providing opportunities from the start of the semester for students to meet and study in small groups under the guidance of more experienced peers (Rogan, 2004). By doing so, it aims to reduce feelings of isolation that students may experience when entering a large and diverse campus after leaving high school. The results of this study indicate that students do not have high expectations of PASS in relation to gaining assistance settling into university, even though this is one of the aims of the PASS program (Rogan, 2004). In accordance with these expectations, less than half the participants (48%) agreed that PASS assisted them with settling into university. As suggested by Peel (DETYA, 1999), a wide range of transition activities can be implemented to address the problems and issues that students are faced with when they enter university and PASS is one of many that can assist in this process. Further research at UOW is necessary to determine whether students anticipate the need for assistance with settling into university and, if so, what forms this assistance should take. In addition, as reported by McInnis et al. (2000), more and more students are employed in part-time or casual work and, as a result, are less connected to life on campus. Therefore, as they are balancing a variety of commitments, some students may not consider assistance with settling into university a priority.

#### **5.4.4 Overall Satisfaction with PASS**

In relation to overall satisfaction of the PASS program, even though the expectations of participants may not have been realised to the extent that was anticipated, 41 out of 51 participants (80%) were satisfied with their experiences of PASS.

#### **5.4.5 Recommendations**

Using feedback provided by participants in this study, the researcher proposes the following recommendations in relation to the PASS program at UOW. These recommendations relate to the content and structure of PASS for Systemic Anatomy at UOW.

- ***Incorporation of more theory work into the PASS sessions for Systemic Anatomy***

Some participants suggested that PASS should provide more revision of theory work in Systemic Anatomy rather than having the dominant focus on practical work. The researcher discovered towards the end of the study that the Subject Coordinator had in fact requested that students focus on the practical component of Systemic Anatomy in PASS as he believed this presents the greatest challenge to students. Perhaps a revision of this structure is necessary and a balance between practical and theory work can be reached in the future.

- ***Increased collaboration between PASS leaders and subject lecturers***

Although PASS leaders act as peers rather than tutors, increased collaboration between the PASS leaders and the subject lecturers could be beneficial for students. As students are more comfortable discussing matters with the PASS leader regarding the course content and how it is being delivered, PASS leaders delivering this feedback to the lecturers would assist in improving the delivery of the course. This could be done

through a feedback report that the PASS leaders complete every few weeks, highlighting any issues or concerns raised by students.

- ***Maintain and increase use of interactive, group activities***

Participants in this study commented on their enjoyment of the group activities and suggested that more group interaction should take place in PASS to get people involved. PASS leaders could share the activities that work well in their sessions and create a resource containing these activities for future PASS leaders to use. This resource could be managed by the PASS Coordinator.

- ***Use the Anatomy laboratory tutorial room for PASS sessions***

Some students suggested that PASS sessions could be held in the Anatomy laboratory or in the tutorial room adjacent to the Anatomy laboratory so that they could have access to anatomical models during the PASS sessions. If the previous suggestion of focussing on the theory of Systemic Anatomy was taken, using the tutorial room for the purpose of having access to anatomical models may not be necessary. However, having one or two sessions in the laboratory for this purpose may be beneficial for some students. It is important to keep in mind that students are able to engage in private study and have access to the anatomical models when the Anatomy laboratory is open.

- ***Hold separate PASS sessions for Biomedical Science students and Physical and Health Education students***

Another suggestion related to the fact that Biomedical Science students and Physical and Health Education students are combined in the PASS sessions. It was suggested by some that these two student groups have separate PASS sessions due to the fact that there are some differences in the information each group is required to learn for their final exam. This would reduce any confusion between the two groups in relation to what they need to know and what they will be tested on.

## **5.5 RECOMMENDATIONS FOR FUTURE RESEARCH**

Areas for future research into PASS include:

1. A similar study into the expectations and experiences of students attending PASS for other subjects at UOW to establish whether there are similarities across all student groups. This would further validate the findings of this study.
2. Undertaking further study to determine what role the affective variables, such as locus of control, self-efficacy and self-esteem, contribute to students' decisions to attend PASS. This would help in determining how sessions could be run to cater for all students so that all students could obtain the benefits from PASS required to succeed in high-risk courses.
3. As there is some difficulty in maintaining regular student attendance at PASS, further research should be conducted to ascertain how Students

Services can attract and keep students attending PASS on a regular basis.

4. As PASS assists in developing study skills of students, it would be interesting to find out whether these skills are transferable to other subjects. Further studies could be carried out into the long-term benefits of PASS to determine whether PASS attendees develop higher-level thinking at different rates compared to those who do not attend.
5. A case study could be conducted to explore the experiences of the PASS leaders. This would help inform the PASS Coordinator about the needs of the PASS leaders and the perceptions the leaders have of student needs. It will also provide information about the benefits and possible disadvantages of working as a PASS leader. This information could be used to ensure the leaders' training is appropriate to their needs and could identify areas where extra support is needed.

## **5.6 CONCLUSION**

The purpose of this study was to investigate the expectations and experiences of first year Systemic Anatomy students attending PASS at UOW. It was anticipated that this case study would identify the reasons first year students choose to attend PASS as well as provide detailed insights into the academic, personal and social experiences of students attending PASS.

The findings indicate that students attend PASS for a variety of reasons. The most significant of these involve opportunities to develop greater understanding



of the subject matter and to gain knowledge of and practice effective methods for studying Systemic Anatomy. Students are informed early in the Autumn Session about PASS from various sources, specifically through SOLS mail and from academic staff, and this information has a significant impact on their decision to enrol in the program. However, the results indicate that actual attendance at PASS is lower than anticipated attendance. Explanations for these attendance patterns include other academic pressures, time management, travelling distance to university, negative experiences in the PASS environment and the fact that PASS is voluntary. As a result, students do not attend as regularly as predicted.

