ROYAL STATISTICAL SOCIETY
DATA | EVIDENCE | DECISIONS

RSS RESPONSE TO THE DFE ADVANCED BRITISH STANDARD CONSULTATION

20 March 2024

This response has been submitted via an online form. Please find a copy of the questions we responded to below. Full details about the Advanced British Standard consultation can be found here.

4. Are you responding as an individual or on behalf of an organisation?

Organisation

6. If you are responding on behalf of an organisation, which of the following best describes who/which part of the sector your organisation represents?

Other – professional body promoting the importance of statistics and data

7. What is the name of your organisation?

Royal Statistical Society

11. We propose several overarching aims and principles that should underpin the introduction and design of the Advanced British Standard. To what extent do you support these proposed aims and principles? If you have further views on this, please share below. (250 words)

We support 'maths to 18' within a broader range of subjects that can be taken.

However, this must come with raising the profile of maths, statistics, and data, and combatting their negative reputation. To do this it is necessary to teach relevant and engaging content that equips students with useful skills. This requires an overhaul of the system pre-16 – it is too late to focus solely post-16.

Novel assessment methods are needed to allow all students to realise their full potential and narrow the disadvantage gap – eg alternative ways to assess the 'forgotten third' (who must resit GCSEs but may fail because of the exam style rather than because of the maths). This could mean aligning with moves (eg in New Zealand) to assess competency rather than memorisation.

We have questions over the content and time allocation of maths in the ABS. Course content would have to be carefully selected to ensure appropriate coverage and depth, and we would advocate for the minor in maths to be at the upper limit in terms of size.

We also have concerns around either increasing the workload for 16-18 year-olds, or diluting the material they cover in order to make room for more subjects. The implications of this must be considered.

Importantly, we have concerns about the capacity of the teaching workforce regarding the aim of increasing teaching hours, specifically by subject specialists. In many areas it is a challenge to attract and retain qualified teachers, and this could widen the disadvantage gap.

12. What do you think is the most important thing that the Advanced British Standard could achieve? (250 words)

Helping students develop the skills they need for daily life. Maths, statistics, and data science are crucial for a wide range of everyday activities and understanding the world around us, and young people need the opportunity to develop these skills.

These activities range from everyday decisions such as calculating change owed, managing budgets, measuring ingredients for recipes and using statistics such as percentages or likelihood to inform decisions (eg an activity is associated with X risk, should I do it?) to the skills needed in a wide range of jobs (evaluating quantitative or qualitative data, creating graphs, risk assessment, critical thinking).

The entire population needs access to the skills to investigate and interrogate data, so that no one is excluded from society and debating the big questions of the day.

We would hope that the opportunity to redesign the maths, statistics and data content in the curriculum provides the chance to raise the profile of these subjects and encourages more students to enjoy these subjects.

13. If you have further views on the aims, principles and purposes of the Advanced British Standard, or anything else covered in Chapter 1, please share below. (250 words)

Designing and introducing a novel qualification provides an important opportunity to capitalise on improving computing and digital skills in the population. However, these are barely mentioned. We would like to see a focus on AI and digital skills as well as data literacy throughout the curriculum, and especially for maths, statistics and data science.

We are also cognisant of the context in which the ABS is proposed - the education system has gone through a series of qualification changes recently (eg T-levels are still being rolled out, current qualifications review at Levels 2 and 3) and is currently facing a range of challenges (eg building issues, a crisis in teacher recruitment and retention, dearth of funding for extra classroom space or teacher salaries). The perspectives of the key players involved in any further novel changes must be considered.

14. We propose two main programmes at Level 3: Advanced British Standard and Advanced British Standard (occupational). Each will contain a range of separate components to support students. To what extent do you support the proposed design for the Level 3 Advanced British Standard programmes? If you have further views on this, please share below. (250 words)

We believe that statistics and data relevant to developing real-world skills should be within the compulsory content that all students study, on both the standard and technical schemes.

