

## LONDON MATHEMATICAL SOCIETY

### Submission of Evidence to the House of Commons Select Committee Parliamentary Inquiry:

#### How Should Examinations for 15-19 Year Olds in England be Run?

#### **A. The arguments in favour of having a range of awarding bodies for academic and applied qualifications (including A Levels, GCSEs, Diplomas, BTECs and OCR Nationals), and the merits of alternative arrangements, such as having one national body or examination boards franchised to offer qualifications in particular subjects or fields**

1. As the curriculum review has demonstrated, policy formation and analysis requires a *permanent core* of subject expertise within the Department, or in some related agency. If we had such focused expertise – whether centralised or distributed – one might assess the advantages or disadvantages of having a single awarding body or a range of such bodies.

2. The KS2 and KS3 SATs *used to* be developed by such a core group within QCA, and their expertise evolved over a number of years as a result of positive interactions with the wider community (including the academic community). This group was absorbed by Pearson Education and its work became commercially confidential. Similarly, awarding bodies such as AQA (previously NEAB, JMB) *used to* involve academics from the constituent universities and experienced teachers from schools; but the links with universities have been severed over the last 30 years, and teacher-involvement has changed markedly. As a result, those who contribute to the setting and marking processes no longer feel that their professional competence is being valued; and the process is increasingly driven by bureaucratic concerns relating to managing the (increasingly mechanistic) marking process, and by avoiding the need for candidates to ‘join the dots’ for themselves.

3. So before one can debate the first of your three questions (A, B, C) we first need to ensure

- (a) that the current awarding bodies are obliged to re-engage with teachers and with universities so that a pool of expertise can be slowly re-established;
- (b) that the Department develops a pool of internal expertise in handling important subjects, and learns to interact with the wider community (including drawing on the expertise developed within the awarding bodies).

4. Whatever the outcomes of these two long-term projects, the essence of pluralism is that, where there is no single truth or competence, it is generally wise to allow variety, and to give each operator a degree of freedom so that we benefit from a degree of choice and innovation, avoiding the central imposition of inadequate solutions such as Curriculum 2000, or problems associated with the last KS3 SAT.

#### **B. How to ensure accuracy in setting papers, marking scripts, and awarding grades**

5. The problem lies not only with individual question parts, but with the overall quality of question papers. The current processes of setting and marking may well have been ‘administratively mechanised’ in ways that lead both to technical mistakes being overlooked and to a decline in the overall quality of question papers (because the preferred processes

involve checking *procedures* rather than *content* – an observation which is linked to our response to A).

6. Examining is a craft rather than a science. Despite the temptation to use the outputs of assessment for political purposes, examination results are never wholly reliable. An effective system requires an effective bureaucracy. But an effective bureaucracy is not sufficient: one still needs competent professionals to exercise judgement – both at the setting/checking and at the marking stages.

7. The use and abuse of league tables has obscured this inescapable feature of assessment, and has misled journalists and the public by concealing the extent to which the numbers emerging from any assessment process are *artefacts*. And this is especially true where the assessment process is so strongly constrained by political determination to ‘drive up standards’.

8. For decades, concerned teachers have written to exam boards each year complaining (often with considerable justification) of ‘unfair’ or inaccurate examination questions; and each year the exam board would consider carefully how to reply, and seek to learn whatever lessons needed to be learned. More recently such ‘errors’ have often been communicated directly to the national press. It may well be that the number of serious errors is not very different from what it has always been, and that the real decline is in the general quality and demand of exam papers: we encourage the Committee to talk to awarding bodies and to critical examiners to get an accurate picture of such trends.

9. What may be more serious is the impact on awarding bodies of excessive central pressures (from Ofqual etc.) for their exams and their marking to be ‘fair’ – which can lead to boringly predictable questions, and mark schemes which treat markers as automatons, who are expected to apply rules that run counter to their professional judgement. (For example, candidates are trained, when in doubt, to present two or more conflicting solutions in the hope that one of them might be marked correct – even though the candidate may have no idea which solution was correct.)

### **C. The commercial activities of awarding bodies, including examination fees and textbooks, and their impact on schools and pupils.**

10. The London Mathematical Society continues to be concerned that increasing involvement of examination boards in preparation, endorsement and publication of textbooks is having a detrimental effect on secondary education.

11. We are alarmed that textbooks are prepared with contents limited to what is needed for a specific examination and then endorsed by the awarding body. Lacking depth and covering a limited range of subject material, such textbooks give students little incentive or opportunity to engage with broader and richer material; they do not foster an appreciation of their subject's subtleties.

12. This practice results in reducing the intellectual endeavour of learning to a boring drill aimed squarely at passing the relevant examination; it narrows students' horizons, sets for them false criteria of personal achievement, and de-professionalises teachers.

13. To this has recently been added another concern – namely the increasing involvement of examination boards in Continuing Professional Development (CPD) of teachers. This trend combines with the links between examination boards and production of textbooks to reinforce the tendency of ‘teaching to the test’. CPD sessions run by exam boards are likely to focus on explaining to teachers how to train students to maximise marks in exams set by their particular board, while a textbook endorsed by the same boards often restricts the teaching to coaching students for the relevant examination.

14. Teaching to the test is destructive in every subject area, but it is especially harmful in mathematics education. In the field of mathematics, the current National Curriculum Review and the forthcoming review of A Levels will not achieve the ambitious goals set by the Government without addressing this urgent issue.

15. The LMS will welcome amendments to the regulatory framework which would forbid involvement of the examination boards in production of textbooks, endorsement of textbooks, and the running of courses and events advertised or recognised in any way as ‘CPD’. In particular we would welcome an introduction of a rule (similar to the one existing in Civil Service) whereby senior employees and examiners from awarding bodies should be forbidden from publishing educational material, or from benefitting materially from ‘exam-linked CPD’ during their employment by an awarding body and for a specified period after the termination of their contract.

### **About the London Mathematical Society**

16. The London Mathematical Society, <http://www.lms.ac.uk/>, is the major UK learned society for mathematics with an international membership. The Society's main activities include publishing journals and books, providing grants to support mathematics and organising scientific meetings and lectures. The Society is also involved in policy and strategic work to support mathematics and the mathematics research community. This work includes engaging with government and policy-makers on mathematics education and research, participating in international mathematical initiatives and promoting the discipline.

7<sup>th</sup> November 2011