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From datafication to data literacy: Recontextualizing everyday educational data in school classrooms

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https://www.jyu.fi/en/research-groups/education-texts-and-technologies

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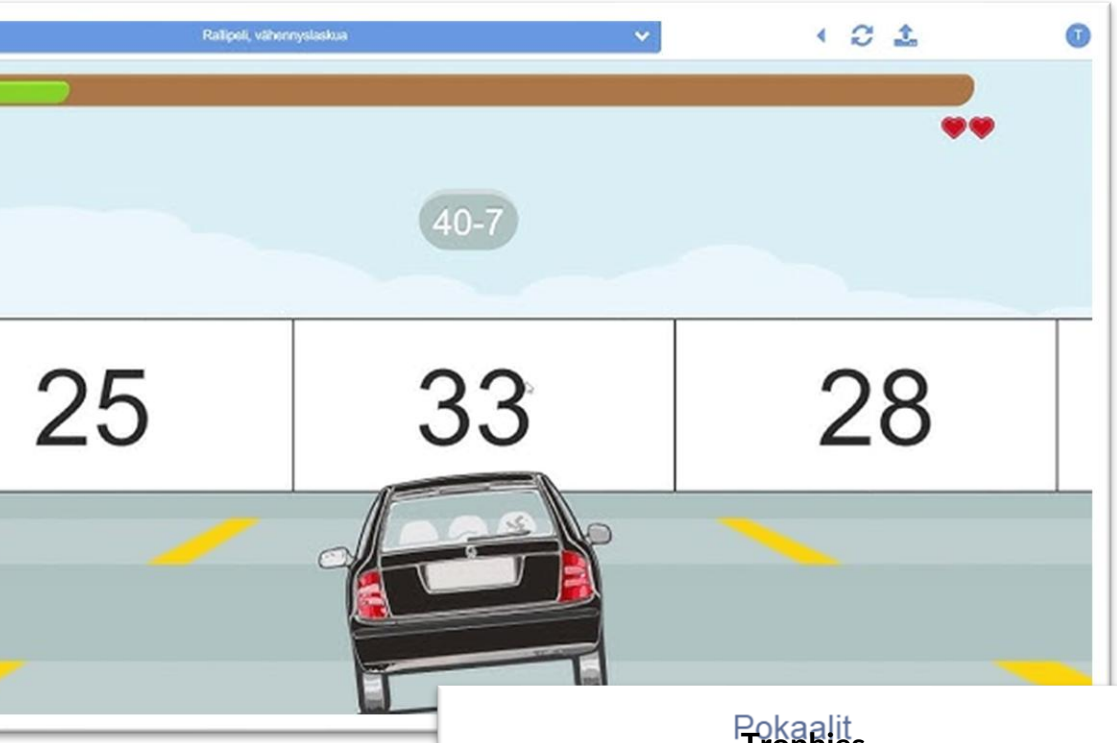
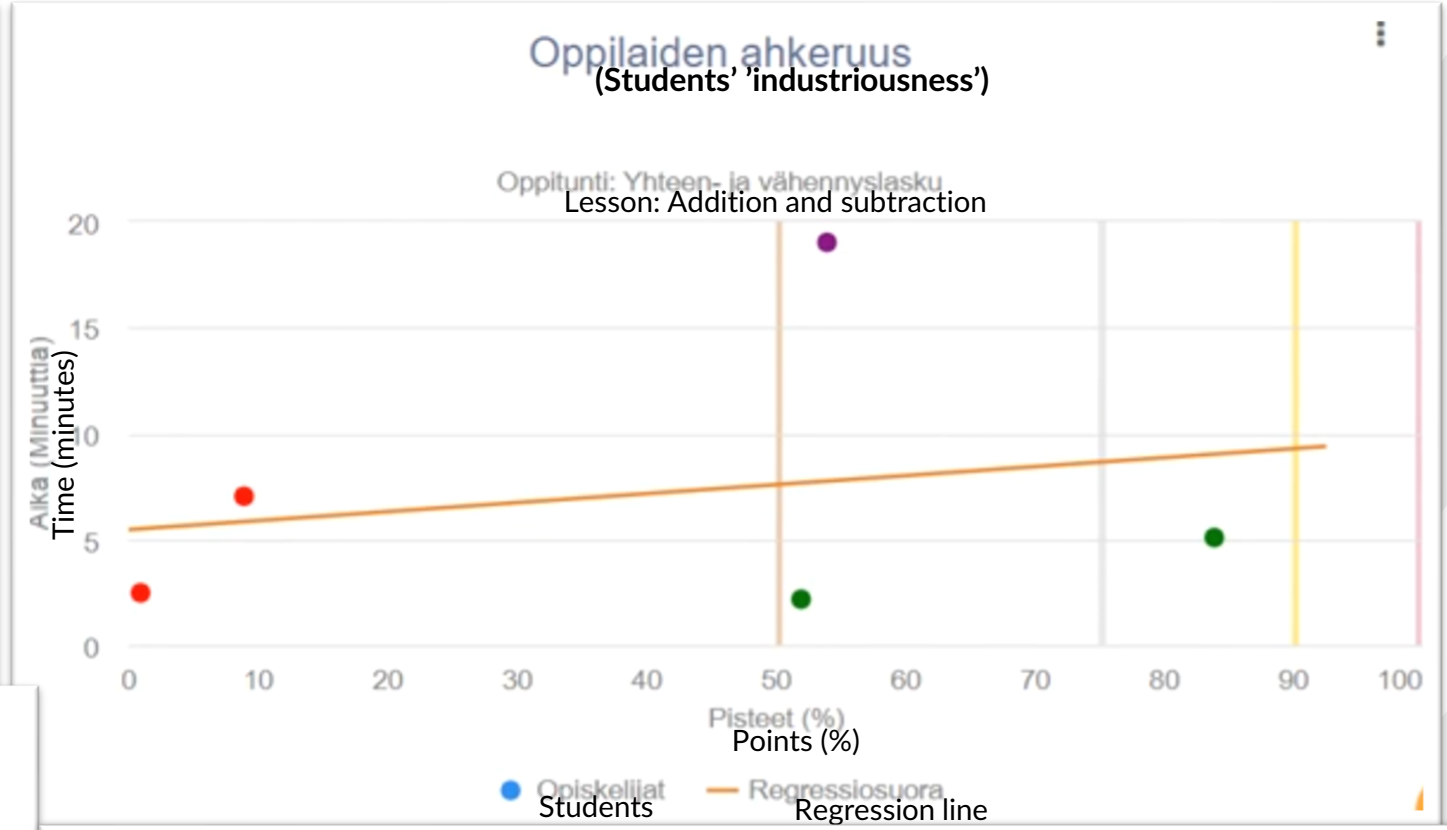
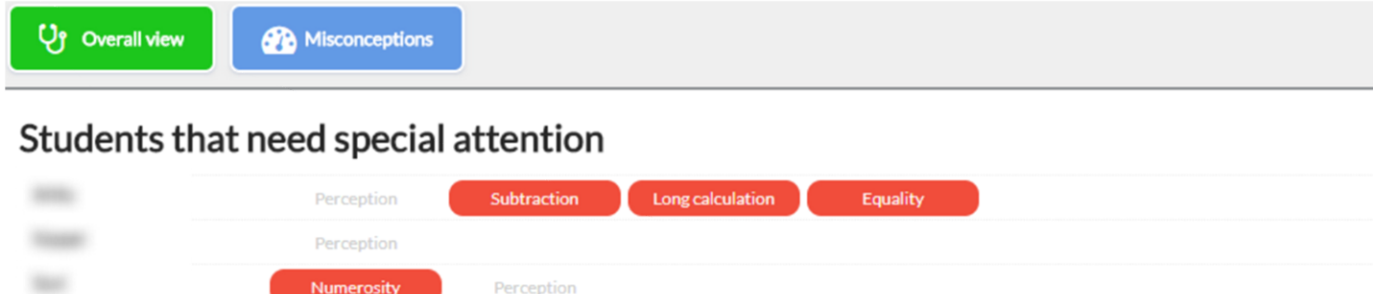
Background and scholarly positioning

