AS/A2 Mathematics Consultation

On 24th January Barbara Ball, ATM's Professional officer, and Gill Hatch, a long-standing member of ATM and the convenor of our joint working group with MA: Teaching and Learning Undergraduate Maths, met with Chris Jones, Head of QCA's Curriculum Division and Jack Abramsky, Principal Officer for Mathematics at QCA. This informal meeting gave us the opportunity to discuss the areas of concern raised by ATM members, as well as the possible ways forward. What follows is a brief summary of our two-hour meeting.

Issues of Concern

- There is currently too much content in the AS specifications.
- The expectation that students do four or five AS courses in Y12, reducing to three A2 courses in Y13 means that schools have to enable students to complete three modules in Y12. This is very difficult to achieve.
- The time pressure means that there is a tendency to teach techniques rather than mathematical understanding.
- The poor AS results of June 2001 probably means that many students who could have achieved an A2 qualification in Mathematics have given up.
- Fewer Y12 students started AS Mathematics in September 2001, because of the general perception that AS Mathematics is a hard option.
- The poor results were due mainly to the lack of time for revising for the examination and consolidating understanding.
- The restriction of not being able to award any marks for the assumed knowledge specified in the criteria may have made the papers more difficult than was intended.
- More students started AS Mathematics in 2000 than started A-level Mathematics in previous years. This led to larger teaching groups with a wider range of prior achievement and knowledge. This made it difficult for groups to work at the pace required to complete three modules in one year.
- AS/A2 Mathematics is trying to meet the needs of too many end users. The mathematical knowledge, skills and understanding needed by someone who is going on to study a mathematics degree are very different from those needed by someone who is considering a degree in a different discipline or employment at 18.
- Restrictions on the use of graphical calculators made the papers more difficult. But there is a problem about allowing algebraic manipulators.

Possible Ways Forward Suggested by ATM

- Move some of the AS content into A2.
- Ease the AS papers, without compromising standards. This can be done by setting some straightforward questions which assess techniques and by providing more "scaffolding" in complicated questions.
- Have a choice of questions for the more difficult topics
- Introduce an additional AS in mathematical thinking skills. This would help students to develop their problem-solving skills by tackling non-routine problems based on the AS pure mathematics content.
- Reduce the applications of mathematics in the criteria and concentrate on the pure mathematics. Why not have an AS Statistics to complement this?
- Delay by a year the date by which specifications need to be ready. The current proposal that they are ready for teaching to begin in September 2003 means that most of the work would have to be done before August 2002, when the A2 results will give us a fuller picture of the current situation.

The Broader Picture

Our views were sought on the whole range of qualifications in mathematics available post 16. We feel that no new qualifications are needed, but that the National Qualifications Framework is not well understood by the profession, let alone by students, parents, employers and HE institutions. The result is that some qualifications are not valued.

In our view it is very difficult to deliver the key skill of Application of Number, simply by embedding it in other courses of study.

It was a useful meeting and the ATM representatives left it feeling that QCA is really listening to what teachers and others involved have to say.

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