Digital and data literacy: comparing children's understanding of data and online privacy with experts' and advocates' data literacy practices

In this post originally published by the CILIP Information Literacy Group, Gianfranco Polizzi, research fellow at the University of Birmingham, writes about digital and data literacy, focussing on children's understanding of online privacy compared with experts and advocates and on what policymakers, schools and educators can do to educate children through formal education.

I recently gave a presentation on digital and data literacy at a webinar hosted by the Centre for Research in Digital Education at the University of Edinburgh. The webinar, of which a video recording can be found here, was a great opportunity to talk about how to promote digital and data literacy via formal education. This task has never been so important, considering that our societies are increasingly *datafied* – that is, based on processes that transform our lives into digital data that is stored and used within institutional contexts (think of how governments use biometric data to identify citizens) as well as commodified and (mis)used by tech corporations like Google and Facebook (think of the Cambridge Analytica scandal).

Inasmuch as these processes challenge the ways in which we think of and are (un)able to protect our privacy in the digital age, it has never been so urgent to re-design and regulate the digital environment in order to make it both more transparent and more accountable. This is why both ICO's (Information Commissioner's Office) new code of practice for online services and the UK Government's decision to give Ofcom new regulatory powers are promising developments. At the same time, nevertheless, teachers in schools, just like parents at home, are tasked with ensuring that children – who are the most vulnerable online as well as the new generations of the digital age – learn the skills and knowledge required to use the internet both critically and safely. But what are these skills and knowledge? And how can they be promoted via formal education?

In my presentation, I drew on my work to argue that we need to understand data literacy as a variant of digital literacy that requires functional and critical skills and knowledge about the internet. On the one hand, I cited secondary research about children in the UK. On the other hand, I drew on my own research with digital experts (e.g., media educators, information, IT and media professionals) and civic advocates (e.g., local councillors, political party candidates, activists) in the UK. These are two groups of the population that are, respectively, the most digitally savvy and the most civically active, which is why they were the best suited for exploring the ways in which digital literacy facilitates civic engagement, from reading news and discussing politics to campaigning and organising action. The question that follows, then, is: what can we learn from their experiences with a view to promoting digital and data literacy via formal education?

Children versus experts and advocates

A little more than a year ago, Sonia Livingstone and her colleagues found that 11-16-year-olds in the UK think of online privacy primarily in interpersonal terms – that is, in relation to how they interact with other users and what they share about themselves. However, they have a limited understanding of the privacy implications of how search engines and social media platforms collect and use their data, which echoes Ofcom's finding that only just over half (54%) of 12-15-year-olds in the UK know that both YouTube and Google are funded by the companies that advertise with them.

By contrast, on the basis of interviews with experts and advocates in the UK, what I found in my research is that:

- Experts such as information and media professionals (e.g., librarians, media publishers), and also advocates such as digital campaigners and media activists, are particularly knowledgeable about how internet corporations like Google and Facebook run search engines and online platforms.
- Besides understanding the privacy implications of how they interact with others on social media, not only do these professionals understand (and often worry about) how internet corporations collect, track and profile users' data for advertising purposes, but they also deploy such an understanding as part of data literacy

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tactics, or strategies, to protect their privacy from the power of these corporations.
- The skills and knowledge that underpin their tactics are both functional and critical, including practical digital skills as well as an understanding of how cookies and algorithms function and are used by internet corporations for data collection purposes.
- Their tactics range from lurking on social media, which is more prevalent among experts who access political content while avoiding posting their own opinions, to limiting the posting of personal information, which is more prominent among activists who have no choice but to use social media more actively to promote their activism. Activists, furthermore, employ tactics to protect themselves from not just commercial but also, potentially, government surveillance online, using messaging systems with higher levels of encryption than platforms like Facebook.
- Finally, both experts' and advocates' privacy concerns shape not just their data literacy tactics but also the ways in which they engage with and evaluate information online. As I have noted elsewhere, they use multiple search engines to compare and contrast different sources, often using DuckDuckGo, which they know is less invasive of privacy than Google. At the same time, they deliberately follow on social media individuals and organisations with opposing views to their own, which enables them to minimise the extent to which the algorithms of internet corporations present them only with information that reinforces their pre-existing beliefs.

In conclusion

Arguably, children, on the one hand, and experts and advocates, on the other hand, represent social categories that, among the general population, know, respectively, the least and the most about data and privacy online. Considering how much we can learn from the knowledge and experience of experts and advocates, here are a few recommendations for policymakers, schools and educators in terms of how to promote digital and data literacy via formal education:

- Data literacy needs to be promoted via the school curriculum in ways that are part of a more comprehensive approach to the promotion of digital literacy, with three subjects being particularly important: Computing, PSHE and Citizenship.
- Computing should place more emphasis on how functional digital literacy, which is what this subject prioritises, can be deployed, along with a critical understanding of the digital environment, to evaluate online content. Such an understanding should also be promoted more robustly through PSHE, which encourages students to understand the emotional, mental and privacy implications of using the internet within interpersonal contexts. Similarly, Citizenship should focus more on the importance of understanding not only media bias and misinformation but also how internet corporations operate, and on the ways in which such an understanding can, together with practical digital skills, underpin data literacy tactics and the ability to evaluate online content.
- In addition, teachers need to be supported with adequate resources (see the online privacy toolkit developed at LSE) as well as training aimed at improving their own digital and data literacy and the teaching of this as a cross-curricular subject.

Finally, as discussed at the webinar:

- On the one hand, schools need to set a good example in terms of how they handle students' data. On the other hand, we need to ensure that not only social media platforms and search engines but also digital learning tools and platforms, which are provided by educational technology companies and increasingly adopted by schools, are designed with children's rights and best interests in mind.

Notes

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