The 'datafication' of education

'ViLLE' (learning analytics tool) – activity data from a digital system

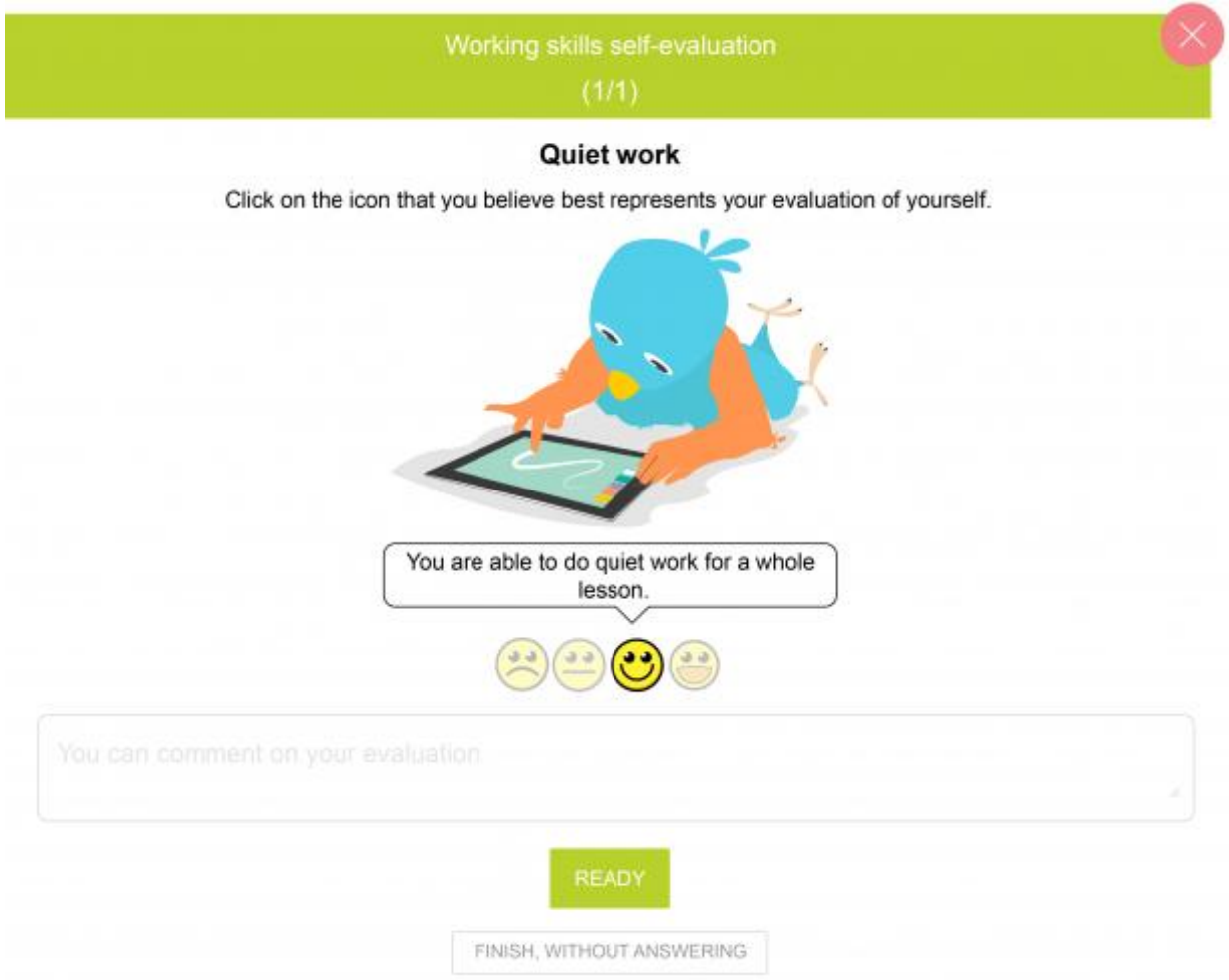






The ’datafication’ of education

‘Qridi’ – self-report data



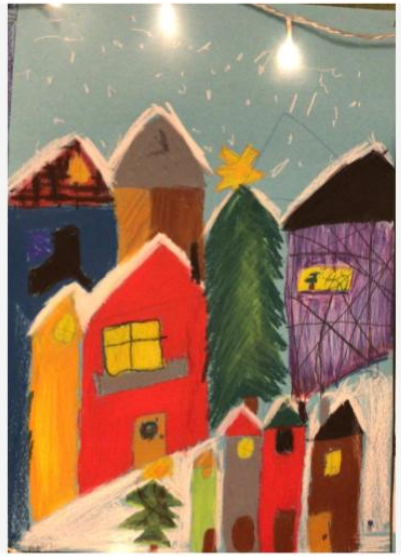
Oppilas: [redacted] 4B 4/6
Student
Päiväkirja: Kuvamataito
Diary: Visual arts

