ROYAL STATISTICAL SOCIETY

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RSS RESPONSE TO DEPARTMENT FOR SCIENCE, INNOVATION AND TECHNOLOGY CONSULTATION ON 'GROWING UP IN THE ONLINE WORLD'

26 May 2026

1 Introduction

1.1.1 This is the Royal Statistical Society's (RSS) response to the Department for Science, Innovation and Technology consultation on growing up in the online world. The RSS is a membership organisation for statisticians and data scientists, and we advocate for the importance of statistics and data. Representing over 10,000 members, we champion the role of statistics and data in society, and work to ensure that policy formulation and decision-making are informed by evidence for the public good.

1.1.2 We believe that statistical literacy is important for all to ensure that people understand the data and statistics which influence their daily lives, their work and the world around them, and can meaningfully interpret and engage with those statistics.

1.1.3 We have long campaigned for statistical and data literacy to be understood as core components of media literacy.[1] These skills are increasingly important in light of the link between social media and misinformation[2], particularly as it is now the primary news source for 16-24 year olds.[3] As artificial intelligence becomes embedded across nearly all areas of society—reshaping how people interact with government, employment, leisure, and even their own health—the importance of statistical literacy only increases. It is essential that future

[1] Royal Statistical Society (2025). 'Royal Statistical Society – written evidence (MLI0032). House of Lords Communications and Digital Select Committee inquiry: Media literacy', https://committees.parliament.uk/writtenevidence/140291/pdf/

[2] Emily Denniss, Rebecca Lindberg, Social media and the spread of misinformation: infectious and a threat to public health, *Health Promotion International*, Volume 40, Issue 2, April 2025, daaf023, https://doi.org/10.1093/heapro/daaf023

[3] Ofcom (2025). 'News consumption in the UK: 2025', https://www.ofcom.org.uk/siteassets/resources/documents/research-and-data/online-research/adult-and-teen-news-consumption-survey/news-consumption-in-the-uk-2025-research-findings.pdf?v=400636

citizens can understand the models and data that underpin the AI systems influencing their lives.[4]

1.1.4 To achieve this, we recommend that the pre-16 maths curriculum should be rebalanced to give greater emphasis to statistics, probability and data from a young age, in order to better reflect the skills required by the digital citizens of the future. We also recommend that statistical concepts, particularly those relevant to build and assess AI, should be embedded across disciplines, to ensure that all young people are equipped to use AI safely and interpret AI outputs critically.[5]

1.1.5 Online platforms must be subject to robust and ongoing evaluation; statistical techniques can provide the tools needed for this. Protecting children from online harm requires complete, reproducible and independently verifiable evidence about how algorithms work in practice. We therefore believe that regulators need appropriate powers and evidence to support this work, and call for the Competition and Markets Authority (CMA) to be granted enhanced powers to facilitate this

2 Chapter 2: Interventions for safer, more positive experiences

2.1 Question 28: What do you think the impacts would be if online platforms were required to restrict specific features or functionalities, or to introduce time limits?

2.1.1 We do not have the expertise to comment on the specific impacts of restricting particular features or functionalities upon children. However, we want to emphasise the point that robust evidence and evaluation are essential to understanding the real-world effects of any such interventions.

2.1.2 Many online platform features, including AI systems, are fundamentally statistical in nature. Their behaviour emerges from data and user interaction patterns, meaning impacts cannot be

[4] Royal Statistical Society (2026). 'AI is Statistics: Why statistical thinking is vital for the effective, ethical and safe use of AI', https://rss.org.uk/RSS/media/File-library/Policy/2026/AI-is-Statistics-FINAL.pdf
[5] Royal Statistical Society (2024). 'Key recommendations for the statistics curriculum in the UK', Recommendations-for-statistics-curriculum-in-the-UK-full-paper-final.pdf

fully understood through one-time evaluation of a specific feature or tool. They require rigorous and ongoing statistical evaluation to ensure that they are safe and effective.

2.1.3 Statistical methods can provide the tools needed for effective evaluation, which should be proportionate and context-specific. The appropriate methods will vary depending on whether a feature is designed to inform, recommend or restrict behaviour, and on the level of potential risk to children.

2.1.4 Critically, evaluation must reflect how systems are used in practice, not just according to how they are designed to function. Children in particular may engage with platforms in ways which differ significantly from intended use, for example by bypassing age checks.[6] This means that one-off pre-deployment checks are insufficient. Effective evaluation requires continuous, iterative testing in live environments which can detect how impacts evolve in response to user behaviour.

