



The Next Generation of National School Qualifications and the Structure of Scottish Education

1. The Royal Society of Edinburgh (RSE) welcomes the consultation on the *Next Generation of National Qualifications* as one of a series of initiatives designed to enhance the quality of school education in Scotland, and which include the development of *Curriculum for Excellence* and the proposals for Scottish Baccalaureates. This RSE response is based on the recommendations of an expert Working Group with relevant experience in educational policy and teaching.

Overarching issues

2. The consultation document is mainly aspirational. It lacks detail, clarity, or argument based on understanding of the nature of learning best suited to the needs of a variety of pupils during their school careers, and gives grave cause for doubt that it can provide the roadmap for the qualifications framework needed to realise its aspirations. Consequently, rather than respond to the individual questions posed by the consultation, we address what we believe to be the fundamental educational issues that a new structure must seek to resolve.
3. The articulation between the structure, outcomes and experiences of *Curriculum for Excellence* and the qualifications proposals is vague and confusing in both content and assessment. An example of this is Proposal 1 where it is stated that, “The content of all National Qualifications will be updated to reflect the values, purposes and principles of *Curriculum for Excellence*”, but no detail is offered about the content of this updating.
4. A crucial first step must be to understand how national qualifications relate to the whole of the curriculum. The current proposals show little awareness of curricular ideas, but appear to be a bureaucratic exercise in designing an examination system. The essential questions that should be asked, but are not, are: what knowledge and what skills do we want young people to have acquired by the time they leave school, and what kinds of assessment, and at what stages, can best inform learners, teachers and society of how successful a pupil has been in the progress of their learning? If we are to infer the answers to such questions from *Curriculum for Excellence*, then much more must be said about how its principles may be translated into a structure that can be assessed by a new system.

5. The RSE has welcomed the aims and values of *Curriculum for Excellence*¹ and its intention to incorporate cross-cutting, interdisciplinary themes and a focus on applications and real world relevance. However, in its response to the experiences and outcomes for science, mathematics and numeracy the RSE emphasised the vague nature of *Curriculum for Excellence* and the lack of recognition of the importance of the way in which young people acquire knowledge, skills and capabilities. There appears to be no recognition in the documentation that there is a structure to human knowledge that has been built up over centuries, and is the means by which we understand the world around us and ourselves.
6. The context within which pupils are taught is crucially important. Younger ones in particular tend to learn within a specific context. Once the context changes, they find it difficult to transfer their understanding to the new context. The strength of the disciplines is that they concentrate on learning within a logical conceptual framework that underlies many broader issues. They give pupils the basis for understanding that is transportable to a wide variety of issues. Casting off the disciplinary frame at too early an age on the assumption that an entirely cross-disciplinary structure of understanding exists that can readily form the framework for learning fails to recognise that inter-disciplinarity requires a prior grounding in the separate disciplines, and fails also to recognise that the capacity to transfer learning from one context to another is a difficult skill to acquire. An entirely cross-disciplinary frame of learning can rob them of this basic capacity. Exemplification of the way in which discipline-based understanding contributes to our understanding of broader, often more complex, issues needs to complement disciplinary study, not to replace it.

Standard Grade and Intermediate qualifications

7. The proposed new qualifications are not described other than that they will include the best features of Standard Grade and Intermediate qualifications. That may seem to be good in principle, but it is not clear what 'the best of each' means, and it is not clear what principles will be used to choose the best features and to fuse them together. The curricular principles of Standard Grade and of Intermediate are quite different. In its origins, Standard Grade was based on the structure of knowledge required to address the core elements of our understanding and culture. Intermediate was based on ideas of competence, with a particular focus on applied knowledge and on the uses to which learning might be put.
8. Although the two have come to share some ideas over the years, and are no longer as distinct as they once were, their different philosophies continue to distinguish them from each other. The proposals do not explain how these differences are to be reconciled.
9. What is proposed is effectively the abolition of Standard Grade and its replacement by Intermediate. No specific instance is given of how "the best features of Standard Grade" might be retained, nor even what they might be. All that is written about detail suggests that the new structure is that of Intermediate. Such unit based structures often fail to encourage pupils to recognise connectivity within a particular

