



# A-level reform consultation

SCORE's response to the Ofqual consultation

11 September 2012

## **Introduction**

1. SCORE is a partnership of organisations, which aims to improve science education in UK schools and colleges by supporting the development and implementation of effective education policy. The partnership is currently chaired by Professor Graham Hutchings FRS and comprises the Association for Science Education, Institute of Physics, Royal Society, Royal Society of Chemistry and Society of Biology.
2. In summary:
  - a) SCORE strongly supports greater involvement of Higher Education on A-level design but considers the only feasible way of achieving this properly and transparently is through the establishment of national subject committees.
  - b) A-levels are in need of reform. However, it is principally the assessment of the specifications that has resulted in a loss of confidence in the qualification. Any structure established must ensure the assessment is fit for purpose and encourages the use of high quality assessment tools.
  - c) We agree that we need to tackle the re-sit culture. There is currently too much time spent on exam preparation and we welcome the suggestion of removing the January assessment.
  - d) We support retaining the relationship between AS and A-level, but would welcome a larger weighting for the A2 component to reflect the fact that students have acquired a deeper learning and understanding in the subject after a further year of study.
  - e) It is simply not possible to produce new A-level examinations for 2014. However, we can make significant progress on setting up the structures for A-level design within this timescale and make immediate changes that will improve the qualification (e.g. limit opportunities for re-sitting and change the weighting of AS and A2).
  - f) All new A-levels should be introduced together and not in phases. No one subject should be the 'trial' subject for others to follow, least of all strategically important subjects like the sciences. Furthermore, all new A-levels should be piloted before introduction.

## **Overview on A-level reform**

3. SCORE is supportive of A-level reform. The qualifications are widely valued but there is growing concern among the science community that A-levels are not preparing students for future progression, particularly into STEM higher education. This reform is timely and appropriate; if the qualification is to maintain its currency it must continue to meet the needs of users, present and future, including higher education, employers and the students taking them.
4. However, we are extremely concerned that this reform is being carried out with no formal structures or process being established. There is an unrealistic timeframe and no funding available for the reform. It is expected that the community will institute the structures, formalise the processes, develop the criteria and accredit specifications that are to be developed by awarding organisations in less than 12 months. This is, quite clearly, impossible.
5. Furthermore, despite being a national examination, we are concerned the qualifications are being removed from government responsibility. In England, the Department for Education has responsibility for education up to the leaving age of 18; as such

accountability of national examinations must reside with the Department, not with awarding organisations, learned societies or higher education institutions (HEIs).

6. We are concerned that this consultation does not address the fundamental issues behind A-level design, i.e. the structure and processes required to ensure stakeholder confidence in the qualification. From various discussions we have had with stakeholders we know that we are not alone in this view. There is a distinct lack of clarity from awarding organisations and HEIs about how A-levels will be developed and who is leading the process. The reform is also at risk of ignoring lessons from the past and not building on the system already in place. For the sciences, the removal of subject criteria is particularly worrying. Furthermore we believe it is principally the assessment of the specifications that has resulted in a loss of confidence in the qualification and that this is where the reform needs to focus its attention.
7. SCORE welcomes the emphasis of the reform to increase higher education involvement in A-level design. However we do not agree it can be charged with leading the reform. Higher education is a diverse sector with 165 separate institutions and a range of differing requirements for entry, and there is no single umbrella body that could take responsibility for their involvement in A-level design. Such a model would leave schools, universities and employers having to navigate a market of qualifications developed by a range of different institutions, all accredited by the regulator but possibly of variable worth. It would also leave those with broader subject expertise, such as the professional bodies and learned societies, having to engage with multiple organisations, which is not feasible.
8. SCORE strongly recommends that any structure put in place to oversee and accredit the development of A-levels should follow the set of principles outlined below. It should:
  - a) be free from any commercial interests
  - b) draw on appropriate subject expertise to represent the nature of the subject and maintain standards
  - c) be able to represent existing and potential users of their subject
  - d) have national coverage
  - e) be properly resourced and funded
  - f) operate transparently
  - g) be accountable to government
9. SCORE believes that the best way to secure the appropriate expert input for overseeing the development and accreditation of A-levels would be the formation of national subject committees in each subject. SCORE has recently published a policy position on national subject committees which can be downloaded [here](#). We will also refer to the role and responsibility of the committees throughout this consultation response.
10. SCORE has held several engagement activities over the summer to explore the concept of national subject committees and has received wide support from many of the stakeholders involved, including the three main awarding organisations operating in

England and the House of Commons Education Select Committee<sup>1</sup>. The SCORE position on national subject committees is also fully supported by the Heads of Physics, Chemistry and Bioscience Departments in UK Higher Education Institutions.

