

2009 SUMMER SCHOOL

SUBJECT PRESENTATIONS PANEL DISCUSSION IN RESPONSE TO PRESENTATIONS PANEL OF SIXTH FORMERS DISCUSSION WITH MICHAEL GOVE MP

SUBJECT PRESENTATIONS

Conclusions of all the delegates' discussions at the Residential programme were presented to a panel of educationalists on the final morning. The main conclusions were:

Maths:

What teachers have gained from the Residential course

1. Teachers have been able to develop links and collaborative networks with local schools and with universities. There is also the prospect of furthering such links through the PTI Schools Programme and the online community of the National Council for Excellence in the Teaching of Mathematics.
2. On the course, teachers have been able to exchange ideas with one another about different qualifications and curricula, and to share good practice in the teaching of various topics.
3. Teachers have also been stimulated by the workshops, which introduced them to new resources and encouraged them to try out new ideas, particularly from the visit to the NRICH Maths Project in Cambridge. The lectures provided were excellent, and they were able to learn about the diverse experiences of people who teach Mathematics in widely different contexts and environments.

Issues in Mathematics education

1. Teachers feel that there is a failure to challenge the most able in the present two-tier examination system and suggest that a new Double Maths qualification could address this shortcoming.
2. Teachers would welcome more resources and opportunities to be provided for subject-specific CPD. At the same time, they are concerned about the possible negative effect of the new Cover arrangements in schools.
3. Teachers would be reassured to see that Inspectors have the same understanding as they do about what constitutes good practice, and that they are less tightly wedded to specific formulae concerning teaching, such as lesson plans and measurable attainments.

4. Following so much recent change in the Mathematics curriculum and modes of assessment, teachers would appreciate a period of stability. Whilst teachers feel positive and empowered to tackle current issues and welcome many of the new initiatives, these initiatives need time in order to become fully embedded and embraced.

Science:

The importance of good Science

1. Speakers have demonstrated how the work of scientists is essential for the future of the planet. The importance of good Science makes the effective teaching of it all the more necessary. Pupils have identified that good teaching requires enthusiasm, confidence, and depth of knowledge. Teachers must also be prepared to be challenging in order to stimulate their pupils.
2. The teaching of bad Science, on the other hand, is damaging. Examples of this include the use of inadequate or incorrect data.
3. The teachers have been inspired by the course to refine their teaching practices, and recognise that the PTI Schools Programme offers opportunities for them to maintain the level of inspiration offered on the course.

Issues in Science education

1. The teachers have the freedom to develop good practice at Key Stage 3, due to the removal of National Curriculum tests; they have been able to get their pupils fully engaged with the subject and think scientifically. There is, however, a lack of such freedom and flexibility at Key Stages 4 and 5, which is inhibiting and frustrating.
2. Whereas good teaching employs a variety of strategies to suit the different learning styles of individual pupils, this is not the case for the modes of assessment which currently exist. As a result, assessments neither challenge the brightest nor give due recognition to lower achievers.
3. Science teachers need to be more closely involved in the evolution of the Science curriculum in order to bring more evidence-based thinking to the process and reduce the present discontinuity.

PANEL DISCUSSION IN RESPONSE TO PRESENTATIONS

Bernice McCabe (BMC)	Chair
John Coles (JC)	Director General, Schools Directorate, DCSF
Liz Francis (LF)	Director of Workforce Strategy, TDA
Prof John Holman (JH)	Director, National Science Learning Centre
Prof Celia Hoyles (CH)	Director, National Centre for Excellence in the Teaching of Mathematics

The main points made in response to the presentations given by Science and Mathematics teachers were:

JC: There are some powerful messages coming across from these presentations: the feeling of empowerment that you get from this course to go out and tackle your own problems (I completely support you in that); the importance of subject knowledge, which we do indeed recognise in the Department but probably don't give enough emphasis to: and the plea for a period of stability, about which I can only say that we'll do our best; we do accept that curriculum qualification changes coming in quick succession are difficult to deal with.

Peter Manns: There seems to be some confusion over the ways in which the new Rarely Cover policy is implemented. Many delegates feel that school trips and attendance at CPD events like this will be threatened because colleagues will not be allowed to cover for them and the cost of buying in supply teachers will be too great.

LF: The Rarely Cover policy is one of the strands in a national agreement with the Unions to reduce overload on teachers. The effectiveness of Continuous Professional Development (CPD) is judged by its impact in the classroom; the best of it is likely to be collaborative and based on the work-place, with a possible input of external expertise. And CPD for individuals needs to go hand in hand with the school structure that makes use of it. If the senior management of a school is satisfied about the value of a CPD event like the PTI Summer School, there are ways of overcoming the Rarely Cover problem, through creative timetabling for instance.

