THE FOUNDATION FOR SCIENCE AND TECHNOLOGY

DINNER/DISCUSSION SUMMARY

The Education of 14-19 Year Olds

Held at The Royal Society on Wednesday 25th May, 2005

We are grateful to the following for support for this meeting:
Biotechnology and Biological Sciences Research Council
Comino Foundation

Chair: **The Rt Hon the Lord Jenkin of Roding**
Chairman, The Foundation for Science and Technology

Speakers: **Julie Bramman**
Head of Curriculum, Specialism and Collaboration, Department for Education and Skills
Pauline Cox
Head, Tiffin Girls' School, Kingston upon Thames
The Lord May of Oxford OM AC Kt PRS FMedSci
President, The Royal Society

MS BRAMMAN outlined the government's vision as set out in the 14/19 year White Paper[1]. She accepted that there had been criticism of the rejection of Tomlinson's proposal for an overarching academic/vocational diploma. But the Government felt that it was more important to build on existing structures that were well understood and respected by parents and employers than to create something quite new. But it was still the intention to bring to academic and vocational qualifications equivalent status, and to break down the divide between them. This would take time and commitment. The Government were intent on following through other of the Tomlinson recommendations such as ensuring that all school leavers were competent in the basic skills – literacy, numeracy and IT - that the able were stretched; that vocational paths were strengthened, with a greater variety of contexts and practical applications – 14 specific subject diplomas were planned - that there should be more choice and options and clearer paths, with personal tailored support to remotivate and encourage underperforming pupils. The White Paper, unlike Tomlinson, stressed the importance of science. The Key Stage 3 curriculum was to be revised; this was the period when children often lost motivation' and the subject matter must be rationalized and science teaching reinvigorated. In Key Stage 4 science would still be compulsory, but the core would be smaller, although the total time the same. There would be two pathways; an academic one for future scientists and a practical one for those who needed to use and understand science in ordinary jobs.

MRS COX considered the rejection of the Tomlinson proposal for an overarching diploma regrettable. The proposal had been reached after full discussion and was widely supported in the teaching profession. If the educational fault line between vocational and academic courses and qualifications were not to be perpetuated, the proposal should have been accepted. Without it, there would be continuous pressure from parents and students to go for academic courses, seen as more prestigious, although to which many pupils might not be suited. If UK education were to be significantly improved, the following issues must be addressed: significantly increasing capital investment in both new buildings and better facilities (particularly in laboratories); getting many more subject qualified teachers; focussing Further Education vocational courses (with better paid staff); reducing the 49% of 16 year olds who do not get five good GCSE passes – in particular focussing on the 5% who get no grades - "the disappeared", who are responsible for much antisocial behaviour; reducing the amount of testing and qualifications (there were 2,500 vocational qualifications from 123 awarding bodies); and ensuring new syllabuses came in early and were practical. There were far too many VI forms and constant change was extremely disruptive. A basic problem was devising education policy for 14 to 19 years olds, when schools dealt with 11 to 16 years olds.

LORD MAY stressed, from his own experience, the vital importance of the individual teacher in inspiring and educating students. It was the teacher that mattered; not the syllabus. Indeed, the inspiring teacher would not, could not, be bound by a syllabus because his emphasis must be on forcing his students to think, to inquire, to question, and to follow thoughts and ideas to their conclusions. He was concerned about the divergence in A level results between "difficult" subjects such as Chemistry, Physics, Latin, Maths and French, and "easy" subjects such as Design Technology, Communications, Art and Photography. It was easier to get good grades in the latter – and so schools, eager to score in league tables, and pupils, anxious to get high grades for University entrance, would go for the latter. The result was that it would be more difficult to get top grade pupils or teachers in difficult subjects – which were the ones vital for our future – in state schools, compared with independent schools. Indeed this result already showed up in success rates in the "difficult" subjects.

[1] www.dfes.gov.uk/14-19

An unfortunate social divide was opening up. The Treasury ought to be concerned that pupils' choices, which were, of course, strongly influenced by teachers and schools, seemed to be leaning towards qualifications which provided less added value, and lower earnings (and tax) than qualifications leading to careers in medicine, law, engineering, and science. The task was to create an educational system which respected the differential costs in teaching, removed perverse incentives, and relied less on syllabuses, and more on teaching which encouraged understanding of science and its methods and its relevance to a full and rewarding approach to life.

