

[O24] Exploration, experience and evaluation: Peer Assisted Study Scheme (PASS), sharing the experience of The University of Manchester: 480 1st year bioscience students

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PASS at the University of Manchester

Since 1995, at the University of Manchester, staff from 'Students as Partners'¹, have supported the implementation of PASS in over 20 subjects with more than 50% of these programmes in science based disciplines. PASS is a structured peer support scheme whereby trained, higher year students ('PASS Leaders') volunteer to support and facilitate the learning of 1st year students (participants). Leaders are paired up to co-lead and facilitate study sessions involving a group containing a maximum of 20 participants. The character of the PASS sessions is one of collaborative and active learning, as they are centred on discussion and interactions facilitated by the leaders. The primary purposes are to help participants to better integrate with university life and to provide a safe and supportive environment where participants can engage in self-directed learning practices, compare and develop learning strategies and study skills for HE, and so improve their understanding of the subject matter. Through this student-centred approach to learning, PASS intends to engage students as partners in their learning experience.

It is encouraged that for continued benefit, sessions are held weekly in a timetabled slot, which endorses the scheme in the students' eyes. Whilst attendance is not compulsory, PASS is presented as just another thing to attend; in this way students have to actively 'opt out' rather than 'opt in'. It is important to stress though that PASS is always considered supplemental to the core teaching and is not meant to be remedial.

The PASS model is based on Supplemental Instruction (SI), which was developed at the University of Missouri, Kansas City in 1973 (Arendale, 1994). Manchester adopted the '21 Principles' (The University of Manchester, 2007) developed by Jenni Wallace when she adapted the SI model in the 1990s for use in British Higher Education, (Rust and Wallace 1994, Wallace 2003,).

Using these guiding principles, the individual programmes in each discipline retain a common core, which ensures the standard of the Manchester scheme is maintained; as such, it is recognised as the UK National Benchmark. It is however the individual discipline and the students that take ownership of the programme and it is actively encouraged to engage students in its introduction and development. In promoting this level of engagement, one aims to end up with a scheme that is 'student owned and student led', which ensures that the scheme meets the needs of the student body within any particular discipline. At Manchester University, the schemes have developed to

such an extent that the PASS Leaders were asked to co-deliver a pre-conference workshop at the SI International Conference, hosted by Lund University, Sweden, in May 2006.

Why introduce a peer support scheme?

The University of Manchester has two complementary peer support programmes: peer mentoring and PASS. Its aims for doing so are:

- to enhance the quality, quantity and diversity of Student Learning within a discipline
- to involve students as partners in their learning experience
- to provide further opportunity for the development of intellectual and professional competencies
- to provide students with a supportive environment to assist the transition to Higher Education.

The introduction of PASS to the Faculty of Life Sciences

In 2005-06, PASS was launched in the Faculty of Life Sciences (FLS) for its 480 1st year bioscience undergraduates. According to the data available, Manchester University thus became the UK pioneer on two fronts: firstly for implementing PASS in biosciences and secondly for implementing PASS on such a large scale. The FLS introduced PASS to:

- provide participants with a supportive environment to assist the transition to Higher Education
- support participants, through a student-centred approach, with their understanding of course material and hopefully promote their development as independent learners
- improve participants' academic performance and reduce failure rate (especially for the two course units associated with PASS: 'Genes and Evolution' in semester 1 and 'Drugs: from molecules to man' in semester 2)
- enable students to get a leader's view of course expectations
- provide both participants and leaders with an opportunity to develop or improve a range of transferable and study skills
- generate real time feedback about our first year course
- reduce the amount of time 1st year course coordinators (particularly those of the associated course units) spend answering individual queries from a group of about 350 students per unit
- increase peer interaction and challenge the barrier between year groups, so as to install a sense of community within the FLS large cohorts

Implementation and delivery of the scheme in 2005-06

At a Faculty level, the scheme was supported by the Senior Tutor, Teaching Fellows (associated with the selected course units) and administrative staff. Training, guidance and ongoing support were provided by 'Students as Partners' staff, based in the Teaching, Learning and Assessment Office.