[redacted] 13:29 29.11.2024

[redacted] 13:33 29.11.2024

käytin vaha liituja kuusen värissä lumentekoa katolle

I used wax crayons in spruce green and white to draw snow on the roof



[redacted] 13:33 29.11.2024

[redacted] 09:22 28.01.2025

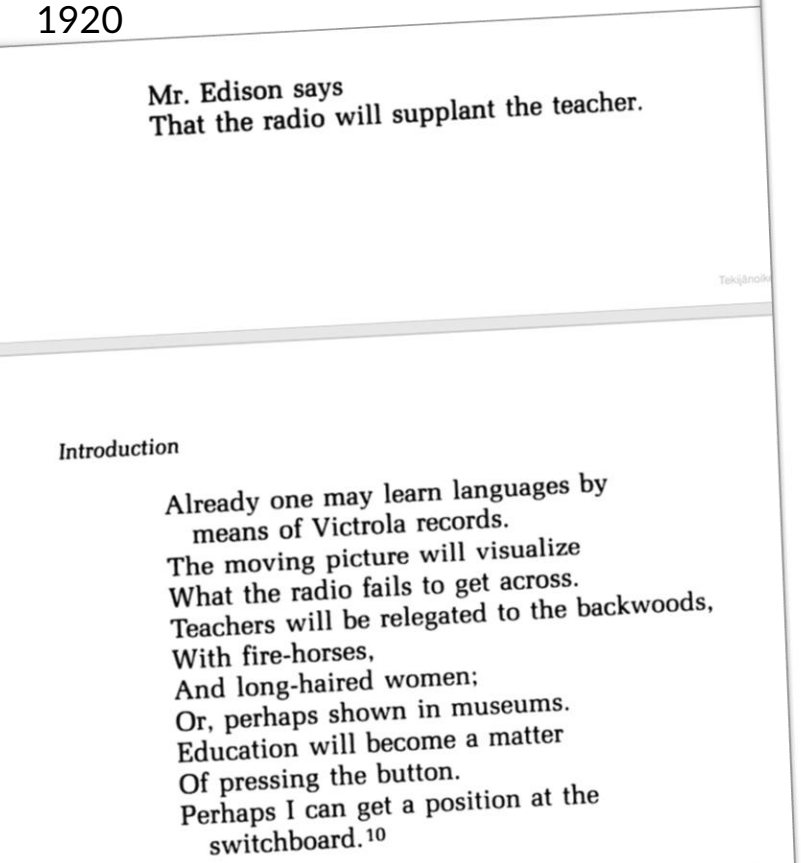
1. käytimme silkki paperi mosaiikkia tekniikkana. 2.onnistuin kynttilän rajoista. 3.jatkossa harjoittelen tulen tekemistä.

1. We used the tissue paper mosaic technique, 2. I succeeded in the candle borders. 3. Next, I'll practice making the flame.

Critical EdTech Studies (CES)
A field in the making

HIGH PROMISES

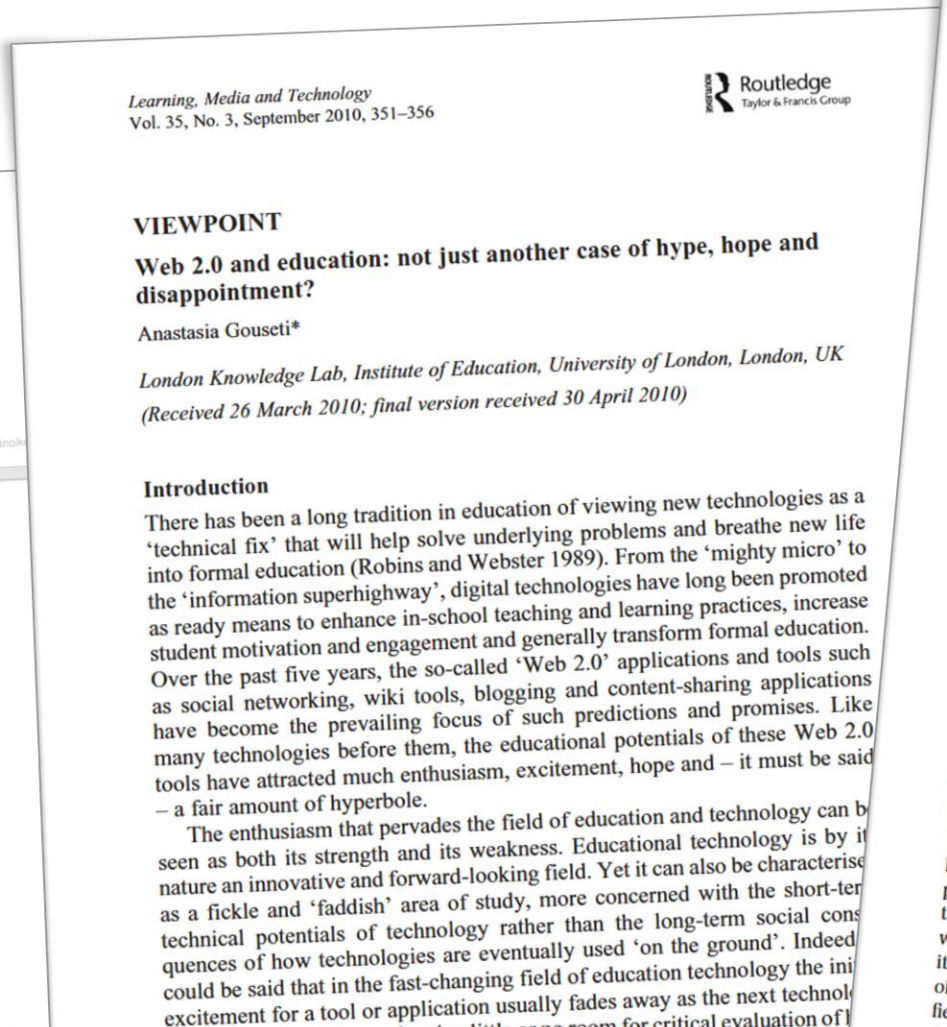
Cuban, L. (1986). Teachers and Machines: The Classroom Use of Technology since 1920



Mr. Edison says
That the radio will supplant the teacher.

Introduction

Already one may learn languages by
means of Victrola records.
The moving picture will visualize
What the radio fails to get across.
Teachers will be relegated to the backwoods,
With fire-horses,
And long-haired women;
Or, perhaps shown in museums.
Education will become a matter
Of pressing the button.
Perhaps I can get a position at the
switchboard.[10]



Learning, Media and Technology
Vol. 35, No. 3, September 2010, 351–356

Routledge
Taylor & Francis Group

VIEWPOINT

Web 2.0 and education: not just another case of hype, hope and disappointment?