In relation to the expectations of the case study group, it was revealed that students had high academic, personal and social expectations of the PASS program. Overall, student expectations focussed on positive academic outcomes such as increased understanding of the subject matter and an awareness of effective techniques for studying Systemic Anatomy successfully. Students also anticipated that working in small groups, assisted by a peer leader, would make the learning process more enjoyable.

The results indicate that students had opportunities for a wide variety of experiences and most participants agreed that attending PASS assisted in their academic development. The learning environment of PASS played a significant role in this process, as students were able to share their knowledge and deepen their understanding when interacting with other students in the learning environment. The development of a community of learning, as described by Lundeborg and Moch (1995), meant that students were comfortable taking risks

and making mistakes without fear of being ridiculed. Students also reported increased confidence, enjoyment of the learning process and improved results as a result of attending PASS. Analysis of final course grades supports this as student grades improve according to the number of PASS sessions attended.

Overall, the majority of students were satisfied with their experiences of PASS and agreed that PASS assisted them in dealing with the challenges they faced as first year university students at UOW. The researcher hopes that this program will continue to provide support to students in years to come and also hopes that further research will be undertaken to determine successful strategies for increasing student attendance at PASS and for improving student success in high-risk subjects.

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# **APPENDIX A**

## **Approval to Conduct Study**



## INITIAL APPLICATION APPROVAL

In reply please quote: HE05/022

Further Enquiries Phone: 4221 4457

**2 March 2005**

**Ms Leah Mentz  
13 Mangerton Road  
Mangerton NSW 2500**

Dear Ms Mentz,

I am pleased to advise that the Human Research Ethics application referred to below has been **approved**.

Ethics Number:	HE05/022
Project Title:	An investigation into the effectiveness of the Peer Assisted Study Sessions for first year Systemic Anatomy students at the University of Wollongong
Name of Researchers:	Leah Mentz
Approval Date:	2 March 2005
Expiry Date:	16 December 2005

This certificate relates to the research protocol submitted in your original application as modified in your letter of 22 February 2005. As a condition of approval, the Human Research Ethics Committee requires that researchers immediately report:

- proposed changes to the protocol including changes to investigators involved
- serious or unexpected adverse effects on participants
- unforeseen events that might affect continued ethical acceptability of the project.

You are also required to complete monitoring reports annually and at the end of your project. These reports are sent out approximately 6 weeks prior to the date your ethics approval expires. The reports must be completed, signed by the appropriate Head of School, and returned to the Research Services Office prior to the expiry date.

Yours Sincerely,

**Associate Professor Rod Nilsen  
Chairperson  
Human Research Ethics Committee**

cc: Pauline Lysaght, Education

# **APPENDIX B**

## **Information Sheet**



## Information Sheet (Stage 1)

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### **“An investigation into the effectiveness of Peer Assisted Study Sessions for first year Systemic Anatomy students at the University of Wollongong”**

**Leah Mentz**

My name is Leah Mentz and I am an honours student in the fourth year of the Bachelor of Education (Physical and Health Education) course at the University of Wollongong. For my fourth year honours thesis I will be evaluating the effectiveness of Peer Assisted Study Sessions (PASS) for first year Systemic Anatomy students at the University of Wollongong.

This is an invitation to all students enrolled in Systemic Anatomy (EDUP131/BMS101) in Autumn 2005 to participate in this research project. Since the research will investigate the impact of the Peer Assisted Study Sessions (PASS) on Systemic Anatomy students, I would particularly encourage all students enrolled in PASS for this subject to be involved.

As a potential participant in this research you could make a valuable contribution by completing two questionnaires, one at the start of Autumn Session and one at the end of the Autumn Session. The questionnaires will explore reasons for attending or not attending PASS, expectations of the program and experiences, both positive and negative.

The second phase of the project will involve participation in one small group discussion with the researcher, Leah that will take approximately thirty minutes. Not all participants are required to take part in the small group discussion and involvement is completely voluntary, however your involvement would be greatly appreciated. The small group discussion will take place towards the end of Autumn session and will be held at a convenient location. The focus of the small group discussion will be on student impressions of the PASS program for Systemic Anatomy.

Information gained from the questionnaires and small group discussions will be published in the form of a thesis, however anonymity of participants will be maintained in publishing. If a participant's comments are to be quoted, or the participant referred to, her/his name will be changed to ensure anonymity is maintained.

Participants will not be placed at any risk. The identity of the participants will remain confidential and during group discussions only first names will be used. No participant will be given other participants' details.

Participants can withdraw their consent and cease participation at any time before or during the research process. Any material gathered that involves the participant and their experiences will be removed from the data and destroyed.

If you have any questions about the study, please do not hesitate to contact the researcher directly on 4226 1224, [lm91@uow.edu.au](mailto:lm91@uow.edu.au), or if you have any concerns or complaints regarding the way the research is or has been conducted, you can contact the researcher's supervisors, Pauline Lysaght, (02) 4221 3424, [pauline@uow.edu.au](mailto:pauline@uow.edu.au), or Doug Hearne (02) 4221 4092, [dhearne@uow.edu.au](mailto:dhearne@uow.edu.au), or the Complaints Officer, Human Research Ethics Committee, University of Wollongong on (02) 4221 4457.

