

MOLLY ROSE FOUNDATION

Critical algorithmic literacy

- Algorithms are central to online experiences and to online harm. As a core part of platforms' business models, they are incentivised to prioritise user engagement over safety.
- MRF are calling for the urgent prioritisation of critical algorithmic literacy (AL), to ensure children have the knowledge, critical skills and agency to navigate an algorithmic internet.
- [The Curriculum Review offers a once in a generation opportunity to embed AL across the curriculum](#). Doing so will not only reduce online harm and deliver on suicide prevention objectives, but will also empower young people to thrive in a data-driven future.

Questions to raise

- **Algorithms now shape how we interact with online information of all kinds. They also drive online harm, leading to the deaths of children like Molly Russell and events like the Southport riots. Will the Government use the Curriculum and Assessment Review to commit to a new focus on critical algorithmic literacy, giving young people the skills they urgently need for an algorithmic internet?**
- **In July, the DSIT Committee recommended that users be given control over the content that is pushed to them by online algorithms. Will the Government commit to introducing new legislation that mandates platforms give users agency over algorithmic feeds?**

The risks and opportunities of algorithmic media

Algorithms (the automated processing of data based on certain rules) now shape almost all online experiences, dictating the content we see in social media feeds, search results, adverts and AI tools. This is in large part due to their central role in engagement-driven business models, with user and behavioural data used to tailor content to keep our eyes on-screen for as long as possible.

As such, algorithms are increasingly key to how we experience the world – exposing us to new risks, while changing the way we learn, work, seek entertainment and participate in democracy.¹

How algorithms drive harm by prioritising engagement over safety

- **Algorithmic recommendation plays a central role in the overwhelming scale of online harm.** In July, the DSIT Committee reported 'compelling evidence' that social media algorithms amplify mis/disinformation, extremism, prejudiced views and suicide and self-harm content.²
- **Platforms' engagement-based business models are key to this - with harmful content often more likely to be promoted given its potential to capture attention.**³
- Algorithms drive harm in a number of ways - **causing unintentional exposure to harm through amplifying viral or trending content**, or creating **devastating echo chambers** where vulnerable people are bombarded with ever-more extreme content, as was tragically the case for Molly.

Molly's experience of algorithmically-recommended suicide and self-harm content

Molly Russell was 14 when she died after being bombarded with algorithmically-recommended content that normalised depression, suicide and self-harm, seeing 2000 items of this content on Instagram alone. The inquest into her death highlighted how she had been taken down a toxic rabbit hole of extreme content as a result of social media's underlying business model.

Almost eight years after Molly's death, little has changed. MRF research has identified how algorithms continue to aggressively push harmful content to enhance user engagement, with a short period of activity

¹ CMA, Ofcom, ICO, FCA, 2022. *The benefits and harms of algorithms: a shared perspective from the four digital regulators.*

² Science, Innovation and Technology Committee, 2025. *Social Media, misinformation and harmful algorithms.*

³ Digital Mental Health Programme, University of Cambridge. 2025. *Written evidence for Science Innovation and Tech Committee.*

on Instagram leading dummy accounts to encounter harmful content in 97% of instances.⁴

The wider social, political and economic implications of algorithmic media

- **Algorithmic filtering is now central to how we engage with information of all kinds** – whether we’re reading the news, looking up something about our health, or doing schoolwork.⁵
- **Algorithms shape how we participate in the economy**, influencing commercial decision-making, our visibility to employers, and making recommendations about what we buy and at what price.⁶
- **They also influence our democracy**, with filtering and microtargeting unevenly amplifying political positions, and holding the potential to spread mis/disinformation and polarise the electorate.⁷

How children are left unprepared for an algorithmic world

Despite the significant risks and opportunities that algorithms pose, children like Molly are currently poorly supported to navigate their effects. Awareness and understanding of algorithms varies significantly, with evidence that algorithmic literacy presents a new ‘digital divide’.⁸

In the context of online harm, children feel the onus is on them to develop ad hoc skills to navigate algorithmic harm, and feel abandoned by a lack of formal education and support.⁹ Issues include:

- **Clear gaps in media literacy education in schools.** New RSHE guidance has only limited lines on being a ‘discerning consumer of information online’, with similar missed opportunities in guidance on Teaching Online Safety in Schools. Key resources and training materials like the Education for a Connected World [framework](#) also fall short. Examples of [good practice](#) are rare.
- **When algorithms are taught in the wider curriculum (e.g. in computing) the emphasis is on technical understanding, rather than critical engagement with their effects.** The impact of computing is also limited, with only 89,600 (mostly male) students enrolled at GCSE level in 2025.¹⁰
- **The evidence-based needs urgent strengthening** to identify what works to improve algorithmic literacy. Algorithms are not mentioned as a research focus in Ofcom’s 2024 Media Literacy Strategy, despite their relevance to existing focus areas on mis/disinformation, democracy and VAWG.
- **Regulation of algorithms via the Online Safety Act is falling far short.** Recent measures to prevent the recommendation of harmful content are weakly drafted and unlikely to prove effective. Ofcom suggest that measures to protect children from being recommended extreme content should attract a one-off cost of only £80k per platform – a level of investment that is clearly insufficient.¹¹

How critical algorithmic literacy can prevent harm and help children thrive

MRF are calling for the urgent prioritisation of Critical Algorithmic Literacy (AL), defined as ‘a critical understanding of how algorithms influence content, decisions, and outcomes, and functional skills needed to navigate these.’¹² This should act as a complement to strengthened regulation.

