

Royal Statistical Society response to Ofqual on Regulating Use of Calculators in new GCSEs, AS and A Levels: consultation on Conditions

Question 1: To what extent do you agree or disagree with our proposed approach to regulating the use of calculators in new AS and A level qualifications?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

Please explain your reasons:

The Royal Statistical Society (RSS) is a learned society and professional body for statisticians and data analysts. We are one of the world's leading organisations to promote the importance of statistics and data, and have done so since we were founded in 1834. One of our six key strategic goals for 2014-2018 is for society to be more statistically literate, so that people's understanding of data, risk and probability can inform their daily decision making, leading to better outcomes. Our Education Policy Advisory Group has advised RSS' response to this consultation with this goal in mind.

We take particular interest in this consultation, as we see a strong case for high-quality adoption of technology for data literacy, statistical literacy and quantitative skills across the curriculum. Our *Data Manifesto* has called on the government to ensure that all students learn to interpret real data using technology.¹ Developments in technology, in particular the availability of software for data processing and analysis, have led to profound changes in the accessibility of data and in approaches to statistics and data analysis. Such changes, which of course affect statistics as a discipline and as a profession in higher education and in industry, should be reflected to an appropriate level in the teaching, learning and assessment of statistics across the curriculum in schools.

¹ The Royal Statistical Society (2014) *The Data Manifesto* [PDF] Available from: <http://www.rss.org.uk/Images/PDF/influencing-change/rss-data-manifesto-2014.pdf>

With regard to mathematics, we are aware that transferring responsibility from Ofqual to the awarding bodies is necessary as a pragmatic short term step, as specifications are getting close to submission. However we have considerable concerns about long-term effects of the new policy, and believe that these concerns need to be addressed as soon as possible. In our view, DfE and Ofqual should work together to set up an independent working group, made up of subject experts, to formulate policy on the use of calculators in the assessment of mathematics and subjects with quantitative content. This policy must not be left to the individual awarding organisations.

Our reasons for concern, which is shared by other mathematical subject experts, are as follows:

Moving the calculator rules from Ofqual Conditions to awarding organisations' Assessment Strategies will withdraw the matter from public (in particular subject community) scrutiny and consultation. The use, or otherwise, of calculators in mathematics examinations is very significant for the assessment of mathematical skills and should be scrutinised independently of the awarding organisations.

Independent review should also take into account that subjects other than mathematics are taken by students whose motivation is very different from those who take AS or A level Mathematics. It is not obvious to us that the same calculator regulations are necessarily appropriate across these groups of students.

We additionally have a broad concern that extension of the use of technology in assessment (which we believe is needed) requires clear leadership to help our education system make the innovations that are required. In the longer term, the expert group established for the use of calculators should consider wider issues of the use of computers for teaching, learning and assessment design, including spreadsheets, computer software for numerical calculations and statistics, and computer algebra packages. The scope for this broader review that we believe is required, would extend into the curriculum as well as assessment.

Question 2: To what extent do you agree or disagree with our proposed changes to our approach to regulating the use of calculators in exams for new GCSEs?

() Strongly agree

- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

We have the same serious misgivings here as for A level. We are very concerned about the long-term implications of allowing individual awarding organisations to devise their own calculator rules.

Question 3: Do you have any comments on our proposed new Conditions for all new GCSE, AS and A level qualifications?

- Yes No

See above for our comments on GCSE and GCE.

Question 4: Do you have any comments on our proposed changes to our existing Conditions and requirements for new GCSEs in mathematics?

- Yes No

See above, Questions 1 and 2.

Question 5: We have not identified any ways in which the proposals for regulating use of calculators in exams would impact (positively or negatively) on persons who share a protected characteristic.² Are there any potential impacts we have not identified?

- Yes No

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² 'Protected characteristic' is defined in the Equality Act 2010. Here, it means disability, racial group, age, religion or belief, pregnancy or maternity, sex, sexual orientation and gender reassignment.

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Question 6: Are there any additional steps we could take to mitigate any negative impact resulting from these proposals on persons who share a protected characteristic?

Yes No

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Question 7: Have you any other comments on the impacts of the proposals on students who share a protected characteristic?

Yes No

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Response submitted by Policy & Research Manager, 11 January 2016