Anastasia Gouseti*

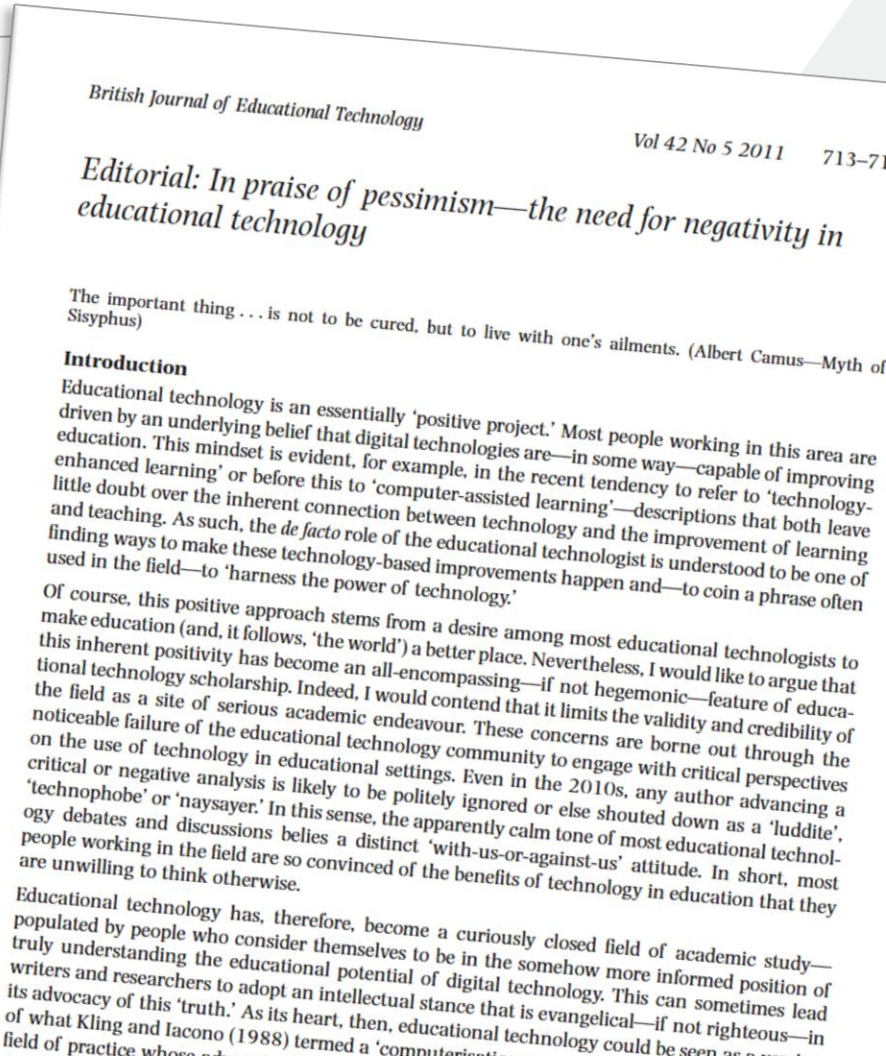
London Knowledge Lab, Institute of Education, University of London, London, UK

(Received 26 March 2010; final version received 30 April 2010)

Introduction

There has been a long tradition in education of viewing new technologies as a 'technical fix' that will help solve underlying problems and breathe new life into formal education (Robins and Webster 1989). From the 'mighty micro' to the 'information superhighway', digital technologies have long been promoted as ready means to enhance in-school teaching and learning practices, increase student motivation and engagement and generally transform formal education. Over the past five years, the so-called 'Web 2.0' applications and tools such as social networking, wiki tools, blogging and content-sharing applications have become the prevailing focus of such predictions and promises. Like many technologies before them, the educational potentials of these Web 2.0 tools have attracted much enthusiasm, excitement, hope and – it must be said – a fair amount of hyperbole.

The enthusiasm that pervades the field of education and technology can b seen as both its strength and its weakness. Educational technology is by i nature an innovative and forward-looking field. Yet it can also be characterise as a fickle and 'faddish' area of study, more concerned with the short-ter technical potentials of technology rather than the long-term social cons quences of how technologies are eventually used 'on the ground'. Indeed could be said that in the fast-changing field of education technology the ini excitement for a tool or application usually fades away as the next technol



British Journal of Educational Technology

Vol 42 No 5 2011 713–71

Editorial: In praise of pessimism—the need for negativity in educational technology

The important thing . . . is not to be cured, but to live with one's ailments. (Albert Camus—Myth of Sisyphus)

Introduction

Educational technology is an essentially 'positive project.' Most people working in this area are driven by an underlying belief that digital technologies are—in some way—capable of improving education. This mindset is evident, for example, in the recent tendency to refer to 'technology-enhanced learning' or before this to 'computer-assisted learning'—descriptions that both leave little doubt over the inherent connection between technology and the improvement of learning and teaching. As such, the *de facto* role of the educational technologist is understood to be one of finding ways to make these technology-based improvements happen and—to coin a phrase often used in the field—to 'harness the power of technology.'

Of course, this positive approach stems from a desire among most educational technologists to make education (and, it follows, 'the world') a better place. Nevertheless, I would like to argue that this inherent positivity has become an all-encompassing—if not hegemonic—feature of educational technology scholarship. Indeed, I would contend that it limits the validity and credibility of the field as a site of serious academic endeavour. These concerns are borne out through the noticeable failure of the educational technology community to engage with critical perspectives on the use of technology in educational settings. Even in the 2010s, any author advancing a critical or negative analysis is likely to be politely ignored or else shouted down as a 'luddite', 'technophobe' or 'naysayer.' In this sense, the apparently calm tone of most educational technology debates and discussions belies a distinct 'with-us-or-against-us' attitude. In short, most people working in the field are so convinced of the benefits of technology in education that they are unwilling to think otherwise.

Educational technology has, therefore, become a curiously closed field of academic study—populated by people who consider themselves to be in the somehow more informed position of truly understanding the educational potential of digital technology. This can sometimes lead writers and researchers to adopt an intellectual stance that is evangelical—if not righteous—in its advocacy of this 'truth.' As its heart, then, educational technology could be seen as a of what Kling and Iacono (1988) termed a 'computer

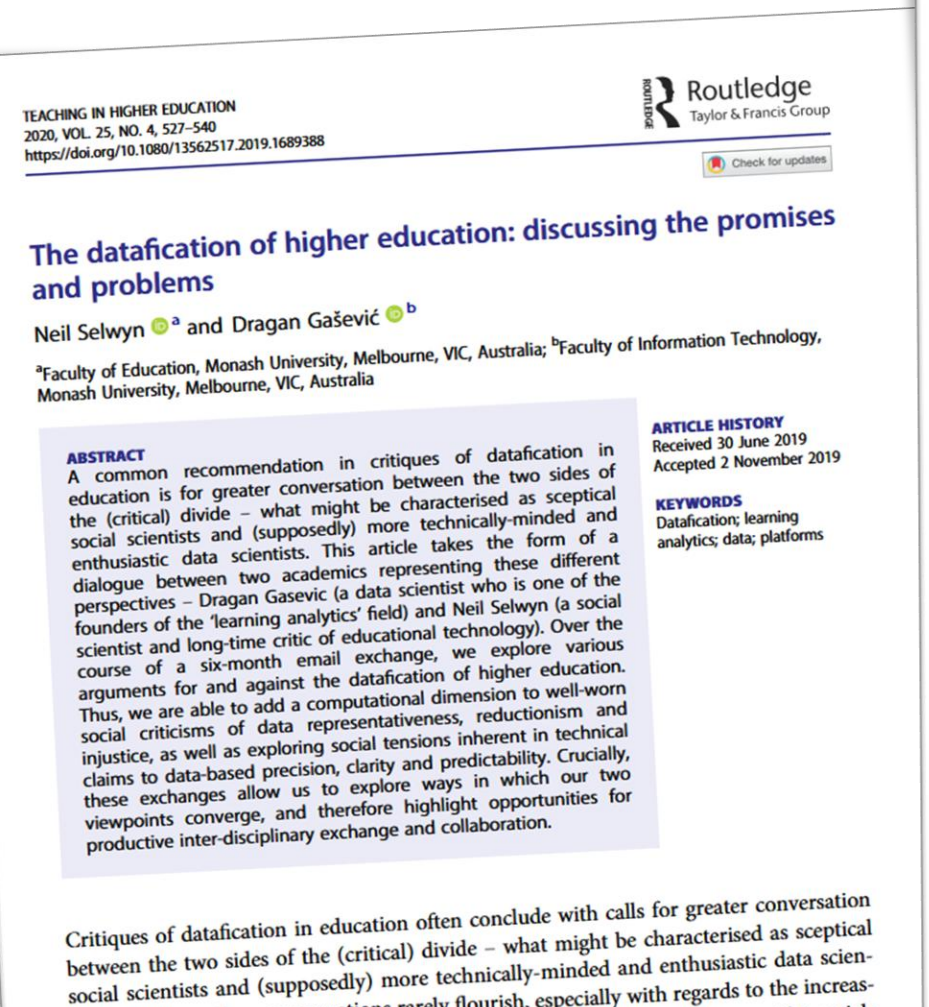
Full sources:

Cuban, L. (1986). Teachers and Machines: The Classroom Use of Technology since 1920.
Gouseti, A. (2010). Web 2.0 and education: Not just another case of hype, hope and disappointment? Learning, Media and Technology, 35(3), 351–356
Selwyn, N. (2011). Editorial: In praise of pessimism—the need for negativity in educational technology. British Journal of Educational Technology, 42(5), 713—718.

Critical EdTech Studies (CES)
A field in the making

UNEXPECTED CONCERNS

Full sources:
Gorur, R. (2016). Seeing like PISA: A cautionary tale about the performativity of international assessments. European Educational Research Journal, 15(5), 598–616.
Lupton, D., & Williamson, B. (2017). The datafied child: The dataveillance of children and implications for their rights. New Media & Society, 19(5), 780–794
Selwyn, N., & Gašević, D. (2020). The datafication of higher education: Discussing the promises and problems. Teaching in Higher Education, 25(4), 527–540.



TEACHING IN HIGHER EDUCATION
2020, VOL. 25, NO. 4, 527–540
https://doi.org/10.1080/13562517.2019.1689388

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Taylor & Francis Group

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The datafication of higher education: discussing the promises and problems

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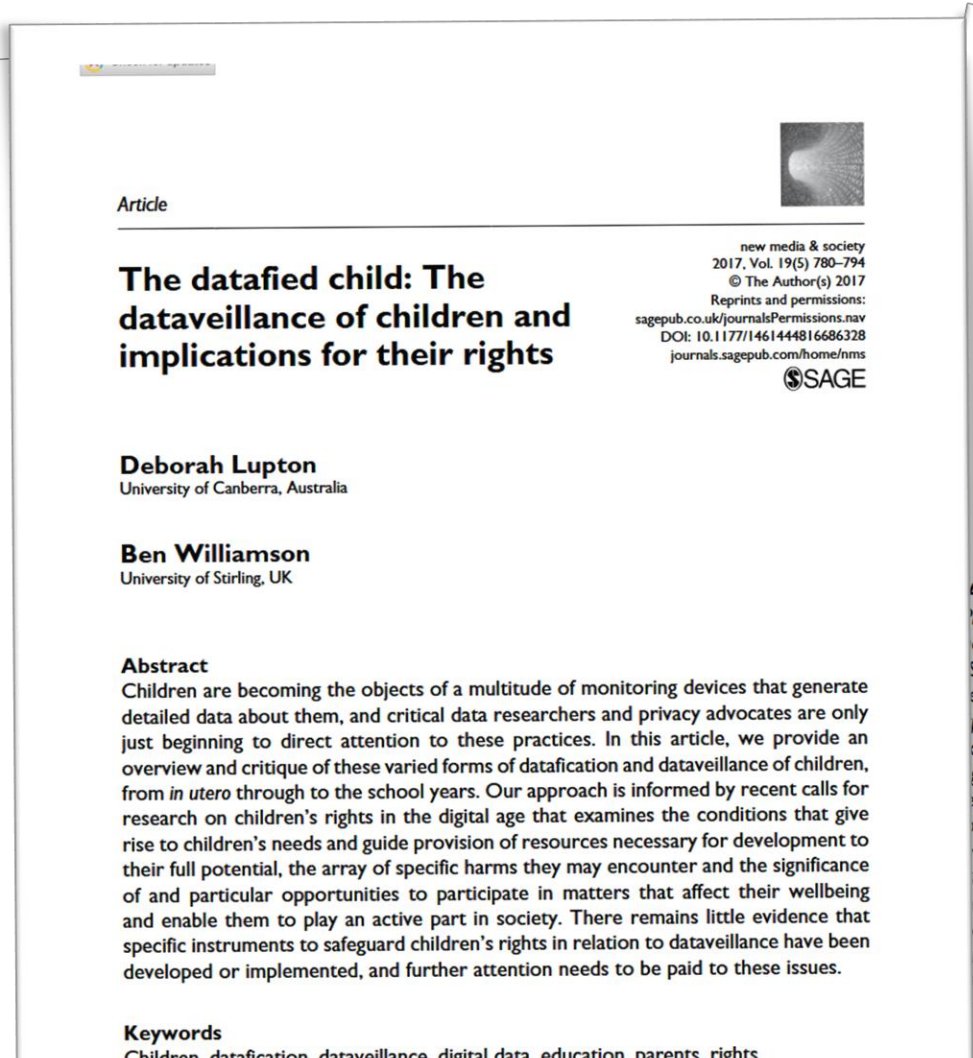
ABSTRACT
A common recommendation in critiques of datafication in education is for greater conversation between the two sides of the (critical) divide – what might be characterised as sceptical social scientists and (supposedly) more technically-minded and enthusiastic data scientists. This article takes the form of a dialogue between two academics representing these different perspectives – Dragan Gasevic (a data scientist who is one of the founders of the 'learning analytics' field) and Neil Selwyn (a social scientist and long-time critic of educational technology). Over the course of a six-month email exchange, we explore various arguments for and against the datafication of higher education. Thus, we are able to add a computational dimension to well-worn social criticisms of data representativeness, reductionism and injustice, as well as exploring social tensions inherent in technical claims to data-based precision, clarity and predictability. Crucially, these exchanges allow us to explore ways in which our two viewpoints converge, and therefore highlight opportunities for productive inter-disciplinary exchange and collaboration.