## **APPENDIX C**

### **Questionnaire Consent Form**



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**Participant Consent Form**

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**“An investigation into the effectiveness of Peer Assisted Study Sessions for first year Systemic Anatomy students at the University of Wollongong”**

**Leah Mentz**

I have been given information about “An investigation into the effectiveness of Peer Assisted Study Sessions for first year Systemic Anatomy students at the University of Wollongong” and have discussed this research project with Leah Mentz, who is conducting this research as part of a Bachelor of Education (Honours), supervised by Pauline Lysaght and Doug Hearne in the Faculty of Education at the University of Wollongong.

I understand that, if I consent to participate in this project, I will be asked to take part in two 20-minute questionnaires, one at the beginning of the semester and one at the end. I also understand that I may be invited to participate in the second phase of this research involving small group discussions with the researcher, Leah, however I am not obliged to participate in any further research.

I have been advised of the nature of this research through an information sheet provided by Leah Mentz. I have had an opportunity to ask her any questions I may have about the research and my participation. I understand that my participation in this research is voluntary, I am free to refuse to participate and I am free to withdraw from the research at any time. My refusal to participate or withdrawal of consent will not affect my studies or my relationship with the University of Wollongong.

If I have any enquiries about the research, I can contact Leah Mentz (02) 4226 1224 [lm91@uow.edu.au](mailto:lm91@uow.edu.au), or if I have any concerns or complaints regarding the way the research is or has been conducted, I can contact the researcher’s supervisors, Pauline Lysaght, (02) 4221 3424, [pauline@uow.edu.au](mailto:pauline@uow.edu.au), or Doug Hearne (02) 4221 4092, [dhearne@uow.edu.au](mailto:dhearne@uow.edu.au), or the Complaints Officer, Human Research Ethics Committee, University of Wollongong on (02) 4221 4457.

By signing below I am indicating my consent to participate in the research titled "An investigation into the effectiveness of Peer Assisted Study Sessions for first year Systemic Anatomy students at the University of Wollongong", conducted by Leah Mentz, as it has been described to me in the information sheet and in discussion with her. I understand that the data collected from my participation will be used for an honours thesis and other academic publications and I consent for it to be used in that manner.

Signature and Date

.....

Name (please print)

.....

## **APPENDIX D**

### **Focus Group Interview Consent Form**



## Participant Consent Form (Stage 2)

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### **“An investigation into the effectiveness of Peer Assisted Study Sessions for first year Systemic Anatomy students at the University of Wollongong”**

**Leah Mentz**

I have been given information about “An investigation into the effectiveness of Peer Assisted Study Sessions for first year Systemic Anatomy students at the University of Wollongong” and have discussed this research project with Leah Mentz, who is conducting this research as part of a Bachelor of Education (Honours), supervised by Pauline Lysaght and Doug Hearne in the Faculty of Education at the University of Wollongong.

I understand that, if I consent to participate in this project, I will be asked some questions about my experiences of Peer Assisted Study Sessions for first year Systemic Anatomy students at the University of Wollongong. This will involve taking part in a group meeting with the researcher, Leah Mentz at the end of the semester.

Through the focus group discussion, I will be required to discuss a variety of personal and educational experiences related to my learning in the PASS environment. I am aware that other participants in this research, who may not be known to me, will attend the focus group discussion. I am aware that the information I provide will be audio-taped to ensure that comments are reported accurately. The tapes will be wiped clear after the discussions are typed up. My identity will remain confidential and will be protected through the use of an alias.

I have been advised of the nature of this research through an information sheet provided by Leah Mentz. I have had an opportunity to ask her any questions I may have about the research and my participation. I understand that my participation in this research is voluntary, I am free to refuse to participate and I am free to withdraw from the research at any time. My refusal to participate or withdrawal of consent will not affect my studies or my relationship with the University of Wollongong.

If I have any enquiries about the research, I can contact Leah Mentz (02) 4226 1224 [lm91@uow.edu.au](mailto:lm91@uow.edu.au), or if I have any concerns or complaints regarding the way the research is or has been conducted, I can contact the researcher’s supervisors, Pauline Lysaght (02) 4221 3424, [pauline@uow.edu.au](mailto:pauline@uow.edu.au), or Doug Hearne (02) 4221 4092, [dhearne@uow.edu.au](mailto:dhearne@uow.edu.au), or the Complaints Officer, Human Research Ethics Committee, University of Wollongong on (02) 4221 4457.

By signing below I am indicating my consent to participate in the research titled “An investigation into the effectiveness of Peer Assisted Study Sessions for first year Systemic Anatomy students at the University of Wollongong”, conducted by Leah Mentz, as it has been described to me in the information sheet and in discussion with her. I understand that the data collected from my participation will be used for an honours thesis and other academic publications and I consent for it to be used in that manner.

Signature and Date

.....

Name (please print)

.....

## **APPENDIX E**

### **Observation Information Sheet and Consent Form**



## Information Sheet

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### **“An investigation into the effectiveness of Peer Assisted Study Sessions for first year Systemic Anatomy students at the University of Wollongong”**

**Leah Mentz**

My name is Leah Mentz and I am an honours student in the fourth year of the Bachelor of Education (Physical and Health Education) course at the University of Wollongong. For my fourth year honours thesis I will be evaluating the effectiveness of Peer Assisted Study Sessions (PASS) for first year Systemic Anatomy students at the University of Wollongong.

The purpose of this research is to investigate the impact of the Peer Assisted Study Sessions (PASS) on Systemic Anatomy students. As part of the research procedure, I will be undertaking observations of PASS as a non-participant observer.

Information gained from the observations will be published in the form of a thesis, however anonymity of participants will be maintained in publishing. If a participant's comments are to be quoted, or the participant referred to, her or his name will be changed to ensure anonymity is maintained.

