

NEWS FROM ATM

The importance of learning...

I have been asked to make a response to the recent White Paper, *The Importance of Teaching* (DFE, 2010). With much of the detail still to be made clear there is little on which to directly comment but there are many issues raised which merit continued watchfulness, and a readiness to contribute, both as an Association and as individuals, to signalled reviews. Whilst there are many areas on which I could comment I will restrict myself to those I see as key. As my background is in the secondary sector I apologise for any secondary bias that is apparent in my commentary.

It is refreshing to see that the White Paper looks outside these shores and refers to much international evidence in setting up its rationale and strategies. These data are valid but must be carefully interpreted. When the civil servants drew this paper together, they appear to have neglected to look at certain key indicators.

In the latest TIMMs study (Gonzalez et al, 2009) in mathematics it was found that England came seventh at grade 4 and grade 8 coming below only the expected Pacific Rim countries and Russia, Hungary and Kazakhstan. Furthermore England is the most improved country (from 1995 to 2007) at grade 4 and fifth at grade 8. These performances are better than those from PISA (OECD 2010).

Askew et al (2010) notes that *'England regularly gets positioned towards the top of the second ranked countries and its performance is fairly stable over time.'* (p.9). Whilst this is clearly not a state of affairs we wish to perpetuate we should be careful in interpreting what this actually means and not rush in to change before the direction of the revisions is established.

That the status of teaching as a profession in the UK has declined over many years is generally agreed, but I

would dispute that this is due to the quality of degrees held by those entering the profession. Conversely, it is just as valid to attribute the alleged decline in the quality of entrants (as defined by the Government) on the declining status of the profession. Some would argue that increasing control from the centre, through a nationalised curriculum, nationalised assessment and nationalised pedagogy, namely the national strategies, has disempowered teachers to the point of de-professionalization. I believe that years of criticism by politicians and OfSTED, egged on by a vocal media, have had far more impact on the status of the profession than any other factor.

There is some discussion about the status of teaching in other countries in the White Paper with scant regard to the unique socio-economic factors that differentiate our societies. In Finland there is strong competition to enter the teaching profession in a society where pay differentials are relatively flat (Wilkinson and Pickett in Askew, 2010) and in other high attaining countries education is held in high regard.

The Governments' intention to limit entry to the teaching profession to those with only a 2:2 degree or better, should be a concern for the mathematics community where 30% of lessons are currently taught by non-specialists (Smith, 2004). Whilst the expansion of the *Teach First* programme could be viewed as a positive step, the proposed increase to 1140 places (to include primary) (p.21, DFE, 2010) can hardly plug the gaping hole in the mathematics workforce, with a shortfall of 3,400 specialist mathematics teachers in secondary schools in 2004 (Smith, 2004).

More hopeful is the intention to provide stronger incentives for the best graduates to come into shortage subjects including mathematics. I would urge the

government to look quickly into the proposal to pay back the student loans of high-performing graduates (p.22, DFE, 2010). However, as indicated above, the problem in recruiting mathematics teachers is beyond a quick fix and I recommend that the government revisits the recommendations of the Smith Report (2004).

It is pleasing to see that the Government recognises there is a need for more specialist mathematics teachers in primary schools (p.45) and I hope that this means that they will continue and develop the *MaST* programme.

The desire to see the National Curriculum continuing to inform the design and content of assessments is positive (p.42, DFE, 2010). Oates (2010) suggests that qualifications specifications should identify elements of 'deep learning' essential to subjects, and not a narrow range of 'surface elements'.

The review of key stage two tests is timely and I recommend that the scope of the review is expanded to consider whether or not the tests have the effect of skewing the curriculum in the upper years of primary education that much evidence suggests. It is worthwhile noting that the tests have been demonstrated as theoretically unreliable for individual pupils (William, 2001) but may be useful for benchmarking cohorts, institutions and national progress.

The decision to review the modular nature of GCSE mathematics courses is one that I support. The fragmentation of the GCSE mathematics curriculum in many schools has, I believe, led to poorer understanding of the subject by many students. It has also, indirectly, helped lead to the increase in early entry for mathematics GCSE over which I share ACME's concerns (ACME, 2010a).

