PROVOCATION

A conversation between two old men!

**Alpha:** There could only be a few members of our profession who were surprised by the latest findings from Ofsted in their recent report *Mathematics: understanding the score*. Conclusions such as teaching-to-the-test is failing pupils, nearly half of classes seen were not good enough and so on, are not surprising in a climate where schools have had to work within the target culture that presently bedevils our schools. We all know what happens when targets are not met – consequences that, for a school and its wider community, may produce short-term improvements but do little to improve the long-term culture of quality. This demented pursuit of targets has resulted in a dispirited profession with many teachers now talking only of the levels needed for test success. Many school corridors are plastered with posters fully detailing what needs to be done by the pupils if they are to get a level 6, 7, 8 or whatever, but little else to stimulate or challenge them. Imagine what this alone does to a pupil’s confidence!

**Beta:** You are absolutely right, but, you know, that Ofsted report also highlighted some valuable findings. It concluded that ‘too much teaching concentrates on the acquisition of sets of disparate skills needed to pass examinations’. Inspectors had found that pupils ‘wanted to do well in mathematics … but were rarely excited by it’. It went on to say that they lacked confidence ‘when faced with unusual or new problems’ and that ‘their recall of knowledge and techniques was stronger than their understanding’. All of this suggests that mathematics teachers, by needing to prepare pupils for frequent tests that assess only a small part of what should comprise school mathematics, have taken their eyes off the ball of a rounded, coherent, mathematics curriculum that focuses on developing pupils’ mathematical powers.

**Alpha:** Many schools today provide booster classes and opportunities for exam and test revision. But this has more to do with improving a school’s profile in league tables than giving pupils the real insights into, and deeper understanding of, the mathematics that you are alluding to. Let us be honest, this is what many teachers now do, in a state of reaction, instead of trying to find ways to genuinely empower children to do mathematics. This is at a time when this target-led culture ensures that, for many, only some of the national curriculum (NC) is taught. Oh, and I remember that, at the outset, the NC was intended to be a proper subset of a school’s mathematics curriculum! It was a minimalist charter, not a completed orthodoxy to be strictly adhered to.

**Beta:** Again, you are right, and the NC did, at the outset, include using and applying mathematics as a key component. The intention, you will remember, was for this to provide scope for students to develop their powers of reasoning and to gain a conceptual understanding of the mathematics they were studying. The Ofsted report acknowledges the loss of this feature of the NC in most schools. It calls for schools to ‘ensure pupils have a wide range of opportunities to use and apply mathematics’ and it recommends that the DCSF reintroduces ‘separate reporting of pupils’ attainment in using and applying mathematics … at the end of each key stage’ because, it states, this would ‘reflect the raised profile given to key concepts and processes in the new secondary National Curriculum’.

**Alpha:** You know, too often, when I’m in school, I hear pupils asking – “is it in the curriculum?” They see no point in doing something they will not be examined on. I guess we both know that pupils always did look ahead to GCSE or its forerunners, but never to the extent that they do now. However, the Government has finally decided that they will scrap testing at the end of Year 9, although I’m very wary of what they are proposing instead – more rigour in assessment and reporting is what they have called for!

**Beta:** I’m wary too. The difference, I guess, is that there is now the possibility that schools and teachers will be able to take back some control of what they are doing and of how they go about assessing it. What concerns me is that there are many teachers who will have worked for most of their professional lives in the current culture and that to develop their classrooms into lively hotbeds of mathematical investigation and enquiry will be a
real challenge for them. They will also be faced with having to change the perceptions of their pupils, who have grown up on a diet, especially in secondary schools, of rule- and step-following, with little experience of being challenged over long periods of time.

**Alpha:** What I’m currently worrying about is that fewer children are now being taught by experienced subject specialists than ever before. Our profession is haemorrhaging mature staff whose experiences are valid if their values and insights are to be transferred to other generations of teachers. How can these older staff be retained? How can the profession be made more attractive? Many heads would like answers to these questions. Should we not be asking why this loss of key personnel is happening? What is it about the profession in general that makes many seek an early release?

**Beta:** I would like to believe that those teachers you refer to who are not in the classroom have left because they felt that they were not able to work in the ways that they believe are necessary to give their pupils the mathematics education they deserve. This is, as you say, a situation that has to be reversed. Again, I’m going back to the Ofsted report, because one of its helpful recommendations relates to ATM. It says that NCETM should ‘work with local authorities and other groups such as subject associations (my emphasis) to improve opportunities for networking to share good practice locally and to promote developmental work . . .’. Do you know, that sounds exactly like the sort of thing that ATM has always done well – indeed has been a cornerstone of its work over nearly 60 years. When I first went to ATM branch meetings they would almost always commence with a demonstration lesson – now that really focused on sharing good practice locally and it certainly promoted developmental work.

