The datafied child in education: understanding a child’s digital footprint in the data landscape

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defenddigitalme.com
“the human race is about to enter a totally data mined existence, and it's going to be really fun to watch… the world in 30 years is going to be unrecognisably data mined.”

Jose Ferreira, CEO of Knewton, 2012
“education happens to be today, the world's most data mineable industry—by far.”

Jose Ferreira, CEO of Knewton, 2012
What does a datafied child look like to education companies?
Jose Ferreira, CEO of Knewton, 2012

https://www.youtube.com/watch?v=Lr7Z7ysDluQ
Source: YouTube channel of the Office of Educational Technology at the US Department of Education.
Changing the landscape of education infrastructure

How Google Took Over the Classroom

The tech giant is transforming public education with low-cost laptops and free apps. But schools may be giving Google more than they are getting.
Changing the language of education

Figure 2: Google for Education’s definition of ‘Googleyness’ (n.), from an AppsEvent workshop on G Suite for Education (2017).

Forthcoming publication: Disruptive play or Platform Colonialism? the contradictory dynamics of Google Expeditions and educational virtual reality
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Senior Lecturer, Communications and Media, FHEA
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Our mission at defenddigitalme


We work on the intersection of rights to privacy, participation, and protection, in both State and commercial use of children’s data.
The State of Data 2018: research

2018: Lessons for policy makers with a view to the UK Data Protection Act 2018 and the GDPR

Research
• 400+ State school data policies and practice
• 60 Higher Education institutions
• 153 Local Authorities
• Parent’s survey (children age 5-18)


https://defenddigitalme.com/stateofdata2018-gdpr/
What does education look like to a datafied child?
A day in the life of a datafied child

Presenter notes to accompany slide:
From before breakfast to bedtime and beyond, a pupil’s personal data are collected and may be transferred to hundreds of third parties in one day and thousands across their lifetime education. For school administration and central information management systems, and for communications, and use by local and national pupil databases. By apps, platforms, cashless payment systems, including biometrics and health data. On behavioural platforms, in exams and tests, in safeguarding software, seating plans, borrowing library books, and at after-school clubs. On CCTV, classroom cameras, and classroom and patrol bodycams. And even at home, for their homework, logged into school accounts, and around the clock. There is no way a child can understand or track their digital footprint by the time they are 18.
The context of data in education

Aims and Values.

Conflict between what education is for.

Learning analytics and effects of performance behaviours.

Attainment and outcomes aims, can become the goal.

Social complexity and data reductivism into dashboards.

Are we asking the right questions?
A day in the life of a datafied child

“The sensitivity of digitized pupil and student data should not be underestimated”

"...these problems demand sustained and iterative critical attention not only to system failures, but also to the kinds of worlds being built—both explicitly and implicitly—by and through the design, development, & implementation of data-intensive, algorithmically-mediated systems."

Who controls a child’s digital footprint?

defenddigitalme believes that parents and children have lost control and oversight of their child's digital footprint in education, even by their fifth birthday.
Variation across the world

State and private education models.

Financial conditions.

Social and cultural expectations.

Technology infrastructure.

Bandwidth, Big Data, and the $8bn market.

Interoperability. Procurement. Infrastructure.
data in education infrastructure
Where are there commonalities?

The purpose of education?

The UN Convention on the Rights of the Child?

Convergence and consistency with relevant legal instruments and common principles?
UNCRC rights and freedoms

Participation
Right to be heard (Article 12)
Best interests of the child (Article 3)
Freedom of expression (Article 13)
Freedom of thought (Article 14)
Association and assembly (Article 15)
Access to information (Article 17)
Right to cultural life (Article 31)

Provision
To development of their full potential (Article 28)
For responsible life in a free society
Right to education (Article 29)
Cultural and social benefit (Article 17)

Protection
From discrimination (Article 2)
Neglect and abuse (Article 19)
Exploitation and harms to welfare (Article 36)
Injurious material (Article 17e)