When reviewing the A level courses it is critical that the Government listen to a

a response to the white paper

wider range of stakeholders than University Mathematics Faculties. Many of the successful A level candidates will study a wide range of courses and it would be unproductive if mathematics A level was once again perceived as ‘too hard’, leading to a reduction in take up. ACME’s letter of July 2010 (ACME, 2010b) sums up a variety of arguments well, though it does predate the White Paper.

The intention to support the teaching of A level further mathematics with funding initiatives is welcomed. It should be recognised that whilst the take up of further mathematics is on upward trend (Stripp, 2010) the number of students studying it at an individual institution make it a relatively expensive course. This is against a background where the funding of A level places in schools is to be brought into line with colleges at the average cost of £280 per student per annum (p.83, DFE, 2010) to schools. Perhaps Mr Gove might consider a ‘subject premium’ in a similar way to which he is introducing a ‘pupil premium’ in order to protect subjects at risk of falling take-up.

I am pleased to see that the White Paper recognises that the National Curriculum is overloaded (p.40, DFE, 2010) and that the Government intends to reduce the amount of guidance and other bureaucracy that has grown up in recent years. The intention to ‘outline a core of knowledge in the traditional subject disciplines’ (p.42, DFE, 2010) is one that should be very carefully thought through. A productive starting point would be Geoff Faux’s ‘big ideas in primary mathematics’ published in *MT*.

In Japan mathematics teachers have the goal of developing personal qualities (p.42, Askew et al, 2010), Leitch (2006) described IT, communications and team working as key skills for employability:

should these be part of the core?

Oates notes that analysis of high performing systems can be helpful in determining curriculum content and sequencing (2010) and describes how a concept driven curriculum can focus on ‘*deep learning – fewer topics pursued to greater depth*’. I would suggest that any review considers this carefully; other evidence has demonstrated the importance of students making connections in mathematics (Askew, 1997, Williams, 2008), this could be achieved by grouping content by concept rather than the rather arbitrary Achievement Objectives currently in place. ‘*Spending more time on larger “blocks” of cognate material allowed more secure learning to be achieved.*’ (Oates, 2010)

The Government review of the National Curriculum intends to look at the evidence from ‘*the highest performing jurisdictions*’ (p.42, DFE, 2010). However we know that performance in International Comparisons may be better explained by the match between the test items and the curriculum of the country being studied (p.44, Askew et al, 2010).

Care is needed to ensure that improvement in International Comparisons is achieved by aligning our curriculum with the OECD and PISA test criteria and that these are the directions in which we wish our curriculum to travel. A curriculum defined by its assessment is unlikely to satisfy the educational, social, and economic purposes of such a curriculum. It is worth noting that the UK’s relative poor performance at Levels 5 & 6 in the 2009 PISA study (p.131, OECD, 2010) may be related to the nature of the test items at these levels. These items are more akin to the ‘functional’ questions in the newer GCSEs and indeed the PISA level descriptors (p.130, OECD, 2010) have more in common with the functional skills

standards (QCA, 2007) than the current GCSE specifications.

Whilst the White Paper has a section devoted to Early Years Foundation Stage (pp.43-44, DFE, 2010) there is little that relates to numeracy. I suspect that we will need to wait for the outcomes of Tickell’s review into the same. One should take heed of the drive towards synthetic phonics from a Government who have stated that ‘*Teachers, not bureaucrats or Ministers, know best how to teach.*’ (p.41, DFE, 2010).

When reviewing the mathematics National Curriculum I urge the Government to take heed of the work of Askew et al (2010) and Oates (2010) and note the emphases they put on concepts and principles as well as the ‘key knowledge’. A review emphasising the key concepts of mathematics should not, and need not, incorporate any ‘back-to-basics’ approaches.

Care should be taken to be clear that current educational systems are not those that have delivered the results seen in International Comparisons, but those systems that have educated those being measured. As Oates notes ‘*Finland may be departing from the very things which assured its current success*’ (p.12, 2010).

As the Secretary of State himself states about the review of the National Curriculum ‘*This... has to be done with great care to avoid learning the wrong lessons from countries with very different cultures*’ (Foreword to Oates, 2010).

I hope he pays careful attention to his own words.

John White, Hon. Secretary.

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