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Algorithmic literacy must improve to support young people's wellbeing

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About the research

Social media, search engines, and recommendation algorithms shape the information and experiences young people encounter online. Maximising the positive impacts on wellbeing while minimising harms is essential.

Algorithmic literacy – a critical understanding of how algorithms influence content, decisions, and outcomes, and functional skills needed to navigate these – is increasingly recognised as a key factor in digital wellbeing.

However, most young people have limited awareness of the inner workings of these algorithms or their potential implications for wellbeing. This is particularly concerning for young people experiencing poor mental health, who are vulnerable to unintentional exposure to harmful content, including graphic or triggering images of self-harm and suicide.

Algorithmic literacy is crucial to equipping young people with the knowledge and skills required to navigate the digital world safely and positively.

International best practice in supporting young people to develop algorithmic literacy was gathered via interviews with policy and academic experts in Canada, Finland and Australia. Experts emphasised that digital competencies – to which algorithmic literacy is now fundamental – are an essential life skill, necessary for health, social and economic empowerment.
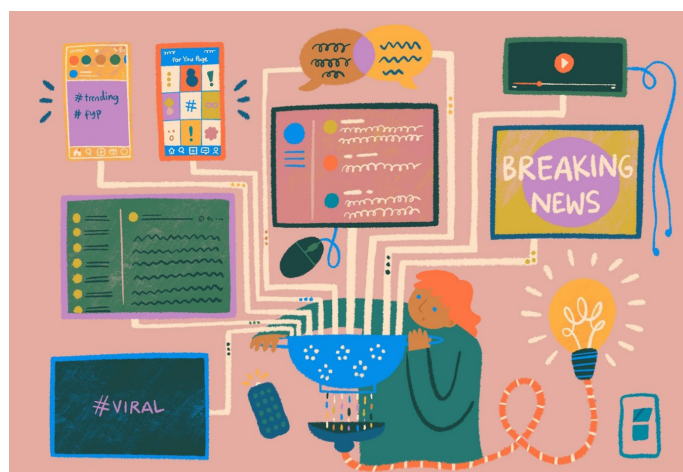
Policy and practice recommendations

1. Commission a UK Media Literacy Week

Commission a UK Media Literacy Week within the global programme, including high quality and evidence-based events, workshops and resources within schools, libraries, healthcare settings, and other public spaces – aimed at enhancing algorithmic literacy among all population groups within the broader context of digital and (social) media literacy.

2. Review current provision of algorithmic literacy

Commission an independent review of algorithmic literacy provision across UK schools, and where these topics fit best within the broader curriculum. Is the curriculum up-to-date with advances in AI and algorithms and how comprehensively is digital literacy taught across UK schools? Curricula content should be balanced – not overly focused on risk but on resilience, digital citizenship, active participation and scope for change, e.g., reducing bias in algorithms, harnessing social media algorithms for good (social activism).

3. Develop teacher confidence

Provide comprehensive digital media and algorithmic literacy training and continuing professional development opportunities to all teachers, including both computer science and social studies perspectives. Develop or commission high quality educational resources that are creative, interactive and gamified to support teachers to engage students in the algorithmic literacy curricula.

4. Introduce a digital literacy qualification

Introduce a compulsory Key Stage 4 qualification in digital media and algorithmic literacy for all young people across the UK. This must extend beyond functional skills to critical literacy, with curriculum input from both experts in technology and AI, and experts in media literacy, public health, psychology and sociology. For example, young people must understand how to use AI as well as the ethical issues that accompany this, e.g. bias in AI and algorithms, and the societal reflections and impact of this.

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Key findings

1. The UK lags behind many other countries in effective media literacy education, ranking 15th place in the Open Society Institute of Sofia Media Literacy Index – well below all Scandinavian countries, Estonia, Ireland, Canada and Australia. Anxiety around algorithms is a global public health issue that needs to be addressed across schools, families and communities.

2. Best practice examples for improving algorithmic literacy are interactive, creative and visually engaging (and sometimes gamified). Examples include: #ForYou - a card game to understand and navigate algorithms (MediaSmarts, Canada), and Algorithm of Disrespect - an interactive online tool illustrating the role of algorithms in perpetuating disrespectful and misogynistic attitudes (Department of Social Services, Australia).

3. National Media Literacy Weeks can be an effective tool for awareness raising and engaging with all stakeholders. For example, the flagship Media Literacy Week in Canada is a high profile annual programme of events sponsored by several tech and social media companies. Events are held at schools, libraries, community centres and museums and include in-person and online workshops on cyber-safety and misinformation, panel discussions and book displays.

4. Within the review of the UK National Curriculum, digital literacy should be prioritised as a core, standalone subject (separate to computer science or PSHE), with a flexible curriculum that can be adapted in keeping with technological advances. Currently in the UK, there is no compulsory digital media and algorithmic literacy education after the age of 14 years. A GCSE qualification (age 16) is available for those choosing to study Computer Science, but this is taken up by a minority of the student population, with girls particularly under-represented.

5. Algorithmic literacy should be embedded across all digital and media literacy themes within the school curriculum and extra-curricular programmes. Algorithms are central to most online experiences and are an essential cross-cutting component of digital and media literacy.

6. Critical media literacy must be embedded within all curriculum subjects. This will improve teacher confidence beyond those delivering computing and ensure it is covered from multiple perspectives. This will also maximise benefits for all subjects by establishing cross-cutting links and enhancing subject-specific digital skills.

> "Algorithms fall under [the theme] *privacy and security*, they fall under *media representation*, *finding and verifying [information], health.* They fall under *reading media* because to understand your 'for you' page you or where you're getting your Instagram feed, you have to understand how that was delivered to the algorithm. *Consumer awareness* is another one, understanding that the ads that you see were selected for you algorithmically. Understanding how algorithms are part of the business model different platforms use and then *community engagement* is another; understanding the influence that algorithms have on discourse and taking a more active role in training your algorithm, as well."
>
> Matthew Johnson,
> Director of Education, MediaSmarts

7. Teacher training and high quality, accessible resources are essential for the effectiveness of improvements to the algorithmic literacy curriculum.

8. Targeted programmes to enhance digital literacy in disadvantaged and vulnerable groups can be an effective extra-curricula complement to standard education.

9. Functional skills must be combined with critical thinking and mental health literacy to make digital media and algorithmic literacy effective for mental health prevention. For example, knowing how to train your algorithm to avoid self-harm content must be accompanied by understanding why it is a good idea to avoid self-harm content. The Finnish system integrates media literacy into the national curriculum as a transversal competence ('multiliteracy'), with a focus on critical thinking and digital resilience. Whilst this includes technical digital skills, for Finnish media education, the priority is to develop critical media literacy, which includes critical thinking and active participation and promotion of democracy, human rights and freedom of speech.

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