Participants will not be placed at any risk. Participants can withdraw their consent and cease participation at any time before or during the research process. Any material gathered that involves the participant and their experiences will be removed from the data and destroyed.

If you have any questions about the study, please do not hesitate to contact the researcher directly on 4226 1224, [lm91@uow.edu.au](mailto:lm91@uow.edu.au), or if you have any concerns or complaints regarding the way the research is or has been conducted, you can contact the researcher's supervisors, Pauline Lysaght, (02) 4221 3424, [pauline@uow.edu.au](mailto:pauline@uow.edu.au), or Doug Hearne (02) 4221 4092, [dhearne@uow.edu.au](mailto:dhearne@uow.edu.au), or the Complaints Officer, Human Research Ethics Committee, University of Wollongong on (02) 4221 4457.



## Participant Consent Form

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### **“An investigation into the effectiveness of Peer Assisted Study Sessions for first year Systemic Anatomy students at the University of Wollongong”**

**Leah Mentz**

I have been given information about “An investigation into the effectiveness of Peer Assisted Study Sessions for first year Systemic Anatomy students at the University of Wollongong” and have discussed this research project with Leah Mentz, who is conducting this research as part of a Bachelor of Education (Honours), supervised by Pauline Lysaght and Doug Hearne in the Faculty of Education at the University of Wollongong.

I understand that, if I consent to participate in this project, my participation during a one-hour PASS session will be observed.

I have been advised of the nature of this research through an information sheet provided by Leah Mentz. I have had an opportunity to ask her any questions I may have about the research and my participation. I understand that my participation in this research is voluntary, I am free to refuse to participate and I am free to withdraw from the research at any time. My refusal to participate or withdrawal of consent will not affect my studies or my relationship with the University of Wollongong.

If I have any enquiries about the research, I can contact Leah Mentz (02) 4226 1224 [lm91@uow.edu.au](mailto:lm91@uow.edu.au), or if I have any concerns or complaints regarding the way the research is or has been conducted, I can contact the researcher's supervisors, Pauline Lysaght, (02) 4221 3424, [pauline@uow.edu.au](mailto:pauline@uow.edu.au), or Doug Hearne (02) 4221 4092, [dhearne@uow.edu.au](mailto:dhearne@uow.edu.au), or the Complaints Officer, Human Research Ethics Committee, University of Wollongong on (02) 4221 4457.



By signing below I am indicating my consent to participate in the research titled “An investigation into the effectiveness of Peer Assisted Study Sessions for first year Systemic Anatomy students at the University of Wollongong”, conducted by Leah Mentz, as it has been described to me in the information sheet and in discussion with her. I understand that the data collected from my participation will be used for an honours thesis and other academic publications and I consent for it to be used in that manner.

Signature and Date

.....

Name (please print)

.....

# **APPENDIX F**

## **Pre-Questionnaire (Student Response Form 1)**

# **AN EVALUATION OF THE PEER ASSISTED STUDY SESSIONS FOR FIRST YEAR SYSTEMIC ANATOMY STUDENTS**

## **STUDENT RESPONSE FORM 1**

Thank you for agreeing to participate in the study titled "An evaluation of the Peer Assisted Study Session for first year Systemic Anatomy students". This student response form forms the first part of this study and is very valuable, as it will help us gain greater insight into student perceptions and expectations of the PASS program.

### ***What you can do!***

All you have to do is read each question carefully and answer it as best you can. For some questions you are given choices but for others you will have to think of your own response.

### ***Answer honestly***

The success of this survey depends on the honesty of your answers. We are only interested in your own perceptions and experiences.

### ***Who will read my answers?***

The researcher will be the only person to see your answers. Your privacy is very important and, as explained in the information sheet and consent form, anonymity of participants will be maintained.

### ***What do I do when I've finished?***

After you have completed filling out this form, please return it to the researcher.

***Thanks again for your participation in this project.***

AN EVALUATION OF THE PEER ASSISTED STUDY SESSIONS FOR FIRST YEAR  
SYSTEMIC ANATOMY STUDENTS

NAME: .....

SECTION 1: CONTEXT

This information is strictly confidential and will be used for statistical purposes only.  
Please circle the number against your answer or answer in the space provided.

<p><b>Question 1:</b> Are you</p> <p>Female 1</p> <p>Male 2</p>	<p><b>Question 7:</b> In which course are you enrolled:</p> <p>BMS101 1</p> <p>EDUP131 2</p>
<p><b>Question 2:</b> What is your age group:</p> <p>17 – 20 1</p> <p>21 – 25 2</p> <p>26 – 30 3</p> <p>30+ 4</p>	<p><b>Question 8:</b> How confident do you feel in regard to the subject material for this course:</p> <p>Very confident 1</p> <p>Confident 2</p> <p>Neither confident nor unsure 3</p> <p>Unsure 4</p> <p>Very Unsure 5</p>
<p><b>Question 3:</b> Is this your first year at university:</p> <p>No 1</p> <p>Yes 2 (go to Q.5)</p>	<p><b>Question 9:</b> Where do you come from:</p> <p>Illawarra region 1</p> <p>Sydney region 2</p> <p>Other NSW region 3</p> <p>Other Australian state 4</p> <p>Overseas 5</p>
<p><b>Question 4:</b> If you answered No to Question 3, have you attempted this subject before:</p> <p>No 1</p> <p>Yes 2</p>	
<p><b>Question 5a:</b> If you completed Year 12 (or equivalent), what was your UAI/TER score:</p> <p>_____</p> <p><b>Question 5b:</b> What year was this achieved:</p> <p>_____</p>	<p><b>Question 10:</b> Have you moved away from home to study at the University of Wollongong:</p> <p>No 1 (go to Section 2)</p> <p>Yes 2</p>
<p><b>Questions 6:</b> Have you studied any science subjects (such as biology or chemistry) prior to entering this course?</p> <p>No 1</p> <p>Yes 2</p> <p>If Yes, please specify:</p> <p>_____</p>	<p><b>Question 11:</b> If you have moved away from home, how often do you plan to return home during semester?</p> <p>Weekly 1</p> <p>Fortnightly 2</p> <p>Monthly 3</p> <p>Less than once a month 4</p>