### **Purpose of A-levels**

11. We are pleased that Ofqual recognises within the consultation document that there is not enough clarity about the purposes of A-levels. Although originally intended to facilitate entry to higher education, they have over the years established a role in the wider qualification framework in recognising achievement. While we do not oppose this in principle, qualifications must have a clearly defined primary use otherwise there is a danger that they will fail to fulfil any purpose effectively. This does not preclude them being used for other purposes; it is likely that even if A-levels were to be redefined as primarily for entrance to higher education, employers and others would still regard them as useful indicators of a defined level of performance. Lessons from the development of the science diploma should be taken into consideration where, as a result of trying to satisfy two very different target audiences, the qualification was not fit for any purpose and was consequently scrapped.
12. Higher education, as the major primary user of science A-levels, clearly should be involved in A-level design. Therefore, for the sciences, SCORE can support the objective set out in Condition 1 that each GCE qualification should define and assess achievement needed for students planning to progress to undergraduate study at a UK higher education institution.
13. However, there remains a tension between the stretch and challenge aim of A-levels as university entrance tools and their use as a broad qualification and school matriculation tool. There needs to be a clear vision from Ofqual on the extent to which the new A-level qualifications are attempting to fulfil these two very different aims, particularly if we are to avoid a multi-stranded system where A-levels from different awarding organisations are of variable standards. We would be in favour of a system where we accept A-levels have to have sufficient stretch and challenge to allow universities to make informed choices. Rather than hinder, this should help to increase diversity at HE. Increasing diversity is not best achieved by lowering standards below what is actually required; the standard should always be determined by the purpose. Furthermore it is best for the entrance requirements to the most prestigious universities to be entirely within the public examination system – the more other factors such as interviews and entrance examinations matter, the less diversity HE is likely to achieve.
14. SCORE does not support the objective set out in Condition 1 that GCE qualifications should provide a basis for school and college accountability measures at age 18 as it is likely to introduce perverse incentives into the system. School accountability through exam results (as opposed to the Ofsted inspection about the quality of actual teaching) in a criterion-based exam system has resulted, and will continue to result, in teaching to the test to improve results but not necessarily understanding. This accountability objective is

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<sup>1</sup>National Subject Committees are referred to by the House of Commons Education Select Committee in its recent report into the examinations system published in June 2012.

<http://www.publications.parliament.uk/pa/cm201213/cmselect/cmeduc/141/141.pdf>

also inconsistent with Professor Alison Wolf's recommendation to the Government last year, which SCORE supported, that pupils' best interests, in terms of progression and educational value, should be prioritised over performance table points in school decision-making<sup>2</sup>.

### **Size and grading**

15. SCORE agrees there is merit in revising the grading system to help HE differentiate between applicants. The current grading system, which groups students into grade bands, does not sufficiently differentiate student performance and this hinders the higher education admission process. In addition, changing the way in which achievement is reported will prevent a direct comparison with results from before the change and invalid conclusions that may be drawn from such comparisons.
16. The current grading system should include more information to provide higher education with a detailed picture of student performance and facilitate greater transparency in university admissions. For example, supplementary information could be made available on the students' performance in relation to the national entry of a subject via a normal distribution, marks could be given in addition to grades and a detailed breakdown could be provided of students' achievement in assessment components.
17. Should the current grading system remain, we are not convinced the A\* grade is effective in discriminating between the highest achieving candidates or inspiring and challenging the very best students in the sciences. Achieving a score of over 90% in an A-level science examination is not necessarily an indication of being better prepared than someone who has achieved a standard grade A. Instead we would support an Advanced Extension Award (AEA) type qualification, similar to that available in mathematics, to encourage more in-depth study in the sciences to stimulate and inspire students working at the highest level. We would also welcome greater use of synoptic questions that require the synthesis of ideas to be included in both AS and A2 assessments.
18. We are concerned that several of the conditions within this consultation document place responsibilities for the GCE qualification with the awarding organisations. In Condition 2, we strongly recommend that a national body, such as a national subject committee, with direct links to government (through Ofqual), sets clear, minimum expectations of the performance of students to achieve the top grade/band boundary and the lowest grade/band boundary, not the individual awarding organisations. This will prevent variability among A-level qualifications offered by different awarding organisations.