This means that a real-world relevant statistics and data component is needed in the range of different maths options available - maths and further maths majors, and theoretical and applied maths minor. This would not prohibit an additional statistics or data science option being offered as one of the subjects that can be selected, alongside the mandatory maths component – which we are supportive of.

Teaching engaging, relevant material as part of compulsory content could pave a path to raising the profile of these subjects and stopping fear/dislike of them. The statistics and data aspects should be clearly named as such, so students know what they are studying, and those who decide on the curriculum are clear on the distinction between them and the content that should go into each.

We believe that this content should be compulsory for all students, as the risk with having options to choose from is that schools may opt to not offer certain choices to students, especially if they are deemed 'harder' to teach or get high grades.

24. If you have further views on how subjects will be included in these reforms at either Level 2 or Level 3, please share below. (250 words)

There is a strong focus on 'rigour'. We believe that having clear, distinct definitions of maths, statistics, and data is necessary in order to consider what 'rigour' looks like in each of these domains. If not, there is a risk that the

selected content will be skewed towards the definition of 'rigour' as applied to maths, rather than also including the statistics and data science skills that will equip students with useful skills.

While we believe that there is some core statistics and data science content that it would be beneficial for all students to cover within the mandatory maths component, to equip them with useful skills, we would also like to see the opportunity for students to select statistics or data science options additional to this.

We hope that the DfE would seek expertise relating to each of these areas to determine the content for inclusion.

25. To what extent do you support the proposal for increased teaching time relative to self-directed study? We particularly welcome any evidence of how this is balanced currently. (250 words)

We have concerns around the capacity of the teaching workforce to meet this proposal, especially regarding subject specialists to teach maths, statistics, and data science.

27. If you have views or evidence on how time for employability, enrichment and pastoral (EEP) can best be used, please share below. We particularly welcome views and evidence about how to support students with additional challenges, e.g. lower prior attainment or the most disadvantaged. (250 words)

Data and statistics are crucial to a wide range of jobs of all shapes and sizes in the current market, as well as to day-to-day life. This should be highlighted to young people, to increase engagement with these topics and so they can make informed decisions about the subjects they wish to study to equip them with the skills they need for later work and life choices.

30. To what extent do you support using the proposed knowledge and skills identified for maths and English to inform these components of the Advanced British Standard? If you have further views on this, please share below. (250 words)

We agree that it is important to emphasise how maths, statistics, and data skills are useful for everyday activities and understanding the world around us, as well as for academic study and work.

The relevance of these subjects to a broader range of applications in everyday life, not only financial decisions, should be highlighted – for example, understanding how coding and artificial intelligence contribute to the technologies students interact with daily, critically assessing and interpreting figures in the media, understanding the risk from a certain activity or healthcare treatment, etc.

34. If you have views on how existing Level 2 qualifications (GCSEs and FSQs) could provide the basis for two-year Level 2 study for English and maths within the Advanced British Standard , please share below. (250 words)

Regarding maths, statistics, and data science, we believe that the content taught at GCSE needs to be refreshed so that it is engaging and relevant and equips students with skills useful for daily life. GCSE content, and also any future potential Level 2 ABS content, should include far more real-world examples and opportunities to interact with real-world data sets to answer questions of interest.

35. If you have further views on what students will study as part of the Advanced British Standard, or anything else covered in Chapter 2, please share below. (250 words)

A range of maths options is helpful to allow students to pick according to their interests and needs. However, it seems that some overlap in content will be necessary to ensure that all students have a core understanding of the maths, statistics, and data skills useful for their daily lives.

Consideration is also needed to ensure that offering a broader range of maths at different levels encourages students to take the highest level of maths that they can access and that is relevant and useful to them, rather than inadvertently discouraging students from taking a higher level option that may benefit them, because there in a lower level option available. The options that students take will also be partly dependent on the acceptance/esteem placed on them by employers and higher education institutions.

