

Students and staff in Mathematics, together with colleagues from the Teaching Centre, are working to enhance significantly the experience of second-year undergraduate mathematics students. This newsletter is intended to raise awareness of the project objectives, what has been achieved so far, and our plans for the coming months.

In this third issue of the SYMB Ω newsletter we highlight an important aspect of the project - peer support provided by the *Student Leader* scheme. The project was introduced in the previous issues - available from <http://sym.lboro.ac.uk>. Thirteen mathematics students, referred to as *Student Leaders*, were recruited in semester 2 of 2010/2011 when they were themselves second year students. Their role is to support and guide current second year students throughout the module *Vector Spaces*.

At the time of writing this newsletter, the peer support scheme has been running for ten weeks. We report on some of the views of the module leader, Dr Alex Strohmaier. We present data which shows the extent of the uptake of the scheme by the second year students. Finally, we present some summary statistics of the first in-class test for *Vector Spaces* and the relative performance of those students who did and who did not avail themselves of the opportunity for peer support.



Student leaders running a peer support session for *Vector Spaces*

Some views from the module leader

Lecturer and module leader for *Vector Spaces*, Dr Alex Strohmaier, describes his motivation for getting involved with the SYMB Ω Project, why he is interested in peer support, and why he thinks that video resources produced by the student interns are so valuable.



Dr Alex Strohmaier

Alex writes:

Teaching of university-style mathematics can differ quite significantly from teaching at schools.

Lectures at universities are more sophisticated, they progress at a faster pace, and the responsibility for learning the material is transferred to the student to a much greater degree. This is a learning process students have to go through during their first and second years. Apart from the support provided by the lecturing staff and by the Mathematics Learning Support Centre, an essential part of the university education and experience is the interaction with other students.

*Tutorial systems run by PhD students or even advanced undergraduates can help foster a culture of communication between students. The Student Leader sessions run as part of the SYMB Ω project are designed to achieve this in a more direct way. Students who have passed the module *Vector Spaces* only last year meet with this year's cohort on a weekly basis to discuss the content of the module. This contrasts with the classical teaching situation in which a lecturer or PhD student is able to answer all questions, solve all problems, or guide the students to solutions.*

continued.....

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Further details on the items in this newsletter can be found on
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Alex Strohmaier writes....

continued.....

In the Student Leader sessions, the second year students have to take responsibility and ownership of their own learning and of their own thoughts: they have to check the correctness of solutions on their own as there is no authority who is able to do that for them (this is a similar situation to when scientists meet to discuss their research). The Student Leaders, although they have recently studied the module, are not experts – their role is to guide and encourage the second years to come to solutions of their own.



So far peer support for the module Vector Spaces has been very successful and has been embraced enthusiastically by both second year students and the Student Leaders. Attendance rates are good (see table opposite) even though the activity has not been advertised as compulsory. From my point of view, as the responsible examiner, the peer support system has been a success so far. I expect it to have a very positive effect on the module in the sense that the students will come to a deeper understanding of the material and they will be prepared better to tackle their third year modules. Whether or not it helps to reduce the number of failures this year remains to be seen and will probably also depend on how the improved interaction and the group dynamics generated by it reaches out to those students who do not take direct advantage of this system.

Videos and additional material have been developed over the summer by the student interns and are available on Learn for the students to use. The videos in particular are not there to replace or repeat the lecture but focus on certain algorithmic methods such as the Gram-Schmidt process. Minimal performance in the exam can only be achieved if these algorithmic processes are understood well enough and are applied correctly. Providing very detailed information on Learn allowed me to focus more, in the lectures, on abstract theory and on examples that cannot easily be illustrated by online examples (it also allowed to create room for a fire alarm in the lecture that would otherwise have ruined my timetable!).

Dr Alex Strohmaier

Students... voting with their feet!

So how have the current second year students taken to the peer support on offer in Semester 1 ?

There are 83 students registered for the module. 57 of these have accessed peer support sessions at least once. The table shows the number attending each week. (Note: no support was offered in Week 6). The project team is delighted with this level of engagement with an optional activity.

	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10
No. attending	45	43	30	39	42	*	15	23	31	-

At the time of writing we have the results from a single assessment via an in-class invigilated test on Vector Spaces. The results show considerably poorer performance by those students who have not engaged with peer support at all. We attribute no cause/effect here, but we hope this data will encourage students who are not participating in the sessions to think again about their approach to studying as we approach the start of semester 2. Further analysis will be undertaken when the examination results are available.

Accessed Peer Support	N	Mean %
Yes 4 or more times	39	60%
Yes 1-3 times	18	44%
Not at all	26	36%



Peer support in practice

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