### **Qualification structure and availability of assessment**

19. SCORE strongly supports retaining the AS qualification for a number of reasons; it provides an indication to higher education institutions on student performance which helps facilitate the admissions process; it allow students to study a greater breadth of subjects which both encourages students to study subjects they might not wish to take to

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<sup>2</sup> Alison Wolf, *Review of vocational education – The Wolf report*, 2011

full A-level (a particular issue for science subjects which are often regarded as harder than others) and facilitates informed decision-making on progression options; and allows students studying science A-levels to take some form of mathematics at post-16.

20. As well as being available as a discrete qualification in its own right, the AS level should also remain as a component of the A-level. However, it should have a lower weighting than the A2 components. This is to recognise the fact that the AS represents the level of performance expected by the end of the first year of study, while the A2 reflects the fact that students have acquired a deeper learning and understanding in the subject after a further year of study. We would advise 40:60 weighting for AS and A2 qualifications.
21. Furthermore, we recommend the A2 component should assess the full two years of study and embrace a synoptic character so that students are encouraged to learn the subject holistically rather than compartmentalise modules. However, we would not be in favour of removing the assessment at the end of the first year of the A-level course.
22. SCORE agrees with Ofqual that numerous re-sits has had a negative effect on the A-level qualification: students do not always treat the exam seriously if they know they have the opportunity to re-sit; it offers perverse incentives for teachers to focus on accountability measures; and it can significantly reduce the amount of teaching time. SCORE would therefore support the removal of January assessments and move to a system where assessment occurs once a year during the summer term.
23. Students should have the option to re-sit each assessment component once. This will result by default if there is only summer entry. To discourage students (and teachers) from opting to re-sit to try and increase their mark (and improve school performance), we would suggest that the most recent mark (rather than the highest of the two marks if the retake results in a lower mark) could count towards the final A-level grade.
24. As with any reform, care should be taken when removing the January assessment window that candidates who are part way through their course are not unduly disadvantaged by new rules.
25. We are pleased that throughout this consultation Ofqual has recognised that there will be exceptions to general A-level design and that the nature of the subject should largely determine how it is to be assessed. SCORE recommends the sciences at A-level are exempt from the requirement that a GCE qualification should have no more than three assessment components. The sciences are predominately practical subjects and in order to ensure that practical work remains a significant part of the assessment we recommend that for the two years of study there are six assessment components in total.

### **A-level design**

26. SCORE strongly advises that for the sciences there is a common core of knowledge, understanding and skills that must be included in all A-level specifications and assessment across awarding organisations. While not the case for some subjects, science A-levels must ensure students have acquired specific skills, knowledge and understanding in order to progress into higher education. This requires the subject communities, including higher education, and the awarding organisations to work together to agree a common core; this is something a national subject committee would

be able to facilitate. If subject criteria were not set out at a national level we would have serious concerns that a multi-tiered A-level qualification system would emerge.