We are supportive of the measures to enable Core Maths to be more widely available in the shorter-term.

36. We have proposed assessment principles to underpin the ABS. To what extent do you support these assessment principles? If you have further views on this, please share below. (250 words)

While we recognise that assessment by exams can be more closely controlled, statistics and data science can often be better assessed in non-exam environments, eg projects and coursework where skills can be applied. We would not want the principle of 'rigour' to be taken to mean that methods of assessment that may better allow students to show their skills are overlooked.

Regarding the content that is taught and assessed, we would not want statistics assessment that focuses on 'rigorous' calculations at the expense of interpretation (as is often the standard attitude to assessment).

We would also like to see exploration of digital solutions to ease teacher workload with regards to assessment, and to reflect real-world maths, statistics, and data practices – with due caution to these new tools.

We agree with efforts to minimise the exam burden for students. Continuous assessment, using digital solutions, could help with both minimising assessor workload and also the exam pressure faced by students.

44. What opportunities and challenges do you see for the recruitment, retention and deployment of staff as a result of implementing the Advanced British Standard? (250 words)

We see significant challenges regarding the teacher workforce capacity to meet the needs of the increase in maths teaching.

Regarding opportunities, introducing a new curriculum could provide the chance to work with teachers and co-create the new content to be covered, ensuring that teachers are inspired and confident to teach it.

With a new curriculum there is also the opportunity to support teachers by providing easy-to-use and engaging resources (eg relevant data sets) to free up teaching time planning lessons and help teachers allow students to explore topics in an interactive and engaging manner.

We also see opportunities to explore the use of AI to aid with teaching and marking and reduce workload – with due caution to the use of AI in these instances. We note that while AI may be helpful for some more straight-forward types of assessment, this is not necessarily the type of authentic assessment that can best assess statistics and data skills, which are often best assessed in applied environments eg projects.

We also see opportunities to embed the teaching of statistics and data across subjects, applied to engaging subject-specific contexts. Teachers of biology, psychology, geography, business studies etc, could teach statistics and data within their subjects. Appropriate teacher support and co-creation of curriculum/subject content would be needed to ensure teachers feel confident to teach this. An example of this is the cross-curriculum statistics course at level 3 in Wales (https://www.agored.cymru/Units-and-Qualifications/Unit/CDL334).

45. What staff training do you think may be required to implement the Advanced British Standard successfully? (250 words)

Teachers of all subjects should receive training to feel confident teaching statistics and data skills as applied to their subjects. These should be taught in a joined-up way across subjects, capitalising on relevant context.

Using a co-creation model for both the mandatory maths major/minor, and the aspects of statistics and data in other subjects – with teachers from a range of disciplines and across the country, can help to create confidence and give agency and ownership.

46. We are interested in the changes that may need to be made to deliver the Advanced British Standard for all students, regardless of where they live. What changes do you think may be required in the following areas: 46b. Technology? (250 words)   46c. Provider landscape? (250 words)

Technology: provision is needed to ensure equitable access to technology for students, especially if the ABS includes an increased focus on digital skills and online resources. This would otherwise risk increasing the digital divide.

Provider landscape: the consultation details describe how not all providers will be able to offer the full range of ABS subjects. However, variable provision of subjects (eg a statistics/data science option) can create disadvantages for students based on area. Additionally, if a critical mass of providers do not offer a subject, the reputation of the subject can be risked, leading to low uptake. We would not want to see students' choices being limited due to variable provision of a statistics/data science option, and so would like to see support to help providers offer a full range of subjects, including support for recruiting and training staff to teach these subjects.

47. If you have further views on how the Advanced British Standard could impact 16-19 providers, or anything else covered in Chapter 4, please share below. (250 words)

Consideration is necessary to ensure that implementing the ABS does not disadvantage Further Education colleges and other institutions that offer programmes for 16-19 year-olds.