Stephen Miles: The PTI Schools Programme meets just those criteria which Liz Francis has identified as being characteristic of good CPD – with the additional distinctive feature of being subject-based.

Snezana Lawrence: What is missing in what Liz Francis says is a recognition that teachers need time for personal research and reflection – such as we give to our pupils.

CH: To pick up some of the points made in the presentations: (1) there is a need to spread good practice (which is about ways of getting students to *understand*); (2) any new curricular changes need extensive CPD time built in, to learn, reflect and embed; (3) collaborative networks are hugely important, particularly in shortage subjects like Mathematics; (4) Heads need a vision for subjects that are not their own; for Mathematics they should talk to mathematicians; (5) CPD is not just a matter of attending courses and much can be done with internal resources.

Delegate: As Mathematics teachers we get plenty of stuff from the Government without the option, but we miss out on new research findings.

CH: Researchers do want to share their findings, and we need all the ideas we can about establishing effective connections between schools and Universities.

Questions from delegates:

1. Should not the new Masters in Teaching and Learning be aimed at those with some years of teaching experience rather than at Newly Qualified Teachers?
2. Changes in syllabus bring in their train new textbooks, often produced in a hurry in collaboration with the exam boards. Is it time for our subject associations to take greater control?

JC:

1. Research evidence suggests that the culture of professional development is best inculcated early in a teaching career and thus the Masters will have more impact then; but this is only a pilot and we can modify our approach in the light of experience.
2. Some syllabus changes are of course required by Government, but I do have a worry about possible connections between certain syllabus changes and what appear to be commercial interests. Ofqual will have the power to look at such issues. And of course it is right that end-users should be involved in designing qualifications. By and large they are; but with 150 Universities and multiple Departments, it is impossible to serve all interests. What we do need to see is that, where there is a collective voice, it is allowed to have more influence.

JH:

1. The structure is in place for consultations with academics and Universities about the curriculum, but to my mind they don't work and a different approach is needed. The trouble is that at the moment the curriculum is put together in piecemeal fashion as subjects develop in different ways at different times. Instead we should be taking a longer term view, considering subjects as a whole right through all the Key Stages, with all the parts joined up; and we don't have that.
2. As for textbooks, it is quite wrong to have a situation like this where examiners stand to profit from writing books for their own exams; and they will be bad books if they are nothing more than revision guides. The fact is that there is not enough talent involved in the setting of exams; and there are too many specifications and too many awarding bodies. I have come to think that maybe there should be just the one awarding body, as the present competition for custom has the effect of driving standards down in a race for the bottom.

Delegate: There are opportunities for the Gifted and Talented to develop; but we must not forget about the children at the other end of the ability spectrum, where the social problems principally lie. We do not know what it is like to face continual educational failure.

BMC: The PTI is certainly not exclusively concerned with abler pupils. Its opening statement is that "all pupils, irrespective of background or ability, are entitled to a subject-based curriculum, taught with rigour and passion."

JC: I do not accept the suggestion that Mathematics and Science GCSEs are easy qualifications which anyone can walk through; in fact fewer than 50% get grades A* - C. And scholarship is not determined or limited by modes of assessment; it is in the hands of teachers, who stretch and challenge and inspire their pupils in the way that the PTI quite rightly promotes. The picture I have of education in this country is not of terrible teaching, easy qualifications and mediocre results; I see passionate teachers raising children's aspirations.

BMC: All the same, there does seem to be a disconnect between government education policy and the principles of good education which we have been discussing here and which underpin

the work of the PTI. The pursuit of academic excellence is largely absent from the recent White Paper.

Delegate: Two things are crucial: that our top quality Science students should go into subject-related careers, and that society as a whole should be scientifically literate. Neither of these things is being achieved, and part of the responsibility must lie with the current mode of assessment. How can you expect to assess properly pupils at every level from A* to Fail with a single 45 minute exam?

PANEL OF SIXTH FORMERS

Four Sixth Form students drawn from William Farr Comprehensive School and Pimlico Academy were invited to give their thoughts on questions related to the teaching of Science and Maths. The main points they made are:

1. Pupils love the way that Science opens up their view of the fundamentals of life, and how the skills and knowledge content acquired in Science can be applied to other subjects and to every day life. They find the variety and challenge of the subject fascinating, and enjoy the different methods of teaching – both theoretical and practical – that Science encourages.
2. Pupils say that mathematical problem-solving is fun, and appreciate the logical steps by which mathematical knowledge is built up, and thus the confidence that this gives when it comes to handling numbers. As with Science, pupils also recognise and value the many ways in which skills and knowledge acquired from Mathematics can be applied to other subjects and to every day life.
3. Pupils believe that teachers need a variety of qualities to inspire their pupils. These include an enthusiasm for their subject and a wide knowledge of it in order to be able to answer unexpected questions. Teachers must also be able to deploy a wide range of teaching strategies and be willing to take pupils out of their comfort zone. Teachers furthermore need to know their pupils, and how they learn most effectively.
4. Pupils feel that extra-curricular stimuli through such things as projects, visiting speakers, and inter-school challenges, are important. The opportunity for older pupils to help younger ones with their work is also valued.
5. Pupils say that the best advice they can give to new teachers is to show confidence and enthusiasm from the start, and get to know their pupils in order to understand how best to support them.
6. Pupils feel that the gap between what is required for GCSE and for A-Levels is huge, and would appreciate the availability of more, and more challenging, options for stronger Year 11 pupils.
7. Pupils are most likely to be switched off from learning Science and Maths by a lack of challenge, the use of work cards which reduce interaction with their teachers, and the use of dictated notes.

DISCUSSION WITH MICHAEL GOVE MP

Below is the summary of a discussion between Michael Gove (MG), Shadow Secretary of State for Children, Schools, and Families, and Lord Wilson (RW):

RW: Tell us first something about your views on education.

MG: The change in the Department's name indicates a change of culture: a shift away from schools as places of teaching and learning to schools as community hubs from which various services are dispensed. We do actually need a Department for Education which supports the notion that liberal education is the hallmark of a civilised society and we need schools whose function is to deliver that education. At the moment this is being eclipsed by other things like the Every Child Matters agenda, important and admirable in itself but not centrally related to education and teaching.

I believe that we are heirs to a cultural heritage – the best that has been thought and written – and that everyone has a right to access it; but currently schools are being oriented in the wrong direction. For instance Ofsted, created specifically to drive up educational standards, now has eighteen criteria for inspection, only four of which relate to teaching and learning; and the School Report Card announced in yesterday's White Paper contains too much that is peripheral.

The real business of schools is to open the eyes of children to experiences that would otherwise have been alien to them and to trust the professionalism of teachers who are motivated by love of subject and the desire to communicate it. To suggest, as is fashionable, that subject disciplines have been superseded by supposed insights about how children learn is – to use a scientific term – bollocks. Ofsted provides the evidence that when subjects are transcended or abandoned in favour of topic-based teaching or cross-curricular themes, there is a lack of intellectual rigour and exam results get worse. Conversely, schools in even the most challenging circumstances can do extremely well for their pupils by insisting on academic rigour and treating this as the right of every child; and in the process, other aspects such as behaviour improve too.

Education today is further undermined by narrow measures of accountability – the counting of exam grades without reference to qualitative judgements. This tempts weaker schools and Heads under pressure to steer their pupils towards weaker and easier exams, with the result that the pupils may be deprived of opportunities in the future. (The QCA orthodoxy that all exams are of the same level of difficulty is transparently untrue).

Currently, the accountability of schools is all upwards, towards the Government's requirements; more of it needs to be downwards, towards the parents. It is surely significant that parents who are able to access private education go for schools with a reputation for academic subject rigour.

I am particularly worried about what is happening in Science. The attempts to engage pupils by focusing on major current issues like stem cell technology mean that pupils are expected to discuss these things without any real understanding of the relevant Science.

Teachers need to be able to teach the subjects they love in an inspiring way; and the exam system needs to be opened up, so that if teachers think their pupils will benefit by changing (for instance) to the International GCSE or the Pre-U exam, they should be supported in doing so. But the corollary is an insistence that, whatever exam system is

used, it must be absolutely rigorous so that our pupils can compete with the best internationally.

RW: What would you do to bring about the profound changes that you aspire to?

MG: There are a number of instruments. Ofqual needs to have an explicit role in benchmarking our exams against international systems. The TDA needs to put greater emphasis on classroom practice and Heads given greater time and freedom to mentor teachers. In the professional development of teachers the new Masters degree needs to include opportunities to develop deeper subject knowledge, not just the craft of teaching. QCA sees the National Curriculum as a way of modelling perfect citizens, with 27 aims all of which are socially desirable but are largely a distraction from the core business of helping pupils to acquire the intellectual capital to which they are entitled.

Delegate: The problem for teachers and pupils here is the excessive use of quantified assessment. In Australia there are fewer exams but they are more demanding.

MG: In Australia they do have National Curriculum SATs. Here, we need a test at the end of Primary schooling, though we propose moving this to the autumn of the first year of Secondary school. Overall we want fewer but sharper exams, and we expect schools to do more of their own assessing. At GCSE and A Level there are at the moment too many modules and too much coursework. We need to reduce the cost and the burden.