**Alpha:** It is most certainly time that teachers and others in the education sector rejoined the debate – not least so that ATM, individually and collectively, can inform government about the reality of mathematics teaching and the lamentable pressure that has recently been brought to bear within classrooms. They must also direct their efforts toward reclaiming mathematics classrooms for real learning. We, in ATM, need to be taking a lead in helping this debate.

**Beta:** We have the expertise; we have the experience; do we have the will?

**Alpha:** It is time for us all to act!

ATM would like those of you who have ‘eavesdropped’ on this discussion to join the debate about ways forward. Please feed your views and comments to the Forum Pages on the ATM website or write to the editors of *MT*.

The conversation will be a regular feature of *MT* – if you would like to suggest an item for their conversational agenda please contact, in the first instance, a member of the editorial team.

---

Editors’ note: The names Alpha and Beta, to preserve the anonymity of the old men, have been adopted in the spirit of a similar method used in *Proofs and Refutations – The Logic of Mathematical Discovery* by Imre Lakatos. This is a remarkable book, first published by CUP in 1976, which still demands attention.

---

This article is intended to provoke the reader. We would like you to respond through the forum on the website. There are several threads running through this article that could be considered for discussion:

- The target culture
- Teaching disparate skills
- The effect of league tables on teaching and learning
- The vacuum left by the tests – what goes there?
- The lack of subject specialists – how to make the profession attractive.
- The role of ATM in setting up networks.

To give your views on these threads or anything else that arises from this article go to the ATM forum: [www.atm.org.uk/forum/num=1227612171](http://www.atm.org.uk/forum/num=1227612171) or write to the Editors.
The attached document has been downloaded or otherwise acquired from the website of the Association of Teachers of Mathematics (ATM) at www.atm.org.uk. Legitimate uses of this document include printing of one copy for personal use, reasonable duplication for academic and educational purposes. It may not be used for any other purpose in any way that may be deleterious to the work, aims, principles or ends of ATM.

Neither the original electronic or digital version nor this paper version, no matter by whom or in what form it is reproduced, may be re-published, transmitted electronically or digitally, projected or otherwise used outside the above standard copyright permissions. The electronic or digital version may not be uploaded to a website or other server. In addition to the evident watermark the files are digitally watermarked such that they can be found on the Internet wherever they may be posted.

Any copies of this document MUST be accompanied by a copy of this page in its entirety.

If you want to reproduce this document beyond the restricted permissions here, then application MUST be made for EXPRESS permission to copyright@atm.org.uk.

The work that went into the research, production and preparation of this document has to be supported somehow. ATM receives its financing from only two principle sources: membership subscriptions and sales of books, software and other resources.

Membership of the ATM will help you through:

• Six issues per year of a professional journal, which focus on the learning and teaching of maths. Ideas for the classroom, personal experiences and shared thoughts about developing learners’ understanding.
• Professional development courses tailored to your needs. Agree the content with us and we do the rest.
• Easter conference, which brings together teachers interested in learning and teaching mathematics, with excellent speakers and workshops and seminars led by experienced facilitators.
• Regular e-newsletters keeping you up to date with developments in the learning and teaching of mathematics.
• Generous discounts on a wide range of publications and software.
• A network of mathematics educators around the United Kingdom to share good practice or ask advice.
• Active campaigning. The ATM campaigns at all levels towards: encouraging increased understanding and enjoyment of mathematics; encouraging increased understanding of how people learn mathematics; encouraging the sharing and evaluation of teaching and learning strategies and practices; promoting the exploration of new ideas and possibilities and initiating and contributing to discussion of and developments in mathematics education at all levels.
• Representation on national bodies helping to formulate policy in mathematics education.
• Software demonstrations by arrangement.

Personal members get the following additional benefits:

• Access to a members only part of the popular ATM website giving you access to sample materials and up to date information.
• Advice on resources, curriculum development and current research relating to mathematics education.
• Optional membership of a working group being inspired by working with other colleagues on a specific project.
• Special rates at the annual conference
• Information about current legislation relating to your job.
• Tax deductible personal subscription, making it even better value

Additional benefits

The ATM is constantly looking to improve the benefits for members. Please visit www.atm.org.uk regularly for new details.

LINK: www.atm.org.uk/join/index.html

Academic copyright permission does NOT extend to publishing on Internet or similar system. Provide link ONLY.