¹ See RSE responses to *Curriculum for Excellence* - draft experiences and outcomes for numeracy, mathematics and science (April 2008) and *Curriculum for Excellence* - draft experiences and outcomes for Literacy and English, for Expressive Arts and for Social Studies (June 2008)
http://www.royalsoced.org.uk/govt_responses/2008_files.htm

discipline and to provide the overview and integration that sound learning requires. Consequently, core knowledge and understanding may be lost and progression limited. Moreover, in contrast to Standard Grade, the new “general” courses will, for able pupils, be only one year in length, in order to give them time to study Highers in S5. It is difficult to see how these new courses can therefore be as rigorous or as culturally rich as the existing two year Standard Grade courses.

The restriction of breadth

10. Although it is not explicit, the proposed structure implies that pupils will only be able to study *five* subjects from S4 onwards, leaving aside the newly proposed literacy and numeracy courses (see paragraph 20 below). Currently, *eight* subjects are generally available in S4, and *five* normally in S5. The consequence would either be narrowing of the curriculum in the senior secondary or, if breadth is to be retained, an S4-S6 programme created on the assumption that *Curriculum for Excellence* will provide a sufficiently broad education up to S3. In the latter case however, such breadth could not be taken to the same level as currently occurs in Standard Grade, as the programme will end one year earlier.
11. Pupils, parents, higher and further education institutions and many employers will not find such narrowing of the curriculum acceptable. It is an issue that needs to be addressed by the *Scottish Government* and *Learning and Teaching Scotland* (LTS) in liaison with the *Scottish Qualifications Authority* (SQA). It needs to be clearly stated if such narrowing of the curriculum is to take place, and if not, how the current breadth will be retained in the proposed structure.
12. It is also important that there is a clear expression of the philosophy that will underlie the design of the curriculum, analogous to the principles that were clearly enunciated for Standard Grade. For example, would it be acceptable if a pupil in S4 did not study any science, or if they studied only science? Both extremes would appear to be possible and acceptable in the proposed framework.

The S1-3 to S4 transition

13. It is vital to ensure continuity between courses in the junior (S1-S3) and those in the senior phases of education (starting in S4), and that the levels of knowledge and skill developed in S1-S3 prepare a pupil well for the assessment phase from S4 onwards. In particular it is necessary to establish a coherent structure of learning in the S1-S3 phase of compulsory general education, particularly in those subject areas where learning is sequential. The proposals do not make it clear that these principles will be adhered to in this critical stage in the development of a pupil’s education.
14. We are also concerned that the greater autonomy given to schools in delivering *Curriculum for Excellence* could result in quite different programmes and trajectories of learning in different schools and different areas, providing a very variable base on which to build national qualifications. It does not seem to have been recognised in the consultation, nor in *Curriculum for Excellence*, that a significant proportion of pupils move between schools in the same or different areas at some time during their careers. This should be prepared for by ensuring conceptual continuity in the programme.
15. Pupils are normally expected to make their subject choices for the senior phase of qualifications in S3. Subject choice gives increased purpose to schooling and pupil motivation tends to be enhanced when they feel they have more control over the direction of their studies. We are therefore concerned about a possible reduction in

motivation if pupils are held back from serious specialism until S4. Moreover, if the new S1-S3 courses are not to have too rapid a rate of progress for many pupils, they will have to finish at a level which, by the end of S3, is far short of the level typically reached in Standard Grade courses at the same age. This could result in the most able pupils being held back and potentially bored. It seems perverse that, after two decades in which many have claimed S1-S2 to be a period of stagnation rather than progress, a proposal is made that may also risk a slowing of pace for a further year.

16. The proposed outcomes and experiences for level 4 exhibit a lack of clarity about the relationship between learning and assessment. Will level 4 be achieved by many/most pupils in S3 or S4? How will it be assessed? And how will assessment ensure some standardisation of levels of achievement? There will need to be much more meaningful reporting by teachers for assessment, measurement and definition of pupil progress. We believe teachers are concerned about this lack of clarity. It needs to be resolved before the implementation of *Curriculum for Excellence*.
17. The consultation document does not answer the fundamental question: are the General and Advanced General Qualifications to be considered as sequential or parallel but at different levels? Realistically, both will probably be needed.