AL should be a fundamental competency for young people. Given its focus on underlying systems rather than specific issues, it can help mitigate content-based harm of all kinds, while maximising young people’s ability to make the most of how information works in the modern world. Good ML includes:

- **Awareness** that algorithms are being used and **knowledge** about how they function (e.g. what data they process and how they filter content).
- **Critical evaluation** of how and why algorithms may be impacting an online experience, and the effects that this may have on mental health, understanding of an issue or any other decision.
- The skills to **influence** algorithmic operations – for example to increase content diversity.

⁴ Molly Rose Foundation, 2025. *Pervasive by Design*.

⁵ 71% of UK adults now consuming news via online sources and 52% via social media - Ofcom, 2024. *News consumption in the UK: 2024*.

⁶ Voorveld, H, et al. 2024. Consumers’ persuasion knowledge of algorithms in social media advertising. *International Journal of Advertising*, 43(6)

⁷ Christiano T. 2021. Algorithms, Manipulation, and Democracy. *Canadian Journal of Philosophy*, 52(1), 109-124.

⁸ Eder, M. & Sjovaag, H. 2024. Artificial intelligence and the dawn of an algorithmic divide. *Frontiers in Communication*, 9.

⁹ Livingstone, S. et al. 2025. Can platform literacy protect vulnerable young people... *Information, Communication and Society*. 1-18.

¹⁰ Ofqual. 2025. *Provisional Entries for GCSE, AS and A level: summer 2025 exam series*

¹¹ For more detail on how Algorithm-focused measures fall short, please see MRF’s Protection of Children Code: Policy Briefing.

AL's role in supporting wellbeing, suicide prevention and online safety

AL is crucial line of defence against online harm, helping young people to mitigate the impact of toxic business models. Early evidence suggests that AL is likely to be part of established links between social media literacy and wellbeing¹³ – helping young people to build resilience, avoid harmful content and engage with content more intentionally and mindfully:¹⁴ Examples of benefits include:

- Understanding how algorithms can prioritise negative content and create toxic echo chambers can **help young people to question the content they encounter and its impact on their wellbeing**.
- **AL can reduce feelings of powerlessness and help young people have agency over online experiences**, for example by taking steps to avoid content or diversify their information sources

How investing in AL supports wider economic, political and social empowerment

- **Building the workforce of the future**. Information literacy has been identified as one of the most in demand skills for the future workforce, with AL an essential part of developing this.¹⁵
- **Strengthening democracy**, including addressing mis/disinformation, supporting informed citizenship/news engagement, contributing to political mobilisation, and reducing polarisation.¹⁶
- **Laying the groundwork for AI literacy**, another fundamental skill for the future.¹⁷

What needs to happen

Critical algorithmic literacy (AL) must urgently become a priority in education. The Curriculum and Assessment Review offers a once in a generation opportunity to embed critical online literacy in schools, and AL must be at the core of a curriculum that 'responds to social and technological change.'

- **The Curriculum and Assessment Review should recommend that, like media literacy, AL is clearly and coherently embedded across the curriculum and all key stages**, not just in PHSE and computing. We must make the most of cross-cutting opportunities to improve children's algorithmic literacy – whether they're searching for health info in science, or assessing historical sources.
- **DfE must commission and deliver best-in-class resources and teacher training materials to improve teacher confidence around AL**. These should promote the competencies listed above, as well as best practice for improving AL - including improving curiosity and motivation, peer-to-peer exchanges of algorithmic experiences, experimentation, and gamified and interactive resources.^{18 19}
- **Training and resources to support the implementation of new RHSE guidance on suicide prevention, online safety and awareness, and wellbeing online must explicitly focus on AL**.
- **AL should be a key part of new assessment of Media Literacy in schools**, with Ofsted Inspection frameworks learning from best practice around measuring AL.²⁰

However, responsibility cannot rest only on children, families and schools. We must also see top-down action to strengthen regulation and break the cycle of platform's toxic business models.

- **Strengthened regulation of algorithmic harm** - MRF are [calling for new legislation](#) that will address weaknesses within the Online Safety Act and reintroduce an overarching duty of care on platforms.
- **New legal duties for platforms to promote media literacy and wellbeing by design** – for example mandating upstream measures like feeds that prioritise agency, feedback and content diversity.

These changes must also be supported by a **wider cross-government reset for media literacy that establishes it as a fundamental life skill and prerequisite for unlocking a digital and AI economy**.

For more info on MRF's priorities for media literacy please see 'Media Literacy: A fundamental life skill.'

For further briefing, please contact Rowan Ferguson at r.ferguson@mollyrosefoundation.org

¹³ Schreurs, L. et al. 2021. Introducing the SMILE model. *Journal of Children and Media*. 15(3), 320-337

¹⁴ Winstone, L. 2024. Developing algorithmic literacy for positive social media engagement. The Churchill Fellowship.

¹⁵ NFER, 2023. *An analysis of the demand for skills in the labour market in 2035*.

¹⁶ Gagrcin, E. et al. 2024. Algorithmic media use and algorithmic literacy: An integrative literature review. *New Media and Society*. 0(0)

¹⁷ Cox, A. 2024. Algorithmic Literacy, AI Literacy and Responsible Generative AI. *Journal of Web Librarianship*. 18 (3)

¹⁸ Gagrcin, E. et al. 2024 Algorithmic media use and algorithmic literacy: An integrative literature review. *New Media and Society*. 0(0)

¹⁹ Policy Bristol. 2025. Algorithmic literacy must improve to support young people's wellbeing.

²⁰ Dogruel, L. et al. 2022. Development and Validation of an Algorithm Literacy Scale for Internet Users. *Communication Methods and Measures*. 16(2)