Privacy
No child shall be subjected to arbitrary or unlawful interference with his or her privacy, family, or correspondence, nor to unlawful attacks on his or her honour and reputation. The child has the right to the protection of the law against such interference or attacks. (Article 16)
A common basis in data law

Article 5 - legitimacy of data processing and quality of data

“… on the basis of the free, specific, informed and unambiguous consent of the data subject or of some other legitimate basis laid down by law”.
New laws to protect personal information

Have you ever considered how much personal information people give away when they're online? From setting up social media accounts to the websites we visit and the comments and pictures we post, our online activities tell internet companies a lot about our lives. This data is known as a "digital footprint" and not everyone is happy about how easy it can be for others to see and use it.

On 7 August, the Government announced details of plans for new laws that are designed to protect people's information online. Although rules about how this information can be used already exist, a new Data Protection Bill would strengthen them and make it easier for people to find out what personal data companies already hold about them—and to be able to ask them to change it (if it's incorrect) or delete it.

The laws would also force companies to make it more obvious what people are agreeing to when they sign up for a new online service. At the moment, lots of people don't really know what their information is being used for.

Most importantly, for many young people, social media companies will have to delete any material posted by people when they were children, if the person who posted it requests it to be removed. This is called the "right to be forgotten" and means that people have a right to delete information that they find embarrassing or no longer want to be in the public domain.

Companies who don't follow the new rules could be punished by being forced to pay millions of pounds in fines. The plans will be debated in Parliament in the autumn. Similar rules are being enforced across the European Union from May 2018.

How healthy is your online diet?

Last week, the Children's Commissioner, Anne Longfield, said that children should be encouraged to use more educational sites and apps and that social media companies should stop making it so easy for young people to become addicted to using their services. She compared social media platforms such as Snapchat and Facebook to junk food and advised parents to make sure that their children have a "healthy online diet."

Time online isn't a waste of time

Robert Hannigan, who used to be in charge of the UK government's intelligence and security organisation, believes that encouraging children to explore the digital world and to work out how it works will inspire more young people to pursue careers in science and engineering. "We need young people who have been allowed to behave like engineers: to explore, break things and put them together," wrote Hannigan in The Daily Telegraph.
Challenges for children and parental consent

- Privacy and data protection by default and design
- Data minimisation standards and re-use
- Data distribution at scale and interoperability
- Automated and semi-automated profiling and decision-making
- Public interest, public task definition, and derogations
- Ability to understand and action a child’s right to object, erasure, rectification and restriction
- Understanding Subject Access and redress
- Uses of geolocation technology beyond necessary purposes
- Age verification
- Recognised additional vulnerability
- Consent for further processing purposes is bundled into home-school agreements but not fair, genuine or freely given.
School Information Management Systems

Purposes
Pupil level data management
Common Transfer Files between schools
Interoperability
Administration
Communications

Problems
Opinion becomes data which takes on meaning.
Excessive data collection.
Permits centralised Data export models at scale to third parties:
  data access by an indefinite numbers of persons
  APIs are improving rate of raw data distribution, but still at scale.
  Marketing and adTech targeting using parental contact info without lawful basis.
Lifetime records become permanent and widely shared.
Mass errors can multiply at scale, and go unseen.
Loss of privacy can be hard to see or quantify.
Loss of public sector knowledge in personal data, to commercial sector.
Procurement lock-in through core service and 3rd party dependency.
Core Platforms: Case studies

Google
Microsoft
and others.
Apps

Purposes inside school
Classroom learning.
Quick testing tools.
Homework.
Administration.
Sickness reporting.
Home school communications.
Apps

Problems

Excessive data collection.
Raw named data transfers when anonymised data could do.
Unsafe design and security.
Unproven pedagogies with ‘evidence base’ from providers.
Data export abroad.
Loss of pupil data to commercial sector.
Marketing and adTech targeting.
Personal mobile phone use: access, cost, data, discrimination.
Scope creep of the data collected to use beyond purpose of education.
Case study: free apps

- Due diligence not done
- Terms and conditions unclear
- Data retention has closing date for withdrawal
- International tables could be scraped for data
Case study: Administration and ads

Welcome,
J Persson (littlehadlow@gmail.com)

The ‘top card’ for under 18’s - Start your free trial today!