27. SCORE strongly advises that subject criteria only outline the core knowledge, understanding and skills required for progression. The criteria should provide a significant amount of flexibility for awarding organisations to develop specifications that contextualise the criteria and are adapted to suit different learning styles.
28. The SCORE organisations have long been concerned about the grading severity of subjects. It is extremely important that this issue is addressed during the current review. There is strong evidence to suggest that candidates who take science subjects at A-level generally achieve lower grades in those subjects than comparable (or the same) candidates do in other subjects<sup>3</sup>. While SCORE recognises the difficulties inherent in enforcing comparability between subjects, we do have concerns that the proposal to remove subject comparability from Ofqual's remit could lead to a greater drift in standards between subjects and consequently affect the take-up of those subjects perceived to be more difficult. If this is to be prevented, the move away from subject comparability must coincide with a more transparent university admissions process and pressure to avoid using A-levels as an accountability measure. Lack of comparability between subjects is also inconsistent with the general use of UCAS tariff points and the additional university places HEIs can offer to students achieving AAB grades and above at A-level.
29. Assessment will always drive what will be taught and if there is to be confidence in the system, the assessment must be fit for purpose: it should require and reward teaching that has authentically reflected the nature of the subject during the course as well as allowing students to demonstrate fairly their level of understanding. In April 2012 SCORE published evidence on the assessment of mathematics within science A-levels which concluded that several of the mathematical requirements in the specifications were assessed in a very limited way or in some cases not assessed at all<sup>4</sup>. We would therefore strongly recommend that whatever structure is in place for oversight of A-level design it is also responsible, at a national level, for reviewing sample assessment material. Again, national subject committees would be able to facilitate this.
30. SCORE strongly agrees with conditions 4 and 5 on the variety of questions types and synoptic assessment. The SCORE research into the assessment of mathematics within science A-levels showed that too much emphasis was placed on single step calculations and in order to fully assess the mathematical requirements of the science specifications a greater balance of multi-step and extended type questions were required. We therefore recommend that condition 4 includes a requirement for multi and extended step calculations in relevant subjects. We would also support an increase in extended writing questions which is necessary to demonstrate knowledge and understanding.

## Qualification support

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<sup>3</sup> SCORE report, *Relative difficulty of examinations in different subjects*, 2008

<sup>4</sup> SCORE report, *Mathematics within A-level science 2010 examinations*, 2012

31. SCORE strongly opposes the objective set out in Condition 8 that specifications must have the support of a set number of universities. It is unworkable and we know from conversations with awarding organisations and university groups that there is huge confusion as to what 'sign off' by 20 universities may look like, particularly around the reference to 'at least 12 in the specific field of study'. Below are reasons why SCORE cannot support Condition 8:
- a. There are 165 higher education institutions<sup>5</sup> in the UK. There is a serious danger that a different set of 20 universities will support different A-level specifications and that this will create a multi-stranded qualification system. If there is an assumption that all universities will accept all accredited qualifications this should be very clearly stated and enforced.
  - b. There is no indication about the level of support required from each university or what mechanism will be in place to ensure the support from different universities is consistent. Support could come via a number of different routes, from Vice Chancellor level to departmental or admissions level and with varying degrees of engagement.
  - c. There is no indication about what aspects of the qualification the 20 universities would be supporting: whether it is the subject criteria, the specification and/or the assessment material.
  - d. Without transparency on what support for a qualification means, the notion of support from 20 universities becomes an arbitrary 'tick box' exercise. Similar experiences occurred during GCSE development where a variety of subject associations were approached by awarding organisations until sign-off was achieved.
  - e. Biology, chemistry and physics A-level are often a prerequisite for degree subjects outside of these disciplines. A significant proportion of students holding an A-level in chemistry will enter medicine and the same is true for A-level physics and engineering degree courses and biology for environmental courses. The notion of selecting 12 universities in the specific field of study is simply not sufficient.
32. Instead SCORE recommends that there is national consensus from all higher education institutions that all new A-levels are fit for purpose. The only way to facilitate this would be the establishment of national subject committees, convened and supported by the subject communities, including higher education. These committees would be responsible for setting subject criteria and for reviewing subsequent sample assessment material. This would not preclude additional engagement between awarding organisations and academics from higher education during the development of specifications. However, a distinction must be made between the roles of development and accreditation. Consultants who are involved in the development of specifications should not be involved in accreditation (particularly if they are paid).

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<sup>5</sup> Data from Universities UK website - The term higher education institutions includes universities, university colleges, specialist higher education institutions and other higher education colleges.