# AN EVALUATION OF THE PEER ASSISTED STUDY SESSIONS FOR FIRST YEAR SYSTEMIC ANATOMY STUDENTS

## SECTION 2

The following questions are designed so that the researcher can better understand your level of expectation regarding the PASS program. Please write your answers in the space provided, or where required, circle the number (or numbers) that correspond to your answer.

1. What is your understanding of the way the PASS program supports students at the University of Wollongong?

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2. How were you informed about the PASS program? (Circle as many responses as necessary.)

Email / SOLS mail 1

Word of mouth 2

Privately encouraged by academic staff 3

Mentioned during a lecture or information session 4

Condition of enrolment 5

Other (please specify) 6

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3. Which of the method(s) you selected in Question 2 above, had the most impact on you and why? Please provide relevant details.

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4. How many PASS sessions do you think you will attend this semester?

0 1

1 – 4 2

5 – 9 3

10 + 4

5. Thinking about your reasons for attending PASS, do you agree or disagree with the following:

<b>I expect to:</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Don't know</b>
Increase my understanding of the subject matter	1	2	3	4	5
Meet other people in my course	1	2	3	4	5
Enjoy the learning process	1	2	3	4	5
Have opportunities to clarify basic anatomical concepts	1	2	3	4	5
Have opportunities to clarify complex anatomical concepts	1	2	3	4	5
Get better marks in assessment tasks	1	2	3	4	5
Interact with other students in the learning environment	1	2	3	4	5
Develop my confidence	1	2	3	4	5
Have opportunities to air my concerns away from teaching staff	1	2	3	4	5
Be better prepared for assessments and exams	1	2	3	4	5
Develop my study skills and learn new study strategies	1	2	3	4	5
Practice and refine my use of anatomical terminology	1	2	3	4	5
Have a greater awareness of course expectations	1	2	3	4	5
Gain assistance with settling in to university	1	2	3	4	5
Improve my results in the course	1	2	3	4	5
Have opportunities to ask questions	1	2	3	4	5
Develop a bond with others in my PASS group	1	2	3	4	5

6. Would you be interested in elaborating on your comments and discussing your experiences of PASS in a small group discussion towards the end of the semester? (Please tick the box)

Yes ☐ No ☐

If you answered Yes, please provide your contact details:

Email \_\_\_\_\_ Phone \_\_\_\_\_

**Now that you have finished, please return this response form to the researcher. Thanks and have a great day!**

# **APPENDIX G**

## **Post-Questionnaire**

### **(Student Response Form 2)**



# **AN EVALUATION OF THE PEER ASSISTED STUDY SESSIONS FOR FIRST YEAR SYSTEMIC ANATOMY STUDENTS**

## **STUDENT RESPONSE FORM 2**

Thank you for agreeing to participate in the study titled "An evaluation of the Peer Assisted Study Session for first year Systemic Anatomy students". The answers you give in this student response form are very valuable, as they will help us gain greater insight into student perceptions and expectations of the PASS program.

### ***What you can do!***

All you have to do is read each question carefully and answer it as best you can. For some questions you are given choices but for others you will have to think of your own response.

### ***Answer honestly***

The success of this survey depends on the honesty of your answers. We are only interested in your own perceptions and experiences.

### ***Who will read my answers?***

The researcher will be the only person to see your answers. Your privacy is very important and, as explained in the information sheet and consent form, anonymity of participants will be maintained.

### ***What do I do when I've finished?***

After you have completed the response form, please return it to the researcher.

***Thanks again for your participation in this project.***



## SECTION 1: CONTEXT

This information is strictly confidential and will be used for statistical purposes only.  
Please circle the number against your answer or answer in the space provided.

<b>Question 1: Are you</b>  Female                      1  Male                         2	<b>Question 7: In which course are you enrolled:</b>  BMS101                      1  EDUP131                     2
<b>Question 2: What is your age group:</b>  17 – 20                      1  21 – 25                      2  26 – 30                      3  30+                         4	<b>Question 8: How confident do you feel in regard to the subject material for this course:</b> Very confident                      1  Confident                              2  Neither confident nor unsure      3  Unsure                                4  Very Unsure                         5
<b>Question 3: Is this your first year at university:</b>  No                                1  Yes                                2      (go to Q.5)	<b>Question 9: Where do you come from:</b>  Illawarra region                      1  Sydney region                         2  Other NSW region                      3  Other Australian state                4  Overseas                                5
<b>Question 4: If you answered No to Question 3, have you attempted this subject before:</b>  No                                1  Yes                                2	
<b>Question 5a: If you completed Year 12 (or equivalent), what was your UAI/TER score:</b>  _____  <b>Question 5b: What year was this achieved:</b>  _____	<b>Question 10: Did you move away from home to study at the University of Wollongong:</b>  No                                1      (go to Section 2)  Yes                                2
<b>Questions 6: Have you studied any science subjects (such as biology or chemistry) prior to entering this course at university?</b>  No                                1  Yes                                2  If Yes, please specify: _____	<b>Question 11: If you moved away from home, how often did you return home during semester?</b>  Weekly                                1  Fortnightly                              2  Monthly                                3  Less than once a month               4

## SECTION 2

The following questions are designed so that the researcher can better understand your level of satisfaction regarding the PASS program. Please write your answers in the space provided, or where required, circle the number that corresponds to your answer.