48. What changes to pre-16 education do you think will be needed to create effective pathways into the Advanced British Standard? (250 words)

With regards to maths, statistics and data skills, we believe that focusing solely on post-16 is too late. Significant changes are needed pre-16 to engage students and ensure the curriculum is relevant and interesting, to combat the negative reputation of these subjects and support students to study maths until 18.

We suggest:

- Using engaging, real-world examples to bring content to life and ensure it is interesting and relevant
- Increased focus on real-world data, modelling, interpretation, and computing from early years
- An alternative pathway for the 'forgotten third' – stopping the cycle of numerous compulsory GCSE resits, as this drives disengagement
- Assessment of practical, applied skills that allow demonstration of competence with the full statistical cycle of collecting and analysing data
- Offer a renovated Statistics/Data GCSE (that is offered alongside the also renovated Maths GCSE). Students could take both GCSEs (= two GCSEs worth of maths, statistics, and data), or could take a single combined GCSE with core content covering both Maths and Statistics/Data (= one GCSE).
- Clarify the distinction between maths, statistics, and data science, offering an opportunity for all to be studied separately, from age 11 onwards.

Full details of our views on maths to 18 and the focus needed pre-16 can be found here: https://rss.org.uk/RSS/media/File-library/Policy/2023/RSS-Maths-to-18-proposals-final.pdf

49. If you have views on how students can be supported to make informed choices about their Advanced British Standard programme or apprenticeship – linking to their prior attainment, abilities, interests and future ambitions – please share below. (250 words)

The ubiquity of statistics and data to the current landscape (from daily activities to a range of future career paths) should be emphasised, so that students understand how these subjects can support them to understand the world and workplaces around them.

The difference between maths, statistics, and data science should be explained and clear from earlier years of education, so that students are aware of the distinction and can make informed choices about areas they may wish to study/pursue in the future.

51. If you have views or evidence on the additional support that may be needed to enable other groups of students to access the Advanced British Standard, please share them below. Examples of these groups include disadvantaged students and students with caring responsibilities. (250 words)

It will be important to ensure that embracing digital technology does not widen the digital divide and further disadvantage already disadvantaged students.

Consideration is also needed to ensure that introducing the ABS does not inadvertently disadvantage students who may already be from disadvantaged backgrounds, for example if students only complete a few subjects but not the whole ABS.

52. If you have views on how to ensure the Advanced British Standard provides effective pathways into post-18 education or study, please share below. (250 words)

With regards to maths, statistics, and data science, understanding of the distinction between these is needed, so that students understand the difference and know the disparate avenues available to them to purse post-18.

This is crucial to enable a steady pipeline of people pursuing these careers, which is necessary to support key industries as well as to provide future maths, statistics, and data science teachers.

53. If you have views on how to ensure the Advanced British Standard reforms meet the needs of employers, please share below. (250 words)

There is a great need for data science skills and ability to interpret data in a wide range of jobs, and this is turn means that there should be a significant focus on developing these skills in the ABS.

Engagement with employers will be needed to ensure support for the new qualification content and that it provides adequate skills. There may be implications for employers and university courses if the maths, statistics, and data science content taught at 16-19 is altered.

54. If you have views on the impacts of the Advanced British Standard reforms on other groups of students who take post-16 qualifications, please share them below. Examples of these groups could include adults in further and community education providers, students in custodial settings, and students in devolved administrations, Crown Dependencies or overseas. (250 words)

We have questions around how those not in school, eg adult learners, would be able to study a single subject – as they can currently. We would not want to see a decrease in further learning opportunities. How will students interested in taking a few subjects, but not the whole qualification, demonstrate their achievement in these select subjects?

Consideration is also necessary to ensure that students at Further Education colleges are not forgotten, and that these colleges are also supported to provide the ABS.

55. If you have views on the impacts (positive or negative) of the Advanced British Standard reforms on any group with a protected characteristic, please share below. (250 words)

Consideration should be taken to ensure that the gender gap in take-up of more advanced (above compulsory level) options of maths, statistics, and data is minimised.