Pathways adapted to the diversity, expectations and abilities of pupils

18. The provision of greater flexibility both in pathways and progression is to be welcomed, at least to the extent that there is reality to the familiar claim that Highers represent a 'two-term' dash from Standard Grade, although we note that the proposals offer no evidence relating to whether and to what extent this is a problem. Although bypassing level 4/5 qualifications en route to Highers by able pupils might appear to be sensible, it is unlikely to be a route taken by more than a very small minority. Proposals to by-pass S4 qualifications in this way have been made on numerous occasions in the last half century and have never been popular, mainly because pupils want the safety-net of having passed a lower-level qualification before moving onto the next level. We would then end up with not one but two 'two-term' dashes, one in S4 for those taking General/Advanced General that year and the second as at present in S5.
19. We are not convinced that the diversity, different expectations and abilities of pupils have been recognised in the proposals. A creative way forward would be to reconsider the role of S3 in relation to the following years, by ensuring that the preparation for national qualifications begins in S3. At the same time it should be able to accommodate pupils with different goals, just as currently occurs in Standard Grade. The content of S3 should be configured so as to allow some aspects (essentially the content of one of the three units of General/Advanced General) to be covered. Students would then only have 2/3 of any course to cover in S4, freeing more time in S4 to maintain a broader curriculum with 7 or 8 subjects, rather than narrowing the curriculum as implied by the proposals in the consultation. We suggest the following pathways for individual subjects:

S3	S4	S5	S6
Broad course + content of first unit of General/Advanced General	Complete course and present for General/Advanced General, together with beginnings of Advanced General/Higher material	Higher or Advanced General	More Highers/Advanced Highers

In this model, pupils would maintain a broader curriculum in S4 and only narrow to five subjects in S5, with final leaving qualifications a mixture of courses at different levels. Those on an Access pathway would need a different approach.

Proposals for new awards in literacy and numeracy

20. It is proposed that all pupils should be subject to tests of literacy and numeracy at levels 3 to 5. No rationale is offered for this. No explanation is given of how the mere existence of new tests will improve the learning of these important skills. And no evidence is offered that the information which the results of such tests will provide will meet any need expressed by employers or post-school educational institutions. The stated aim of the experiences and outcomes is that literacy and numeracy should be delivered *across the curriculum*, whilst the proposal is that this should be certified by a mixture of internal assessment and external examination. It is not at all clear from the proposals whether the practicalities of this have been adequately considered. How can standards be ensured across Scotland, let alone within a school, if teachers from a variety of disciplines are responsible for teaching literacy and numeracy? This is an enormous undertaking. How much will it cost in effort and resources? Also, if there is to be an external examination, what form will that take and who within a school is to prepare pupils? Given the stated intention that there will be external examination in numeracy and literacy it seems inevitable that there will be an additional burden of expectation on specialist English and mathematics teachers.
21. We also are concerned about how the new awards relate to current provision and qualifications in English and mathematics. The preparation required for these tests will further narrow the S4 curriculum, and perhaps that of later years as well. For the more academic pupils (e.g. those heading for Higher Mathematics and English), certification in numeracy and literacy seems a pointless exercise.
22. It is suggested in the proposals that some pupils, while continuing with numeracy and literacy qualifications, will not take English and mathematics beyond S3. Although this may be reasonable for some, it could result in general diminution in knowledge as pupils take up this option. One of the current strengths of Scottish education is the generally high level of English and Mathematics qualifications across the population, with English and Mathematics being respectively the first and second most commonly taken Highers (and taken by almost everyone at Standard Grade). It is important that clear guidance and advice be given about the implications of opting not to take English and/or mathematics at level 4 (this being the level which all pupils currently at least attempt). Post-school learning, training and employment depend on some competence in mathematics and English beyond that reached in S3. Stopping mathematics and English at that stage could close off career options that might not at the time be apparent.
23. Given these concerns and the lack of a reasoned case in the proposals for these awards, we recommend that plans to introduce such awards are abandoned and further thought be given to the issue.