1. What is your understanding of the way the PASS program supports students at the University of Wollongong?

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2. How many PASS sessions have you attended this semester?

0	1
1 – 4	2
5 – 9	3
10 +	4

3. If you have been to five or more PASS sessions, what motivated you to keep attending?

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4. If you have been to fewer than five PASS sessions, why was this the case?

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5. Thinking about the PASS sessions you attended, do you agree or disagree with the following:

<b>By attending PASS, I:</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Don't know</b>
Increased my understanding of the subject matter	1	2	3	4	5
Met other people in my course	1	2	3	4	5
Enjoyed the learning process	1	2	3	4	5
Had opportunities to clarify basic anatomical concepts	1	2	3	4	5
Had opportunities to clarify complex anatomical concepts	1	2	3	4	5
Got better marks in assessment tasks	1	2	3	4	5
Interacted with other students in the learning environment	1	2	3	4	5
Developed my confidence	1	2	3	4	5
Had opportunities to air my concerns away from teaching staff	1	2	3	4	5
Was better prepared for assessments and exams	1	2	3	4	5
Developed my study skills and learnt new study strategies	1	2	3	4	5
Practiced and refined my use of anatomical terminology	1	2	3	4	5
Had a greater awareness of course expectations	1	2	3	4	5
Gained assistance with settling in to university	1	2	3	4	5
Improved my results in the course	1	2	3	4	5
Had opportunities to ask questions	1	2	3	4	5
Developed a bond with others in my PASS group	1	2	3	4	5

SECTION 3

6. What is your overall level of satisfaction with the PASS program? (Please circle the number that best describes how you feel)

Very satisfied	Satisfied	Unsatisfied	Very unsatisfied	Undecided
1	2	3	4	5

Please explain your answer:

7. Has attending PASS increased the likelihood that you will complete your degree/course of study at the University of Wollongong?

- No1
- Yes2

Please explain your answer:

8. What would you like to see improved or developed in relation to PASS?

Now that you have finished, please return the response form to the researcher.

Thanks and have a great day!

# **APPENDIX H**

## **Focus Group Interview Questions**

## **Focus Group Interview Questions**

1. What were your reasons for enrolling in the PASS program for Systemic Anatomy?
2. How has PASS supported your entrance to university this session?
  - i) Personally (adjusting to uni life, confidence, concerns about lecturers/course)
  - ii) Academically (improved grades, study skills, understanding of course material)
  - iii) Socially (meeting other people, making friends, interacting)
3. How have the sessions helped you develop your understanding of the subject matter in Systemic Anatomy?
4. What are some examples of study skills and study strategies that you have learned about in PASS sessions?
5.
  - i) How would you describe the learning atmosphere of PASS? (group work, individual work, activities)
  - ii) What is your understanding of the role of the PASS leader? (tutor or peer)
6. What makes you decide whether to go to a session or not?
7. Can you highlight any positive aspects or suggestions that you believe are important for improving the PASS program for Systemic Anatomy students at UOW?
8. Lastly, what would you say to new students coming into the Systemic Anatomy course about the PASS program?

# **APPENDIX I**

## **Observation Fieldnotes Sheet**

OBSERVATION FIELDNOTES

Time: .....

Length of Observation: .....

Date: .....

Room No: .....

Things to consider:

Problem solving	PS	Clarifying basic anatomical concepts	BC	Clarifying complex anatomical concepts	CC
Interaction with other students	I	Sharing of study skills and strategies	SS	Exam preparation	EP
Discussion of course expectations	D	Use of anatomical terminology	AT	Enjoyment of learning process	ELP
Opportunities to ask questions	Q	Catering to various learning styles	LS	Leader redirecting questions to students	RQ

Observations	Analysis
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**Observations**