ARTICLE HISTORY
Received 30 June 2019
Accepted 2 November 2019

KEYWORDS
Datafication; learning analytics; data; platforms

Critiques of datafication in education often conclude with calls for greater conversation between the two sides of the (critical) divide – what might be characterised as sceptical social scientists and (supposedly) more technically-minded and enthusiastic data scien-



Article

new media & society
2017, Vol. 19(5) 780–794

DOI: 10.1177/1461444816686328
journals.sagepub.com/home/nms
SAGE

The datafied child: The dataveillance of children and implications for their rights

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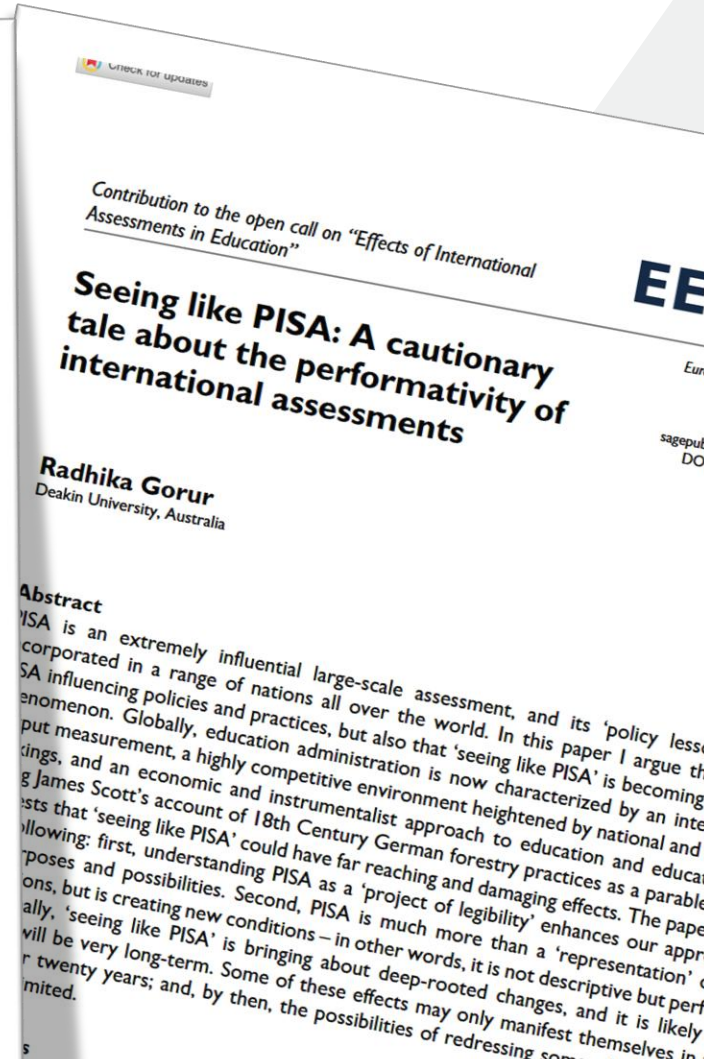
University of Canberra, Australia

Ben Williamson
University of Stirling, UK

Abstract
Children are becoming the objects of a multitude of monitoring devices that generate detailed data about them, and critical data researchers and privacy advocates are only just beginning to direct attention to these practices. In this article, we provide an overview and critique of these varied forms of datafication and dataveillance of children, from *in utero* through to the school years. Our approach is informed by recent calls for research on children's rights in the digital age that examines the conditions that give rise to children's needs and guide provision of resources necessary for development to their full potential, the array of specific harms they may encounter and the significance of and particular opportunities to participate in matters that affect their wellbeing and enable them to play an active part in society. There remains little evidence that specific instruments to safeguard children's rights in relation to dataveillance have been developed or implemented, and further attention needs to be paid to these issues.

Keywords
Children, datafication, dataveillance, digital data, education, parents, rights



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Contribution to the open call on "Effects of International Assessments in Education"

Seeing like PISA: A cautionary tale about the performativity of international assessments

Radhika Gorur
Deakin University, Australia

Abstract
ISA is an extremely influential large-scale assessment, and its 'policy less
corporated in a range of nations all over the world. In this paper I argue th
SA influencing policies and practices, but also that 'seeing like PISA' is becoming
enomenon. Globally, education administration is now characterized by an inte
put measurement, a highly competitive environment heightened by national and
kings, and an economic and instrumentalist approach to education and educa
g James Scott's account of 18th Century German forestry practices as a parable
sts that 'seeing like PISA' could have far reaching and damaging effects. The pape
llowing: first, understanding PISA as a 'project of legibility' enhances our appr
poses and possibilities. Second, PISA is much more than a 'representation'
ons, but is creating new conditions – in other words, it is not descriptive but perf
ally, 'seeing like PISA' is bringing about deep-rooted changes, and it is likely
will be very long-term. Some of these effects may only manifest themselves in
r twenty years; and, by then, the possibilities of redressing
mited.

Critical EdTech Studies (CES)
A field in the making

- CES is taking shape especially through the pursuit for **reparative critique**:
  - "…to assemble, to bring together, to find new ways of living in which more people flourish." (Macgilchrist, 2025)
  - "…foregrounding the generative, world-building potential of critique" (Saari et al., 2026)"

Adapted from Saari et al. (2026):

(1) Expose → (2) Propose → (3) Construct → (4) Sustain

Picture: https://commons.wikimedia.org/wiki/File:Dialogue_Circle.jpg

Macgilchrist, F. (2025). Critical Edtech Studies: What are we doing and where are we going? [Keynote, ECCES 2025, Zürich, Switzerland]

Saari, A., Piattoeva, N., & Brøgger, K. (2026). Introduction: Critical Times? Conditions, Constraints, and Cooptions in Contemporary Educational Critique. Educational Philosophy and Theory, 1–12.

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Research project

MODALITY

MOVEMENT FOR
DATA LITERACY

MODALITY

MOVEMENT FOR DATA LITERACY

WP1

Discourses shaping the datafication of education in Finland

WP2

Unintended lessons taught and learned through everyday data literacy practices in schools

WP3

Pedagogical methods to teach data literacy through the **critical framing of everyday data practices**

WP4

Cross-national comparison focusing on sustainability (an overlooked dimension of data literacy)

WP5

Reconceptualization of data literacy and data literacy education

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Ongoing empirical work in MODALITY

