Have you seen *More Maths Grads in a Box*?

Did you look inside it?

Have you found and read the articles in the volume *Maths at University*?

This review is for people who can’t answer “yes” to these three questions. Most of the content of the *Box*, which has been distributed to schools and universities, is made up of resources which will be of value to schools, but not of much interest in universities. It would be a great shame if, as a result, *Maths at University* does not get the attention it deserves. It contains much material of great interest to anyone involved in teaching mathematics to undergraduates, and, in particular, to those responsible for the organization of teaching and the curriculum.

The articles it contains report research conducted by the authors with students from several universities as part of the *More Maths Grads* project which came to an end last year. I should say that I played a small part in facilitating some of the research, but I have not had any involvement in producing this volume, and so I think I can review it objectively.

Although the findings of the authors’ surveys of staff and students should not come as a great surprise, they convey some unpleasant messages which, perhaps because they are uncomfortable to the staff, we are inclined to ignore. There is a big mismatch between many students’ motivations for choosing a mathematics degree, and what many universities provide. This leads to tensions which are reflected in disdain for students, and in some cases, even hostility.

The evidence reported in the chapter *Why do students study maths?* suggests that for most students their career aims are more important than their interest and enjoyment in mathematics. Although only a minority of new students had plans for a specific career, those that did overwhelmingly aspired to careers in the financial section – this was before the credit crunch – with 20% mentioning teaching, and only 3% scientific or mathematical careers or further study in mathematics.

Most of the staff, on the other hand, would say that they are mainly driven by their love of mathematics, and that research is the most important thing that they do, although it is not always clear whether this is just what they think they ought to say.

In this light it is not surprising that some rather alarming messages emerge from the articles summarizing the authors’ finding on the student and staff experience. Although many students say positive things about their course and their teachers, rather a high proportion say that the effect of their course has been to reduce their
confidence in, and enjoyment of, mathematics. This should cause concern even though, in the absence of comparative data from other subjects, it is difficult to know whether this is a particular problem for mathematics.

In the innocuously titled chapter *Some thoughts on curriculum content* the authors put forward the “outrageous proposition that we should cut, say, one-third of our curriculum content from our courses”.

I once shocked a Chinese student by telling her that in Leeds the pass mark was 40%. Our educational culture awards degrees to students who have shown that they have failed to master a large part of our courses. For most students – and especially potential teachers – a good understanding of the material in the first two years of a standard mathematics course, would be more useful and appropriate than what they achieve at present. A less crowded curriculum for the majority of students might also increase confidence and enjoyment. So, I think that their proposition needs to be taken seriously, although I doubt whether it will be in departments where so much emphasis is placed on research. Also, supporting the idea that a student could graduaterespectably having taken only what are now regarded as level 2 courses, might create conflict with the, so-called, Quality Assurance Agency, which, as readers of George Orwell might suspect from its title, has done its bit to undermine the real quality of mathematics degrees.

The report includes sections covering “Access to mathematics degrees: how and why do they get here”, “Student and staff experience of life at university”, “Student support”, “Teaching and engagement”, “Assessment” and “Curriculum content and course design”. Several of these sections include some case studies. The final section contains some conclusions and reflections, and a list of recommendations, which all merit serious consideration.

“Maths at University contains much material of great interest to anyone involved in teaching mathematics to undergraduates”

I have not had the space in this review to discuss all this stimulating material, which I encourage you to read. If you cannot find *Maths at University* in the Box, you may download it from the website: [http://maths.shu.ac.uk/moremathsgrads/](http://maths.shu.ac.uk/moremathsgrads/) and I understand that, if you ask quickly enough, one of the authors (N.Challis@shu.ac.uk) will send you a copy.