Enjoy 20% off your digital pocket money card

IMPORTANT - SYSTEM AVAILABILITY: We are making some planned changes to ParentPay on Tuesday 19th March. As a result users will not be able to log in to ParentPay for approx 1 hour after 22:00. We apologise for any inconvenience this may cause.

Pay for Anna’s meals
Pay for other items
Cameras and CCTV

Purposes:
External security.
Classroom security.
Behavioural monitoring.

Problems:
Excessive data collection.
Unsafe design (hacks 2018 streamed UK school cameras from Blackpool to the US).
Scope creep.
Lack of oversight and accountability.
Cameras scope growing to web cams, body cams.
A camera in EVERY classroom: would you do it?

Cath Murray

I’m in an engineering lab at a UTC in central Birmingham and it’s all feeling a bit Black Mirror.

The popular sci-fi series has an episode called The Entire History of You, where a lawyer plays back his work appraisal for his wife and they analyse every gesture of the panel. In this fictional future, most people have a “grain” memory implant behind their ear, allowing every moment of their lives to be filmed through their own eyes.
Behavoural management

Purposes:
Managing behaviour.
Scoring and profiling.
Home communications.
Exclusions and labels-last-a-lifetime.

Problems:
Emotional management.
Wellbeing undefined.
Points based punishment.
Stigma.

Case Study: Behavioural management

Case Study: Behavioural management

Building a permanent, shared behavioural profile based on opinions
Biometrics: Faces and Fingerprints

Purposes:
Entry
Cashless payments
Resource access:
  Library books
  Lockers and printers
Learning uses growing

Problems:
High importance
Hidden significance
Normalises collection
Safeguarding in Schools

Purposes:
- Filtering
- Blocking
- Monitoring

Problems:
- Conflation of protection and risk
- Countering Violent Extremism: definitions and Scope creep
- Current UK expansion 2-4 years Early Years
- Training and staff capabilities and role extension
- Unknown error rates, success measures
Safeguarding in Schools: Case study

"It’s just the way the world works now. Privacy went out the window in the last five years. We’re a part of that. For the good of society, for protecting kids."

Gaggle CEO, Jeff Patterson. Education Week, May 2019
Parents’ views on safeguarding software

Does the Internet Monitoring software used by the school....

- Log children's Internet search terms and create flags based on keywords? 55%
- Record screen content as created/seen by the child? 25%
- Record children's image through the webcam? 14%
- Don't know 28%

Source: State of Data survey 2018, of 1,004 parents of children in state school in England, carried out by Survation, on behalf of defenddigitalme
AI and personalised learning

Purposes
Classroom management
  Seating plans
  Managing behaviour
  Scoring and profiling and risk and prediction
Home communications
Learning Environments — “Content Management Databases”

Problems:
Emotional management and wellbeing ill-defined and unproven
Stigma
Excessive data collection
How personal is personalised prediction, using “students like you”?
How are products lawfully trained without consent of the child / parent?

Further references:
Dr Selena Nemorin, University College London, Affective capture in digital school spaces and the modulation of student subjectivities. Emotion, Space and Society, 24. pp. 11-18. ISSN 1755-458

Dr Ben Williamson, University of Edinburgh, Centre for Research in Digital Education and the Edinburgh Futures Institute. Big Data in Education, the digital future of learning, policy and practice (Sage) (2017)

Dr Neil Selwyn, Professor in the Faculty of Education, Monash University, Australia
Unexpected special category data

In schools we have also come across:

Libraries systems inferring sexual orientation by labels on the books. Canteen cashless payment systems generating inferred religion. Special Educational Needs data in profiles. Safeguarding in schools web monitoring at home. Hypnosis. RFID student movement tracking at all times on site. Public Health vaccinations carried out in school and linked records without informed understanding.
State challenges

National datasets:
Named since 2002.
Re-use for accountability measures.
23 million+ records in single dataset.
Eyes on economic value and AI training.