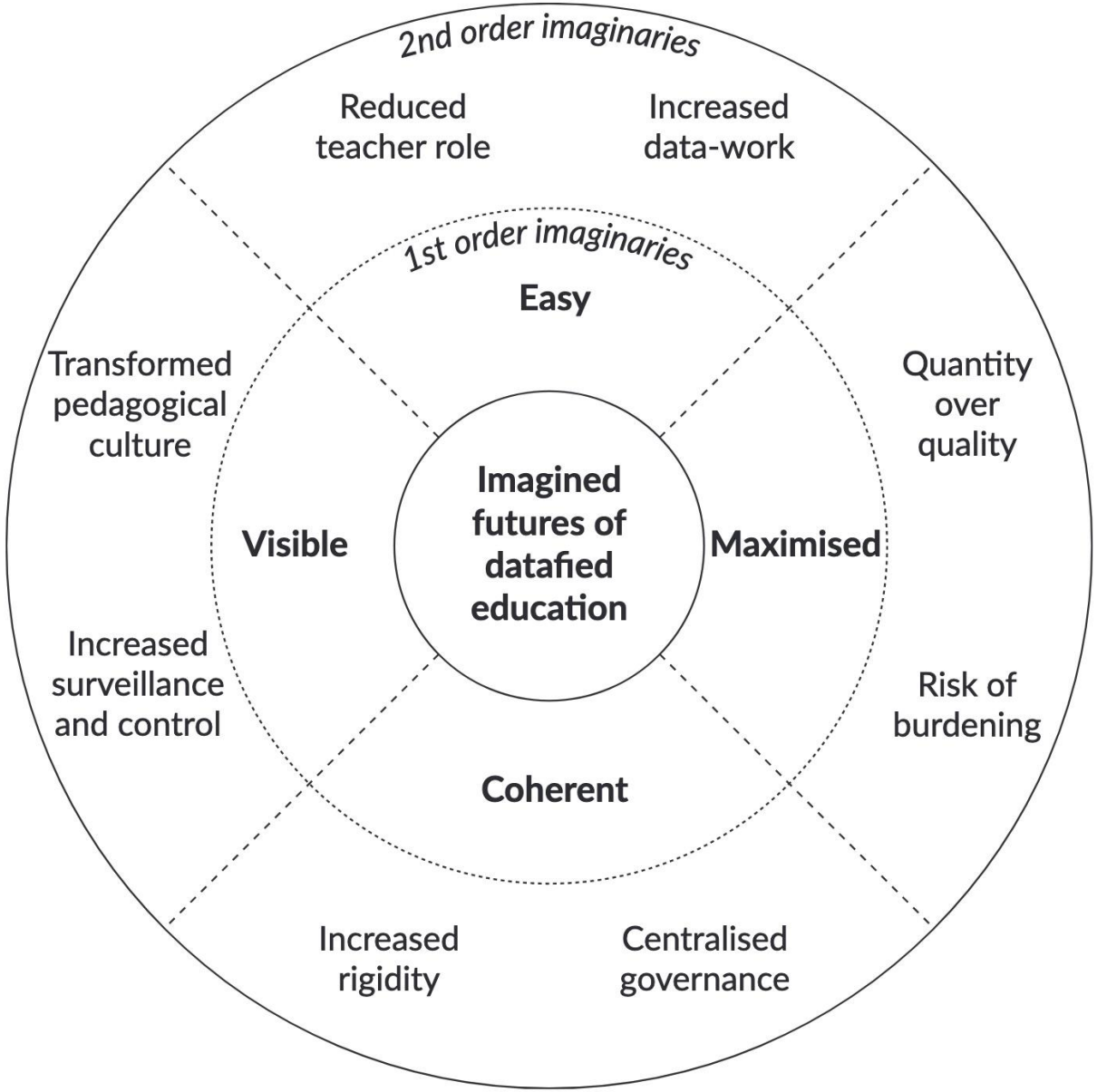
(1) Expose: datafication at the macro-level

- Rather than dictated by formal policies, datafication of education governance actualises through a complex constellation of structures, practices and actors (Wilkins & Mifsud, 2024)
- Key research data on macro-level is formed based on expert interviews
- Conversational semi-structured interviews with 25 purposively sampled experts working on issues related to datafied education on a national level.
  - **policy**,
  - **technology**, and
  - **data justice**, including researchers and professionals working in civil society organisations
- The interviews were conducted remotely via Zoom (n = 21) or face-to-face (n = 4)
- 47-122min interviews resulted in the total length of the data of 31h 18 min (227,427 words).

Andrew W. Wilkins & Denise Mifsud (2024) What is governance? Projects, objects and analytics in education, Journal of Education Policy, 39:3, 349-365, DOI: 10.1080/02680939.2024.2320874

(1) Expose: datafication at the macro-level

- **Utopia:** what the experts would like the future of datafied education to be?
- **Dystopia**: undesirable future?
- **Realism**: the most likely future?



Palsa, L., Fagerlund, J., & Mertala, P. (2025). Exploring the Futures of Datafied Welfare State Education: Thematic Analysis of Sociotechnical Imaginaries. *Social Inclusion*, *13*, 1–21.

(1) Expose: datafication at the macro-level
Easy technology for easy education?

"I believe that modern technology could make the **teacher's job easier** [...] I still see so much that teachers spend time checking word tests and producing teaching material that could probably [...] be produced through technology" (Policy 7).

"The general promises of more efficient activities, resource efficiency and even knowledge management and saving staff time are still quite a lot of promises. On a practical level, **I do not think that we are anywhere near to having fulfilled those promises of technology.** Yes, it is still visible in the everyday life of schools as quite distant in many respects." (Policy 6)

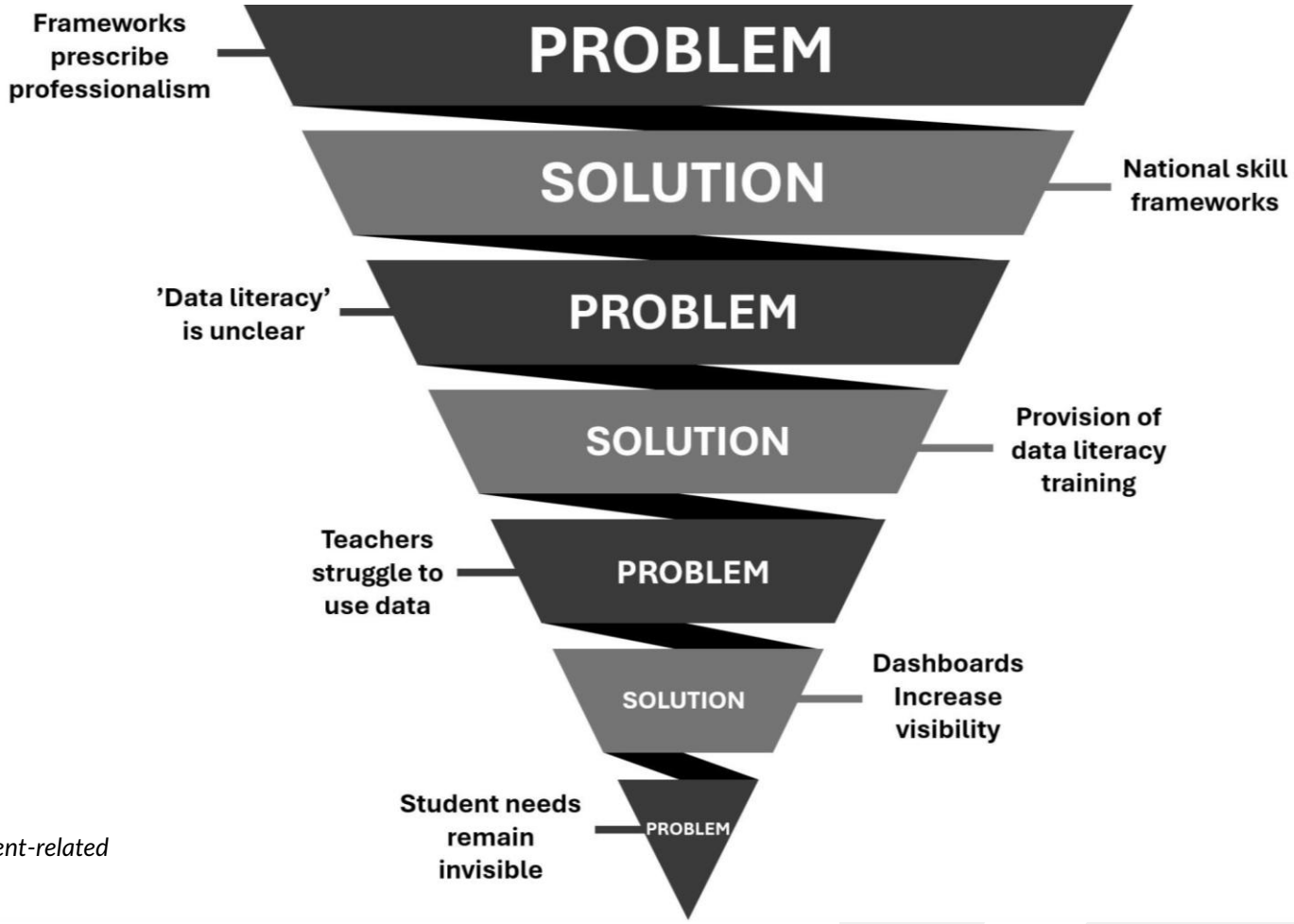
- The **promise of** making education **easier** has become a key justification for adopting data technologies.
  - Often marketed and expected, for example, to reduce workload, streamline processes, and render complex educational phenomena more manageable.
- However, this pursuit of **ease sits uneasily** with the very nature of education itself: shaped by effort, uncertainty, and engagement with difficulty.
- To make education easier, therefore, is not simply to improve it, but to **risk** altering what education is understood to be.