Scottish Baccalaureate

24. The Scottish Government has decided that a Scottish Baccalaureate in science and languages should be introduced from 2010. The SQA have been charged with the task of developing and planning for the introduction of the Baccalaureate. Its purpose is to promote the importance of science and languages, to raise the status and value of S6, to be a valued qualification for entry to higher education and to be a bridge between school and what follows.

25. The success or failure of the Baccalaureate will largely be determined by the currency value it is perceived to have amongst pupils and parents, and by the teachers who will advise them, and therefore the extent to which universities (in England as well as Scotland) prefer it as a qualification for entry to a selection of Highers and Advanced Highers. No account appears to be taken in the proposals of ways that the sixth year currently operates, or of several valuable developments that have come from the Higher Still reforms; notably the role which Intermediate 2 has had in providing structured courses to pupils taking Highers over two years, or the challenge which Advanced Higher offers very able pupils.
26. Other Baccalaureate systems are based on an integrated and coherent pattern of studies. The Scottish Baccalaureate is intended as a “group award” that covers a range of independent but cognate subjects. The Howie Report (1992) attempted to articulate the philosophy of Baccalaureate on the continental European model, with a balanced package of subjects. The current proposals add little more than an integrative, cross-disciplinary project to existing assortments of Highers and Advanced Highers, with no attempt to reform the philosophies or integration of the other components.
27. If the Scottish Baccalaureate is to be highly regarded, given that universities have not in the past looked favourably at “group awards” as a basis for entry, it must at least satisfy two criteria. Firstly, in relation to the project. Will it be sufficiently rigorous? Will resources be adequate? Will external bodies be able to engage with pupils other than in a cosmetic way? How will the standard of the project be assessed and validated? Secondly, the present proposal may not appear demanding enough as an alternative to Advanced Highers as qualifications for entry. The Science Baccalaureate for example will comprise: an Interdisciplinary project at Advanced Higher; mathematics at Higher; 2 sciences at Higher; 1 science at Advanced Higher. It would be far preferable if two Advanced Highers were required and if mathematics and applied mathematics were added to the list of eligible Advanced Highers.
28. Resources and staffing are key issues. A cross-disciplinary project of the type envisaged makes a major demand on material and staff resources. Not only does it demand a far wider range of laboratory, archival and electronic resources than typical class teaching, but is more demanding on staff time, will require significant innovations in team teaching and will need enhanced administrative resources if the desired links with external bodies in support of projects are to be developed and maintained. Important science issues that would no doubt form the basis of many projects demand substantial inputs from the social sciences, economics and ethics/philosophy. If rigour is to be maintained, specialist teachers, including those out with the sciences, will need to work together in support of projects, rather than have a science teacher attempt to support work in domains beyond their own.
29. These considerations pose an issue of equity. There are many schools in many parts of Scotland that are unable to offer the range of subjects or the support that would be required to permit them to offer the Baccalaureate. It is important that this is thought through and modelled carefully. Serious thought should be given to the possibility that consortia of schools could offer the Baccalaureate, with different specialisms coming from each. This would work best if it made effective use of electronic technology. If the qualification is to be a success, and a standard bearer for Scottish education, it will need additional resources.

Additional Information and References

This Royal Society of Edinburgh response is based on the recommendations of an expert Working Group. Written submissions were also received from the wider Fellowship as well as non-Fellows.

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In responding to this consultation the Society would like to draw attention to the following Royal Society of Edinburgh responses which are of relevance to this subject:

- The Royal Society of Edinburgh's submission to Learning and Teaching Scotland on *Curriculum for Excellence - draft experiences and outcomes for numeracy, mathematics and science* (April 2008)
- The Royal Society of Edinburgh's submission to Learning and Teaching Scotland on *Curriculum for Excellence - draft experiences and outcomes for Literacy and English, for Expressive Arts and for Social Studies* (June 2008)

Any enquiries about this submission and others should be addressed to the RSE's Consultations Officer, Mr William Hardie
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Responses are published on the RSE website (www.royalsoced.org.uk).

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