To enable a more effective evaluation of the effect of PASS on academic performance, a controlled experiment was designed that equally partitioned the 1st year cohort (480 students) into two groups who would be offered PASS over one semester: Group 1 in semester 1 and Group 2 in semester 2. 30 Leaders were recruited and trained who then worked in pairs with randomly assigned groups of approximately 15-17 students.

Basing their discussions around the two lecture units, the leaders ran sessions every week for 1 hour during a timetabled slot between two 1st year core lectures. These sessions were either based around suggested topics from an academic coordinator or from an 'agenda setting' exercise at the start of the session. Whilst academic topics were the focus of the session, many groups discussed academic related issues (study techniques, revision techniques, and the placement scheme) as well as non-course related issues (settling into halls, choosing new accommodation).

The ensuing discussions were facilitated by the PASS Leaders who helped the participants to work together toward a solution. They did so by using their own experience of the course, by sharing their study strategies, and by using the techniques that they have learnt during their training as leaders, i.e. questioning, utilising group dynamics and problem solving methods.

Weekly 'debrief' meetings were held that brought together the Leaders to share best practice, concerns and the nature of discussions that week. This motivated Leaders and also provided immediate feedback for the teaching team about how the way in which material was being received by 1st years.

Results of semester 1 2005 and Discussion

Participation

The participation rate is a good measure to see if the students have responded well to this voluntary scheme. To benefit from PASS, it has been shown that students need to attend regularly, i.e. at least 40-50% of the sessions in either a continuous or discontinuous fashion (Donelan and Kay, 1998; Coe *et al.*, 1999).

Each pair of leaders started with a group of approximately 15 participants, and in semester 1, 9 PASS sessions were offered from week 2 to week 11, with a break for reading week (week 6).

Out of the 232 students who were offered PASS, 23% became regular participants (i.e. attended 4 or more sessions). This was considered to be a very good level of participant retention for the pilot year (Coe *et al.*, 1999; Ashwin, 2002) as many established SI schemes do not exceed this figure (Ashwin, 2003).

21% of students did not attend at all and 56% of participants stopped attending after trying for 1, 2 or 3 sessions before reading week (see **Figure 1**). The most significant drop in attendance was from week 2 to week 3 (from 72% to 41%), which is consistent with the

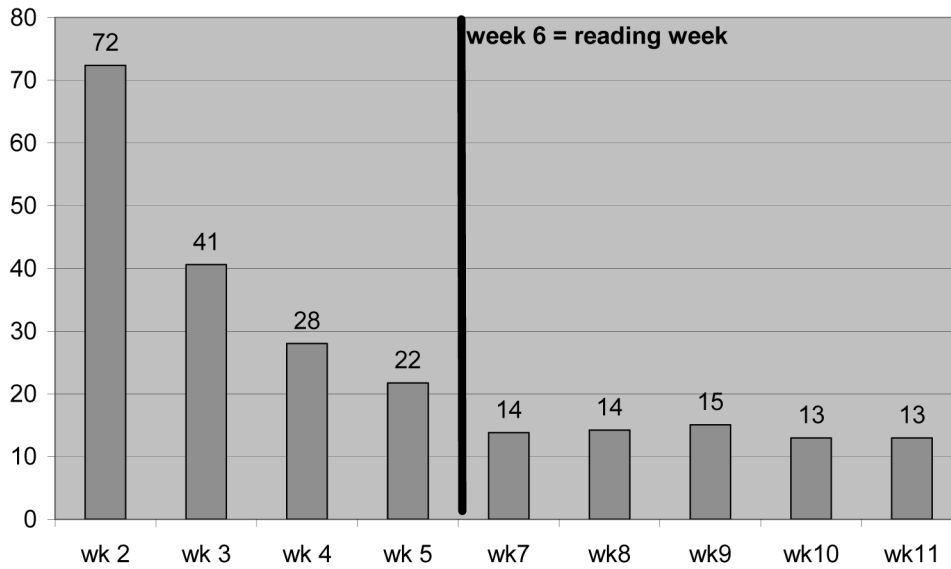


Figure 1: This graph presents the percentage of students (n=232) who attended PASS week by week in semester 1, 2005.