A number of speakers, in the ensuing discussion, shared Mrs Cox's disappointment over the rejection of the Tomlinson recommendation of the overarching diploma. It was pointed out that the Hamlyn Commission, 12 years ago had made a similar recommendation, and this too, had been rejected. Why had two different political administrations rejected a recommendation, which had been widely supported? Was it simply overcaution – "holding onto nurse for fear of something worse" – or were there more fundamental reasons? There were, in fact, good political and practical reasons. The views of parents and employers had to be given strong weight; there was clear evidence that they were strongly attached to current GCSE and A level structure, understood it, and were suspicious of fundamental change, which they feared might weaken the testing it gave to students. As in many other cases, Ministers had to weigh expert opinion against the views of voters and take a decision which, in their view, would be acceptable, and in the public interest. The Tomlinson recommendations which had been accepted, and which Ms Bramman had outlined, should significantly improve the present system, and it would be sensible to see how successful they were when implemented, before looking at more radical change – which would, of course, be disruptive and costly. Blurring the distinctions between VI form and university work, and providing much greater ability for students to move between academic and vocational paths, would be very helpful.

There was general agreement that the crucial factor in successful teaching was the expertise, and personality of the teacher, rather than the detailed requirements of the syllabus. He/she must be allowed to be creative. Indeed, some would argue that the syllabus requirements and specifications were almost irrelevant to the learning process. Taken to the extreme, why go in for all the objective testing that was required, and not leave assessment to the teachers, who knew their pupils. But there were difficulties and dangers in relying too much on the hope that all, or the majority, of teachers would be inspirational and capable of fair judgements of their pupils. Most of the speakers present had been exceptional students, fully capable of learning in less structured situations than most pupils needed; could they fully appreciate the problems of the less able, who would be unlikely to be taught by outstanding teachers? Moreover, no government could accept a situation in which there was no external evaluation of success and a measure of accountability. This did not mean that league tables were the right answer (almost certainly they were not), but one could not ignore the desire of parents, and employers, to know which were the schools which were "successful" – judged objectively.

Teacher supply was a contentious issue. Credit must be given to the government for raising salaries, trying to raise the status of teachers, and providing "golden hellos" for teachers in science and maths subjects. Certainly more teachers were starting to come through the system and the target of 3,300 more science teachers should be met, although there was some questioning over their academic grounding. An interesting development were the numbers of over 25 year olds coming into teaching as a second career. They could be very valuable because of their experience outside the profession. The support of the Daphne Jackson Trust, which would be able to help women who wanted to go back into teaching, was welcomed. There were significant numbers of science trained graduates from the Russell group universities that could go into teaching, but did not. Why? Housing problems in London and the South East must be a major factor. Also, there was the problem of discipline in schools. Facing a class of rude, if not actually disruptive, adolescents, was extremely stressful, and needed long experience to cope with. Not every school, and certainly not every parent, was supportive in the face of such behaviour. This must affect high turn over rates. Science teachers, in particular, could feel a sense of isolation, and being out of touch with developments in their subject. The Science Learning Centres were designed to help over this, but they were expensive, and some schools found it difficult to meet the cost of courses. The Learned Societies could do more to help their members in schools to feel part of the scientific community.

While there was a general welcome for the 14 subject specific vocational syllabuses, there was concern about their slow introduction and doubts about their suitability for all those who did not wish, or were not able, to pursue academic courses. There was a wide difference between technicians able to cope with, develop and understand computer and IT systems, and a bricklayer. Different types of FE courses, apprenticeships and training needed to be built into the systems. Did FE Colleges really understand what the different needs were? There were far too few apprenticeships, and the financial incentives to companies to provide them were inadequate – particularly as a trained apprentice was likely to be snatched by a rival firm. It was important that FE courses should be designed so as to give those who had not been successful in academic work or failed to find work they liked a second chance.

Sir Geoffrey Chipperfield KCB

The presentations are available on our web site
www.foundation.org.uk

Background information:
www.dfes.gov.uk/14-19/documents/Final%20Report.pdf
www.tiffingirls.kingston.sch.uk
www.royalsoc.ac.uk