

Rt Hon Damian Hinds MP
Secretary of State for Education
Department for Education
Sanctuary Buildings
20 Great Smith Street
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15 January 2018

Dear Mr Hinds

Education policy proposals from the Royal Statistical Society

On behalf of the Royal Statistical Society (RSS), I offer our congratulations on your appointment as Secretary of State for Education. The RSS is a membership body promoting a world with data at the heart of understanding and decision making. We have more than 9,000 members in the UK and across the world, including 2,500 e-student members and 600 e-teacher members.

The RSS believes that everyone needs to be able to use and interpret statistical information, to benefit their studies (regardless of subject), their everyday lives, their engagement in the democratic process, and their future careers. Statistics and data are increasingly important to a wide range of subjects and areas of industry and commerce. Employers have unmet demand for people with strong numeracy skills that can be applied, and there is a substantial skills gap in data-driven industries.

In education, all students must be able to question, challenge and contextualise statistical information; interpreting data and statistical results in the context of the original problem. As such, we have championed the need for students to be taught statistics in realistic, modern contexts, using realistic data, and we are pleased to see this now taking place in subjects including A level Geography and A level Mathematics.

In considering your Department's work in the year ahead, we urge you to:

Complete the implementation of the Adrian Smith review for mathematical skills

Professor Sir Adrian Smith's review of post-16 mathematics provides a roadmap for improving mathematical skills across the range of education providers in England. We look forward to seeing all the recommendations implemented, including:



- Ensuring that students have access to a range of suitable pathways to develop their mathematical skills, including Functional Skills, Core Maths, A and AS level Statistics, and A and AS level Mathematics and Further Mathematics.
- Improving awareness and take-up of the Core Maths qualification.
- Ensuring technical education development has appropriate and timely expert advice on mathematical content.
- Reviewing the 16-18 GCSE resit policy with the aim that a greater proportion of students without a grade C or equivalent attain appropriate mathematical understanding by age 18.
- Understanding the cultural and other root causes of negative attitudes to mathematics.
- Preparing for the long-term implications of the rise of data science as an academic and professional field.

We have been pleased to see a thoughtful, consultative approach being taken by taken by DfE officials and Ministers, and we are looking forward to further discussions with members of your department's staff about data science on 17 January.

Improve basic numeracy skills in adults and young people

Basic numeracy skills form the foundation for understanding data and statistical information. Your party's manifesto pledged to strengthen the teaching of numeracy in the early years. This is admirable, but efforts must be made to address issues of innumeracy in secondary schools and the adult working population also.

Increase teacher retention, recruitment, and skills

Crucially, we believe your department needs to ensure that teachers across the education system have the skills and capacity to teach modern data handling and statistical techniques. Increasing the uptake of mathematical courses post-16 will require more teachers of mathematics, of course, in schools and in colleges. In addition, curriculum reforms have recognised the increased role of data in subjects as varied as geography, biology, business and psychology. Organisations such as the STEM Learning Centre, Nuffield Foundation, Association for Science Education and the Royal Geographical Society have all undertaken work to support teachers in a range of subjects to teach data skills better; more such activity is required. The re-incorporation of the National College of Teaching and Leadership's recruitment functions into the department offers an opportunity to improve recruitment and retention. In short, there is a need to redouble your department's efforts to recruit, retain, and professionally develop teachers.

Develop quantitative skills in higher education

The improvements in number and data skills at school need to be reflected in improvements at university also. University courses should develop people's skills to participate at higher levels in the data economy. As highlighted in the report "Mathematical sciences: Driving the UK economy" by the Council for Mathematical Sciences, mathematical sciences currently contribute 16% of UK Gross Value Added and 10% of all jobs.

We would like to see continued support for quantitative skills in disciplines within and beyond the social sciences that have a systematic shortfall, development of programmes to develop advanced

quantitative methods, and more resources for training centres to work across disciplines and collaborate with other universities. A greater supply and uptake of doctoral and post-doctoral training would also be valuable both for research institutes and for industry. Coordination on this issue across research and higher education funding, oversight of which is now split between BEIS and DfE, would be very welcome.

Ensure that accountability frameworks for universities are up to scratch

The Teaching Excellence Framework (TEF) is now being implemented. Our considered view is that there is a need for further thought, as the metrics in the framework may not measure properly what the Government wishes TEF to address. For example, courses in which it is more difficult to achieve a high grade may receive low student satisfaction ratings irrespective of the teaching quality. We look forward to the independent review in 2019, and would welcome reassurance that this will be fully resourced and the review team is given the mandate and scope to undertake the review in the most effective manner.

I hope these policy suggestions prove helpful and provide you, and your fellow Ministers, with some interesting food for thought. We would be happy to provide any supporting information that you or your officials might find useful.

Yours sincerely

Hetan Shah
Executive Director