**Analysis**

## **APPENDIX J**

### **PASS Program Statistics 2004**

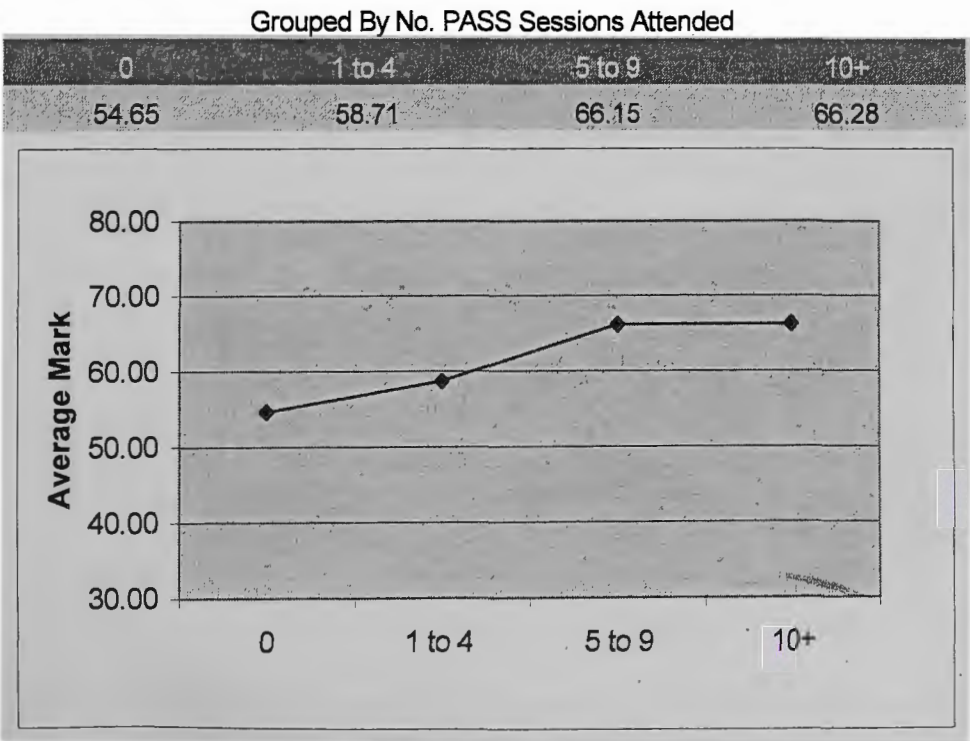
PASS PROGRAM STATISTICS  
6 WM/WA

Session: Autumn 2004  
Subject Number: BMS101  
Subject Name: Systemic Anatomy  
Prepared By: P. Dawson  
Date: 28/6/04

Overall Under-Graduate Final Grade

Categorised by number of PASS sessions attended versus Final Grade					
No. PASS Sessions Attended					
	0	1 to 4	5 to 9	10+	Total
Fail	23	12	3	1	39
Pass Conceded	10	8	5	2	25
Pass	43	30	27	16	116
Credit	24	20	23	15	82
Distinction	9	11	14	8	42
High Distinction	1	4	9	4	18
Total	110	85	81	46	322
Same information as a percentage					
No. PASS Sessions Attended					
	0	1 to 4	5 to 9	10+	Total
Fail	20.91%	14.12%	3.70%	2.17%	12.11%
Pass Conceded	9.09%	9.41%	6.17%	4.35%	7.76%
Pass	39.09%	35.29%	33.33%	34.78%	36.02%
Credit	21.82%	23.53%	28.40%	32.61%	25.47%
Distinction	8.18%	12.94%	17.28%	17.39%	13.04%
High Distinction	0.91%	4.71%	11.11%	8.70%	5.59%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

Overall Under-Graduate Average Final Mark



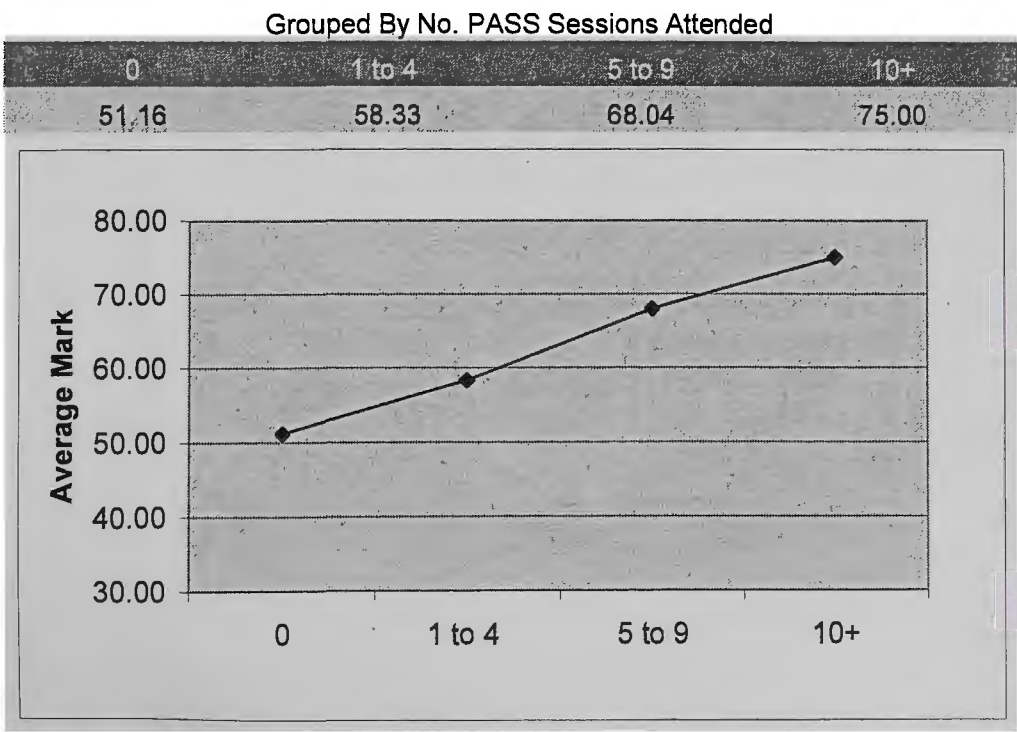
PASS PROGRAM STATISTICS  
3 WM/WA

Session: Autumn 2004  
Subject Number: EDUP131  
Subject Name: Systemic Anatomy  
Prepared By: P. Dawson  
Date: 28/6/04

Overall Under-Graduate Final Grade

Categorised by number of PASS sessions attended versus Final Grade					
No. PASS Sessions Attended					
	0	1 to 4	5 to 9	10+	Total
Fail	8	7	0	0	15
Pass Conceded	4	2	0	0	6
Pass	9	12	10	0	31
Credit	3	16	6	0	25
Distinction	1	1	8	1	11
High Distinction	0	1	1	0	2
Total	25	39	25	1	90
Same information as a percentage					
No. PASS Sessions Attended					
	0	1 to 4	5 to 9	10+	Total
Fail	32.00%	17.95%	0.00%	0.00%	16.67%
Pass Conceded	16.00%	5.13%	0.00%	0.00%	6.67%
Pass	36.00%	30.77%	40.00%	0.00%	34.44%
Credit	12.00%	41.03%	24.00%	0.00%	27.78%
Distinction	4.00%	2.56%	32.00%	100.00%	12.22%
High Distinction	0.00%	2.56%	4.00%	0.00%	2.22%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