33. National subject committees would follow the principles set out in paragraph 8 and, although the conveners of these committees may vary depending on subject, their role and responsibilities would have to be consistent across subjects. In order to ensure comparability, and to retain a direct link between national examinations and Government, there is a necessity for the committees to be answerable to and regulated by Ofqual.
34. The three main awarding organisations operating in England (OCR, AQA and Edexcel) support this model and we have engaged with university groups (1994 Group, Million+ and Universities UK) who acknowledge the advantages of a national subject committee. It has also been supported by the House of Commons Education Select Committee earlier this year in its report on the 15-19 examinations system.
35. For the sciences, we see the national subject committees being convened by the learned societies. The Royal Society of Chemistry, Institute of Physics and Society of Biology already have established networks in higher education, industry/employers, learned and professional bodies and schools and colleges that could be drawn on for membership of a national subject committee. The three learned societies also have experience of accrediting university degrees and convening subject groups for the Quality Assurance Agency (QAA).
36. The membership of the committees would ensure a balance of representatives from higher education, industry, as well as the schools charged with delivering the content to students. Furthermore, the committees would operate at a national level, not assigned to a particular awarding organisation and therefore could ensure parity across A-level qualifications in a subject.
37. The establishment of national subject committees, as with any structures and process for A-level reform, will require funding. SCORE has discussed this with awarding organisations and there was a commitment from OCR, AQA and Edexcel that the work of the national subject committees in reviewing submitted specifications would be funded by the awarding organisations. To clarify, awarding organisations would be expected to pay ongoing costs on a per qualification basis, and the committees would provide detailed comments to awarding organisations on any submitted specifications that required modification. However, a central funding mechanism would still be required to cover the costs of committees' initial work relating to criteria and guidelines, which will not be insignificant.

### **Comparability of standards**

38. SCORE supports Ofqual's retention of the responsibility to ensure standards are comparable year on year. However, SCORE recommends Ofqual be permitted to recalibrate standards when the new A-levels are introduced in order to ensure that they are at an appropriate level of difficulty.
39. Ofqual should retain responsibility for ensuring that standards in A-level subjects are comparable across awarding organisations. A starting point should be the establishment of subject criteria. National subject committees, with a remit to provide the agreed criteria and review a sample of assessment material, would then help to ensure that awarding organisations developed specifications that were broadly comparable within subjects.

40. To compare qualifications across international boundaries, in a valid way, is technically difficult and beyond the capacity of national subject committees.

### **Implementation**

41. The timescales for these reforms are totally unworkable, particularly as there is no clear structure or process in place for moving forward. SCORE is not alone in this view: all three of the main English awarding organisations have indicated that A-level reform is not possible in the given timescale, as have the university groupings (1994 group, Russell Group, Million + and Universities UK). If the timescale is not realistically extended, SCORE organisations will not be able to input into any part of A-level reform. We propose that, in this next year, there is a focus on establishing robust structures and processes for the reform. Once these are in place and agreed by all stakeholders involved (likely to be around summer 2013), redevelopment can occur.
42. However there are immediate changes that can be introduced to the system that will help to improve A-level qualifications within the 2014 timeframe. For example, we would support changes to the weighting of the AS qualification and the removal of repeated re-sit opportunities.
43. We do not support a phased approach to introducing new A-levels, particularly with priority subjects like the sciences being the first to undergo reform, for the following reasons:
- a. The sciences are strategically important subjects for the UK economy and it is essential that any changes to the current system are not rushed and are improvements to the examination system. The new structures and processes are experimental and should be trialled across all subjects before being launched. Furthermore being out of step with other subjects presents an unnecessary risk to the uptake of the sciences (for example, grading severity may become even more of an issue for the sciences until other subjects are brought into line). The sciences do not, therefore, represent the best subjects with which to pilot A-level reform.
  - b. Unlike some subjects (e.g. the humanities) the sciences rely on learners acquiring a core body of knowledge for progression. With GCSEs also under reform, there is a greater risk of losing connectivity between sciences at GCSE and at A-level.
  - c. Given that the A-levels in STEM subjects need to be developed at the same time, it would place huge demands on awarding organisations to develop all of them in the given time frame.
44. Instead SCORE recommends that all new A-levels are introduced for first teaching in 2016. This would allow sufficient time to develop a robust structures and processes for A-level reform across all subjects, appropriately engage with all the stakeholders and pilot new material prior to introducing the A-levels into all schools.
45. We also propose that serious consideration be given to funding A-level reform, whether this is through Ofqual, the awarding organisations, private/charitable organisations and/or Government. Other major reforms launched by the Department for Education (e.g. National Curriculum Review) have been funded and there is no logical reason why A-levels should be any different. We also know, through our discussions with

universities, that lack of funding will have an impact on how higher education is able to engage with the reform. The changes to the higher education funding structure are likely to have significant implications on the capacity and resources these institutions have available to commit to A-level reform.