

Response to AQA's decision not to redevelop AS and A-level in Statistics

The British Academy, Academy of Social Sciences, Royal Statistical Society, Nuffield Foundation and Nesta today responded to AQA's decision not to redevelop AS and A-Level specifications in Statistics.

Statistics is the science of learning from data. Both government and business argue that in tomorrow's digital economy these data skills will be crucial¹, and that pupils must have the opportunity to learn them in school. Employers continue to cite insufficient complex numerical and statistical skills of both existing staff and applicants.²

It is therefore regrettable that AQA has announced that it will not redevelop the new Statistics A-Level. What is especially unfortunate about this decision is that the new, thoroughly revised A-Level was focused on precisely the kind of data skills that pupils and students need in a data-rich world. Instead of axing it AQA ought to be ensuring that as many pupils as possible can take it.

UK school pupils tend to be ranked only in the middle of developed nations in mathematics. Our undergraduates embark on degree courses with varying, and often weak, fluency in numerical skills and statistics³. The Q-Step Programme is doing much to address this in higher education social science teaching. Equally, in the workplace, demand for more advanced quantitative skills has risen sharply in the past two decades, with almost 30% of employers citing complex numerical and statistical skills as hard to find amongst applicants.⁴

As argued in the British Academy's publication *Count Us In*, there are many benefits to building statistical skills in the UK population, including helping citizens to participate more fully in the democratic process; enhancing research in universities and in the workplace; and supporting the economy, taking advantage in particular of the advent of "big data".⁵ It has been estimated that, 58,000 new jobs a year may be created in the UK in the big data marketplace between 2012 and 2017.⁶ Across the economies of the European Union, the advent of "big and open data" has been predicted to contribute an extra £147 billion per annum to GDP by 2020. The direct value of public sector data alone to the UK economy has been assessed at £1.8 billion per annum.⁷

Whilst the redeveloped A-Level specification for mathematics with a greater focus on statistics, and new qualifications such as Core Maths, are welcome, it is important that we continue to offer a range of pathways for the study of statistics for post-16 students. This

¹ <http://www.publications.parliament.uk/pa/cm201617/cmselect/cmsctech/270/270.pdf> and https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/518582/ind-16-6-wakeham-review-stem-graduate-employability.pdf

² UKCES Employer Skills Survey 2015: UK Results. Evidence Report 97, May 2016

³ <http://www.oecd.org/skills/piaac/Country%20note%20-%20United%20Kingdom.pdf>

⁴ UKCES Employer Skills Survey 2015: UK Results. Evidence Report 97, May 2016

⁵ <http://www.britac.ac.uk/sites/default/files/Count-Us-In-Full-Report.pdf>

⁶ Mohamed, S., & Ismail, O. (2012). Data equity: unlocking the value of big data. Centre for Economics and Business Research.

⁷ Buchholtz, S., Bukowski, M., & Śniegocki, A. (2014). Big and open data in Europe: a growth engine or a missed opportunity? Demos Europa & Warsaw Institute for Economic Studies.

includes Statistics A-Level, as alongside increased statistical content in A-Level curricula in other subjects across the social and natural sciences. The absence of a reformed AS- and A-level in Statistics takes away an important element in the mixed economy of numerically-rich post-16 qualifications in England, Northern Ireland and Wales. This is, we feel, regrettable and would encourage consideration of ways to build a more robust appetite for these qualifications. As has been noted by the Nuffield Foundation, fewer young people in the UK continue to study mathematical subjects beyond 16 than in many competitor developed nations: this change may only make matters worse.⁸

The British Academy, Academy of Social Sciences, Royal Statistical Society, Nuffield Foundation and Nesta would welcome the opportunity to discuss how best to re-start the development process and retain this important qualification with the Department for Education, and with AQA and other Awarding Organisations.

Notes:

The British Academy is the UK's national body for the humanities and social sciences. Since 2011, it has run a dedicated programme of work on Quantitative Skills (QS) and the importance of QS for society, the economy, research and the individual. It has produced numerous reports on this issue including, *Count Us In*, *Measuring Up* and *Society Counts*. The Academy also convenes a High Level Strategy Group for Quantitative Skills with representation from the Royal Statistical Society, the Nuffield Foundation, the Academy of Social Sciences, the Department for Education, the Higher Education Funding Council for England, BEIS, Universities UK, the Economic and Social Research Council, the National Statistics Authority, the Advisory Committee on Mathematics Education and Nesta.

The Academy of Social Sciences is the national academy of academics, learned societies and practitioners in the social sciences. Its mission is to promote [social science](#) in the United Kingdom for the public benefit. The Academy is composed of around 1100 [individual Fellows](#), 42 [Learned Societies](#), and a number of [affiliate members](#), together representing nearly 90,000 social scientists. Fellows are distinguished scholars and practitioners from academia and the public and private sectors. Most of the Learned Societies in the social sciences in the UK are represented within the Academy. It is also the founder of the [Campaign for Social Science](#).

The Royal Statistical Society (RSS) founded in 1834 is one of the world's most distinguished and renowned statistical societies. It is a learned society for statistics, a professional body for statisticians and a charity which promotes statistics, data and evidence for the public good. Today the Society has nearly 8000 members around the world. www.rss.org.uk

The Nuffield Foundation is an endowed charitable trust that aims to improve social well-being in the widest sense. It funds research and innovation in education and social policy and also works to build capacity in education, science and social science research.

The Foundation's work in post-16 mathematics has identified the need for increased opportunities for young people to learn and apply quantitative skills, and its Q-Step Programme (co-funded with the ESRC and HEFCE) – designed to promote a step-change in

⁸ http://www.nuffieldfoundation.org/sites/default/files/files/Mathematics_after_16_v_FINAL.pdf

quantitative social science training in the UK – is one of the ways it is seeking to address this problem.

Nesta is the UK's innovation foundation. We help people and organisations bring great ideas to life. We do this by providing investments and grants and mobilising research, networks and skills. We are an independent charity and our work is enabled by an endowment from the National Lottery. Nesta is a registered charity in England and Wales 1144091 and Scotland SC042833.

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Nesta's work understanding the UK's data skills and needs includes surveying labour market needs in [Skills of the Datavores: Talent and the data revolution](#) and policy recommendations for improving analytical skills in [Analytic Britain: Securing the right skills for the data-driven economy](#). Nesta is also a member of The Data Skills Taskforce, a cross-cutting group proposed by Nesta and Universities UK, that is working to identify good practices for education and skills provision, and spur collaboration across industry.