Impact of PASS on BL1521 results (genes and evolution)

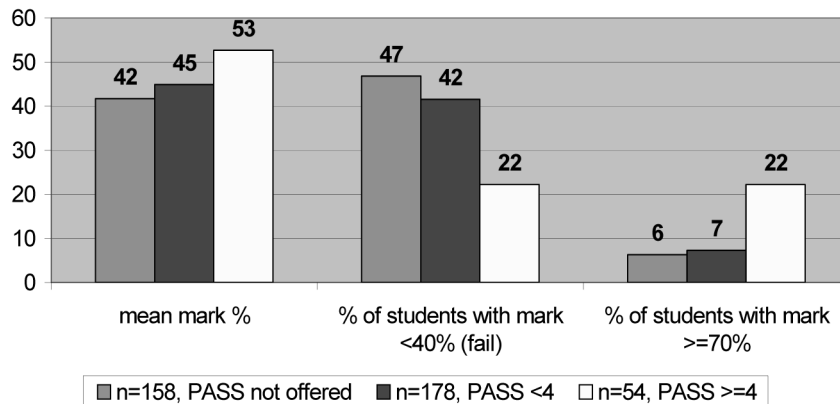


Figure 2: This graph presents the results obtained for BL1521 in January 2006 - mean mark (%), fail rate (% of students with mark < 40%) and 1st class rate (% of students with mark ≥ 70%) - for the regular PASS attendants (PASS ≥ 4) and the two control groups (PASS not offered, and PASS <4).

observation that many students did not receive a positive first impression of PASS. All the logistical elements were not in place by the week 2 session and the leaders reported the environment of the teaching laboratory was not ideal for so many large groups and made communication difficult.

Academic Performance

When evaluating the impact of PASS, it is rare to have experimental control groups and the analysis is usually carried out by comparing the results of ‘regular’ versus ‘non-regular’ participants. In our study, we had a large experimental control group of randomly selected students (~240 students who would be offered PASS in semester 2), and we also had a control group composed of students who never attended PASS or just attended for a trial period (less than 4 sessions)

Impact of PASS on BL1521 mark distribution (genes and evolution)

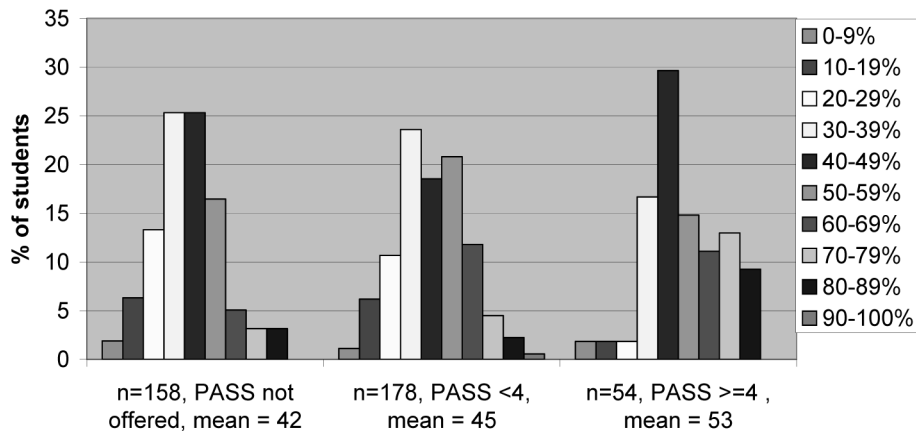


Figure 3: This graph compares the mark distributions obtained for BL1521 by the regular PASS attendants ($PASS \geq 4$) and the two control groups ($PASS$ not offered, and $PASS < 4$).

Genes and Evolution (BL1521) was the unit associated with PASS in semester 1 and participants were encouraged to discuss its content and 'problem sets'.

To evaluate the impact of PASS on participants' academic performance for BL1521, the results of three groups were compared: the experimental control group (students who were not offered PASS, $n=158$), the control group of non-regular participants (that attended 0, 1, 2 or 3 sessions, $n=178$), and the group of regular participants (that attended 4 or more sessions, $n=54$).

The results obtained (mean mark, fail rate, and 1st class rate (mark $\geq 70\%$)) are compared in **Figure 2**.