Problems:
Government legislative scrutiny is inadequate.
Secondary legislation scope creep.
Routine expansions with statutory basis for collection.
Home Office re-use for ‘Hostile Environment’ immigration enforcement.
One way transparency — Subject Access Requests.
Audit.
Case study: State challenges

Linked data.
Longitudinal data.
Everyday life, throughout a lifetime.
Profiling and Prediction.

Source Report: Cardiff Data Justice Lab Research and, Data Risk Scores as Governance  https://datajusticelab.org/data-scores-as-governance/
Austerity challenges: Case study

Manchester Research & Intelligence Database to identify ‘Troubled Families’


Council system based on an IBM product. How can a child understand that their school records may be contributing to these predictive risk scores and acted on, *out of school*, and what happens if they are wrong?
Case study: Benchmarking

Predictive risk scores are acted on in school as well.
Benchmarking

Purposes:
In-school insights
Similar schools
National re-use

Problems:
Predictive profiling
Automated decision making
“Significant effect”
“Public interest”
As seen on twitter reportedly outside the Department for Education, Great Smith Street, London
"Civitas Learning is one of a number of additional vendors now working closely with us as a result of the event. A leading analytics organisation in the US, Civitas has experience in using advanced analytics, machine learning and data science, through a vendor and solution-agnostic platform that’s integrated with more than 93% of VLEs and 85% of student information systems. It produces multiple institution-specific models, building approximately 30 predictive models per institution to more precisely leverage learning analytics. In the UK Civitas Learning’s work now spans post-1992 universities to Russell Group institutions, and its network currently includes more than 285 institutions campuses reaching more than 6.5 million students across the world.”

source: JISC, January 3, 2017
If you had the opportunity to see your child’s named record from the National Pupil Database, would you choose to see it?

**YES 79%**

Today the Department for Education refuses children and parents the right to see their own record, check it is accurate or have data corrected. defenddigitalme is campaigning to have that changed, and wants the government to respect children's Subject Access Rights and Recital 63 in the General Data Protection Regulation.
Challenges

- Subject Access Requests
- Commercial confidentiality
- State secrecy
- Freedom of Information law
- Regulatory tech capability to understand the products
- Regulatory capacity
- Avoid pay-for-privacy
- Is opt-in really opt-in where there is power imbalance?
What do you want your world to look like in the future?
Political context
Who is in control?

Behavioural Insights and Nudge

Purposes:
Rank and ratings
“Rank and spank”

Problems:
Automated decisions
“Public interest”
Individual autonomy
Who is included?

Education screening based on Big data and Prediction
- Austria — adult education
- UK debate — university access
- Attainment, earnings vs value.

Employment and suitability screening
What are the unintended consequences?

Genetics outweighs teaching. Gove adviser tells his boss

Dominic Cummings' 250-page paper attacks fear of elitism and waste of billions of pounds, and calls for slimmed-down ministry

Education in England is no better than mediocre, and billions of pounds have been wasted on pointless university courses and Sure Start schemes for young children, Michael Gove's special adviser has said in an outspoken private thesis written a few weeks before he is due to step down from his post.

Dominic Cummings, the most influential adviser to the education secretary in the past five years, also argues in a revealing 250-page paper that "real talent" is rare among the nation's teachers - and, eye-catchingly, says
human rights
fairness
equality
social justice
human flourishing
Children’s education should develop each child’s personality, talents and abilities to the full.

[UN Convention of the Rights of the Child]
public good from data, depends on public trust
“the price of innovation does not need to be the erosion of fundamental privacy rights.”

Elizabeth Denham, ICO, 3 July 2017, findings on Google DeepMind and Royal Free Hospital unlawful processing of health data for the company’s product development