2.1.5 Regulators need appropriate powers and access to evidence to support effective evaluation. We have called for the CMA to be granted enhanced powers to effectively regulate AI and other complex algorithmic systems. The proposed enhanced powers would ensure regulators can request counterfactual runs, require firms to vary user interfaces to reveal behavioural effects, and observe AI models responding to defined inputs. This matters because effective consumer protection analysis depends on complete, reproducible and independently verifiable evidence about how algorithmic systems operate in practice.[7]

[6] Internet Matters (2026). 'The Online Safety Act: Are children safer online?', https://www.internetmatters.org/wp-content/uploads/2026/04/Internet-Matters-Online-Safety-Act-Report-May-2026.pdf
[7] Royal Statistical Society (2026). 'RSS Submission to the Refining our Competition Regime Consultation' https://rss.org.uk/RSS/media/File-library/Policy/2026/03-26-Competition-Consultation-Response.pdf?ext=.pdf

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DATA | EVIDENCE | DECISIONS

3 Chapter 4: Preparing children for a digital future and enriching their online experiences

3.1 Question 52: Which areas of media or digital literacy do children and families most need additional help with?

3.1.1 We believe that statistical and data literacy are fundamental components of media and digital literacy, which can support children to navigate online spaces safely and effectively.

3.1.2 Statistics and data are widely used in the media, however news articles rarely engage critically with statistics and many people lack the required skills to critically interpret claims.[8] Without the ability to evaluate statistics – for example by questioning sample sizes, bias or data visualisation - people risk being misled by inaccurate or manipulated data, a challenge likely to grow with the rise of AI-generated content. Statistics and data literacy are therefore critical for supporting children to identify misinformation online.

3.1.3 These skills are also fundamental for helping children to understand how the online platforms work, and the technologies which power them. For example, social media platforms rely on algorithms trained on large volumes of user data to predict and prioritise content. Statistical and data literacy help children understand that what they see is shaped by patterns in data and is designed to maximise engagement.

3.1.4 Algorithms are trained on engagement data rather than accuracy; as a result, they can amplify misleading or polarising content. Statistical thinking empowers children to question patterns, interrogating why content on their feeds is distinct from their friends' feeds. Without these skills, children are more likely to take algorithmically curated content at face value, increasing vulnerability to misinformation and potentially harmful content.

3.1.5 As AI becomes increasingly embedded across work and everyday life, it is critical that young people are empowered to use AI effectively, safely and ethically. Emerging evidence around how young people engage with AI highlights the urgency of equipping students with the skills

[8] Office for Statistics Regulation (2022). Statistical Literacy, http://osr.statisticsauthority.gov.uk/wp-content/uploads/2023/02/OSR_Statistical_Literacy_Research_Report.pdf

needed to safely navigate AI; one in four teens in England and Wales have turned to AI chatbots for mental health support[9] with over half of teen users of AI companions reporting moderate to complete trust in the information and advice received from AI companions.[10]

3.1.6 Statistical thinking helps learners to question data quality, understand underlying assumptions, interpret uncertainty and assess the AI outcomes and limitations. In the context of mental health advice given by AI chatbots, statistical thinking empowers children to question where the information has come from, and whether there are any limitations to the advice being given. It encourages young people to treat AI outputs as probabilistic and fallible rather than as authoritative fact, reducing the risk of potential harms.

3.2 Question 54. Where, if anywhere, would you like to see more support available in the future?

3.2.1 The RSS has long advocated for improvements to the statistics curriculum in the UK, to ensure that students leave school with the skills needed to navigate a data-rich and AI-enabled world.[11]

3.2.2 Recent research by the Observatory for Mathematical Education suggests that maths education remains oriented towards geometry and algebra, which reflects a legacy curriculum aimed at preparing students for an engineering-based economy.[12] We believe that the pre-16 maths curriculum must be rebalanced to give greater emphasis to statistics, probability and data from a young age, to better reflect the skills required by the digital citizens of the future.

3.2.3 We would also like to see statistics taught across different disciplines, not only as part of the maths curriculum, at both primary and secondary level. This would support students to

[9] Youth Endowment Fund (2025). 'Children, violence and vulnerability 2025: Mental health and experiences of violence', https://youthendowmentfund.org.uk/wp-content/uploads/2025/12/CVV25_R3_Mental_health.pdf
[10] A. McStay & V. Bakir (2026). 'Do AI companions understand? Most UK teens say yes', https://drive.google.com/file/d/1dNte5ZH6prpm1inDQsZnN-N7H_0K4VPA/view
[11] Royal Statistical Society (2024). 'Key recommendations for the statistics curriculum in the UK', Recommendations-for-statistics-curriculum-in-the-UK-full-paper-final.pdf
[12] Observatory for Mathematical Education (2025). 'Review of Mathematical Education 2025', https://www.nottingham.ac.uk/observatory/documents/reports/rome-2025.pdf, p. 74.

interpret statistics in context, not simply as an abstract or mathematical task. A stronger emphasis should be placed on the use of real-world contexts, to ensure that statistics and data education is both engaging and relevant to real life. By incorporating statistics education into the teaching of subjects such as climate change, politics or public health, students can engage confidently with statistics and interrogate the data behind complex and contested areas of debate.

3.2.4 Technology must play an important role in statistics education, helping students to work with real datasets and explore different visualisation techniques. Using visualisation tools helps students see how data can be presented (and misrepresented), supporting them to engage with statistics as they encounter them in real life – on online platforms.