The two control groups performed similarly. They displayed results within the same range, and a t test confirmed that their respective mean mark were not significantly different ($p > 0.05$).

The regular participants to PASS did much better than either of the control groups:

- They showed a significantly higher mean mark: 53% compared to 42% ($\Delta 11$ points) for the experimental control group ($p < 0.001$), and 53% compared to 45% ($\Delta 8$ points) for the self-selected control group ($p < 0.01$).
- They showed a 2 fold reduction of the fail rate (22% compared to 47% and 42%). 12 regular participants failed the unit though, so clearly attending PASS does not guarantee a pass.
- They showed a 3 fold increase in the number of 1st class grades (22% compared to 6% and 7%).

The regular participants' mark distribution (**Figure 3**) revealed that this group was composed of students with diverse academic profiles and not simply of academically gifted students and students with problems. This suggests that PASS was not perceived as remedial or as a scheme for scholarly-oriented students only.

Looking at the overall mark distributions of each group, the two control groups followed a bell shaped distribution, whereas the regular participants' distribution was skewed positively. This shift towards higher marks for most categories compared with either control group suggests that attending PASS may have boosted the regular participants' grades by 10% or 20%.

Interestingly, when the 1st year students were invited to comment on the benefit gained from PASS, comments relating to 'understanding of course content' were the most frequent (70% occurrence), and came before comments relating to 'preparation for assessment' (40% occurrence). PASS therefore had engaged students successfully in a meaning gathering approach rather than a purely strategic one. This is an reassuring result, as Ashwin (2003) had shown in his report that a correlation between attendance at PASS and increase academic performance was only due to a more discerning understanding of assessment requirements, at the expense of a meaning oriented approach to learning.

Benefits (perceived by Leaders)

To evaluate whether PASS had succeeded in delivering its range of intended benefits to the leaders, a questionnaire was delivered in May 2006. Leaders were asked to indicate their level of agreement with a series of statements about the intended benefits of PASS. Leaders felt very positively towards the scheme:

- They all agreed that through PASS they developed/improved a wide range of skills: communication, team management, mentoring, team working, organisation, using own initiative, etc.
- They saw direct benefits to their own academic development as they became more self-aware as learners. For some, this translated into a change of behaviour towards becoming more autonomous and adopting a deep learning approach.
- The experience had had an impact on their personal development. They all claimed to be more confident at the end of it and felt valued by the Faculty staff. For some, this translated into being more focused and motivated towards their own courses as a result.

Conclusion

Our leaders must receive due credit for any successes of this pilot year as they have shown a commitment and enthusiasm throughout the whole experience. They also demonstrated a solid determination as they resisted the pressure to teach in order to retain students; even though this pressure was directly articulated by participants.

Based on the success of this pilot year, it was decided to expand PASS in 2006-07 and offer it to the first year cohort throughout the entire year. To address the shortcomings highlighted in the evaluation (data not shown here but will be discussed in presentation) and in response to the suggestions made to improve attendance, the following modifications have been made to the scheme in 2006-07:

- Our PASS and mentoring schemes have merged, so that the element of pastoral care undertaken by mentors (good supermarkets, accommodation for year 2 etc.) can be fully absorbed by the PASS leader, enabling the first session of PASS to focus on settling in at University, discussing course expectations and how PASS works.

- PASS is now generic to the whole 1st year course, and students decide weekly what is on the agenda. By placing the ownership of the scheme with the students, we expect it will continue to grow in strength and impact.
- To ensure that leaders always have something to talk about during the session though, team building activities and prompts for discussions about study skills have been devised.
- Groups are now formed from two tutorial groups, so as to increase familiarity amongst participants and hopefully improve attendance. This suggestion was approved by the 2005-06 participants at 65%.
- The PASS team has been expanded: a FLS intern together with a PASS student coordinator now effectively run the scheme. They also have put into place a PASS student committee, demonstrating that in its second year running, the leaders respond really well to the opportunity to make the scheme their own.

The introduction of PASS in FLS proved challenging but with the recognised benefits from Leaders and participants, support and encouragement from staff inside and outside the Faculty, its expansion to the entire year was almost inevitable. This presentation will share the benefits, challenges and these results in greater detail as well as a comparative study with this year's 1st semester results.

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