Overall Under-Graduate Average Final Mark



# **APPENDIX K**

## **PASS Program Statistics 2005**

# PASS PROGRAM STATISTICS

## 10 WM/WA

Session:  
Subject Number:  
Subject Name:  
Prepared By:  
Date:

Autumn 2005  
BMS101  
Systemic Anatomy  
P. Dawson  
21/7/05

### Overall Under-Graduate Final Grade

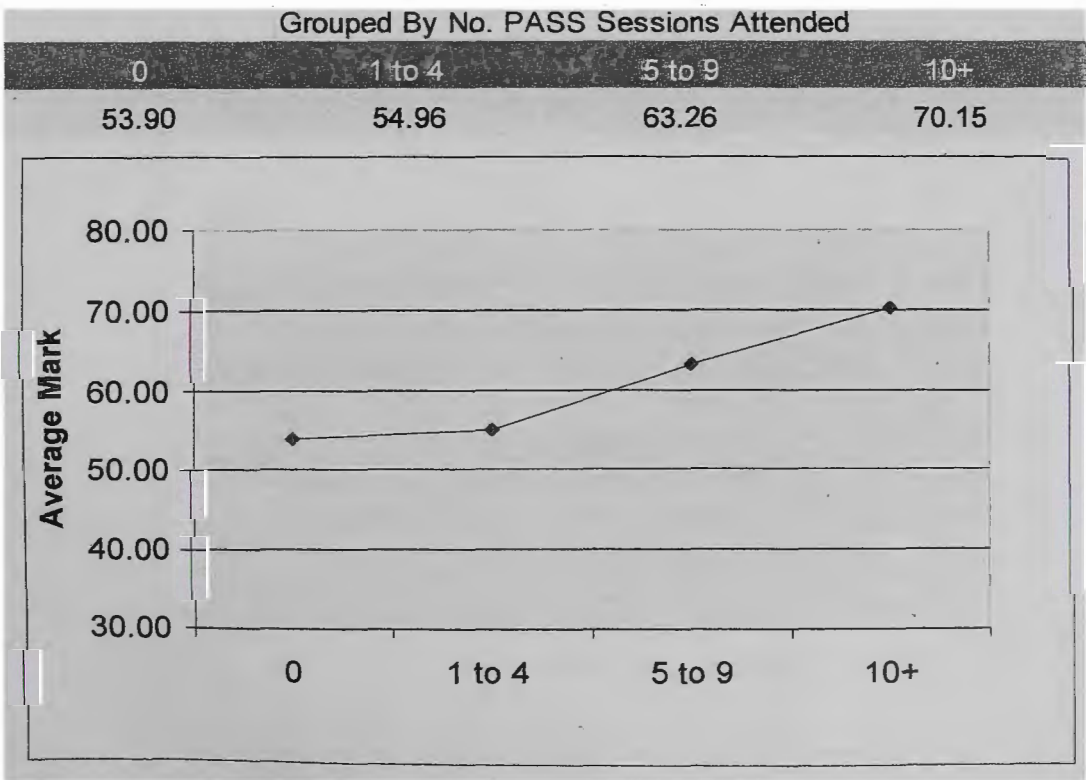
Categorised by number of PASS sessions attended versus Final Grade

	No. PASS Sessions Attended				
	0	1 to 4	5 to 9	10+	Total
Fail	21	16	5	1	43
Pass Conceded	12	7	5	1	25
Pass	38	25	18	6	87
Credit	16	11	15	6	48
Distinction	8	10	10	9	37
High Distinction	1	2	5	3	11
Total	96	71	58	26	251

Same information as a percentage

	No. PASS Sessions Attended				
	0	1 to 4	5 to 9	10+	Total
Fail	21.88%	22.54%	8.62%	3.85%	17.13%
Pass Conceded	12.50%	9.86%	8.62%	3.85%	9.96%
Pass	39.58%	35.21%	31.03%	23.08%	34.66%
Credit	16.67%	15.49%	25.86%	23.08%	19.12%
Distinction	8.33%	14.08%	17.24%	34.62%	14.74%
High Distinction	1.04%	2.82%	8.62%	11.54%	4.38%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

### Overall Under-Graduate Average Final Mark





# PASS PROGRAM STATISTICS

## 1 WM/WA

Session:

Autumn 2005

Subject Number:

EDUP131

Subject Name:

Anatomy

Prepared By:

P. Dawson

Date:

21/7/05

### Overall Under-Graduate Final Grade

Categorised by number of PASS sessions attended versus Final Grade

	No. PASS Sessions Attended			Total
	0	1 to 4	5 to 9	
Fail	15	4	0	19
Pass Conceded	5	6	1	12
Pass	11	11	6	28
Credit	1	3	4	8
Distinction	3	1	0	4
High Distinction	0	0	0	0
Total	35	25	11	71

Same information as a percentage

	No. PASS Sessions Attended			Total
	0	1 to 4	5 to 9	
Fail	42.86%	16.00%	0.00%	26.76%
Pass Conceded	14.29%	24.00%	9.09%	16.90%
Pass	31.43%	44.00%	54.55%	39.44%
Credit	2.86%	12.00%	36.36%	11.27%
Distinction	8.57%	4.00%	0.00%	5.63%
High Distinction	0.00%	0.00%	0.00%	0.00%
Total	100.00%	100.00%	100.00%	100.00%

### Overall Under-Graduate Average Final Mark