Palsa, L., Fagerlund, J., & Mertala, P. (in preparation). *Easy technology for easy education? Conceptualising ease as a micro-ideology in datafied education.*

(1) Expose: datafication at the macro-level
Datafication as a "wicked solution"

Digital data is often proposed as a way to tackle so-called wicked problems.

However, datafication appears as a "wicked solution" in itself: it promises to address complicated issues while simultaneously **producing new ones.**



Fagerlund, J., Palsa, L., & Mertala, P. (in review). *Datafication as a 'wicked solution': Tracing student-related problematisation in Finnish education policy-relevant discourse*.

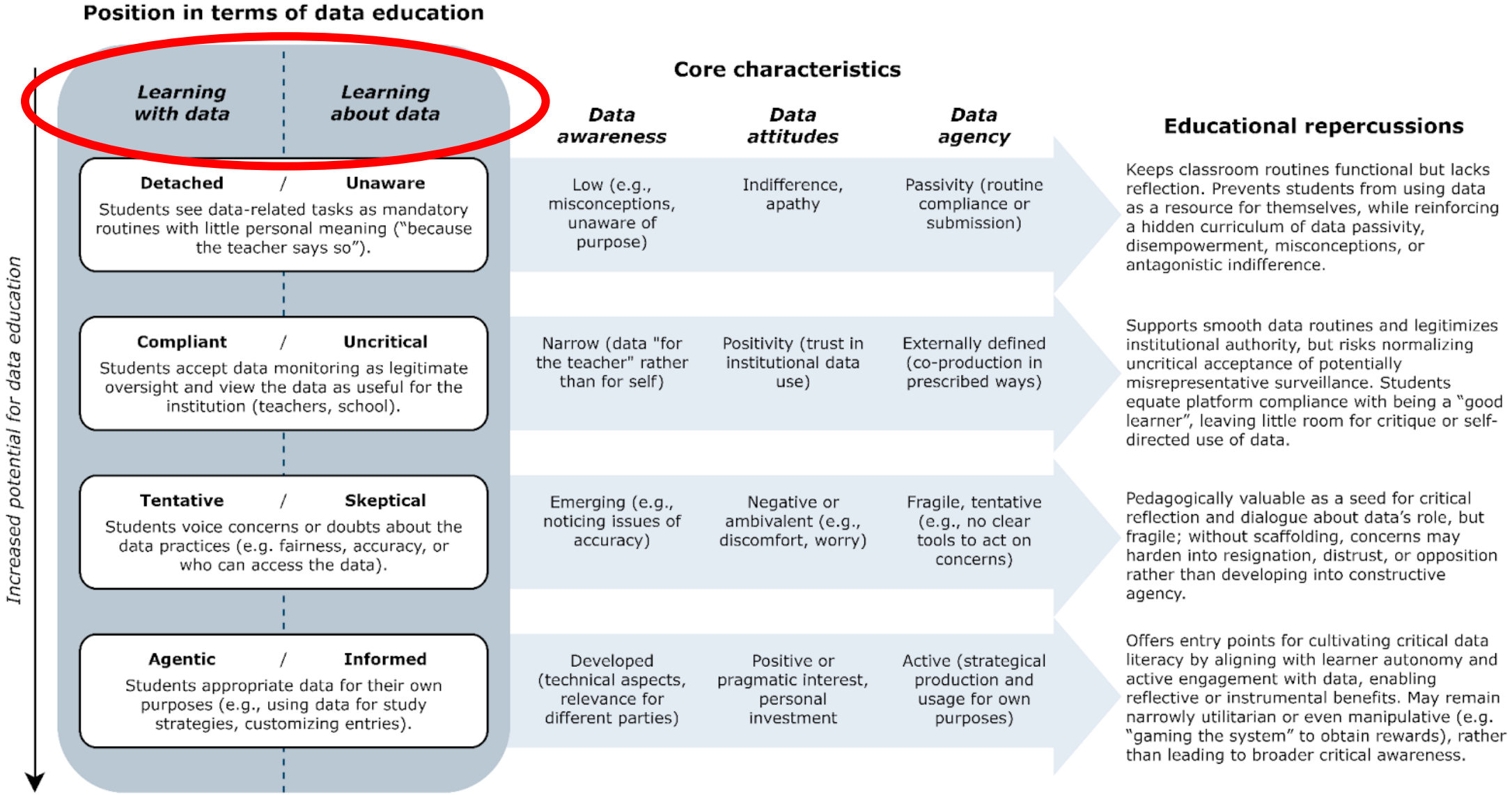
(1) Expose: datafication at the micro-level

- **School ethnography**
  - Three teachers/classes: 4th grade, 5th grade, 8th grade (students *N* = 43)
  - Target: ‘data-rich’ lessons
    - ViLLE (math drilling/analytics)
    - Qridi (surveying and documentation)

- Research data
  - Video/audio documentation (GoPro camera for full-class view + wireless teacher microphones)
  - Researcher presence (note-taking, formal interviews, daily conversations…)
  - Data artefacts (platform logs, written inputs etc.)

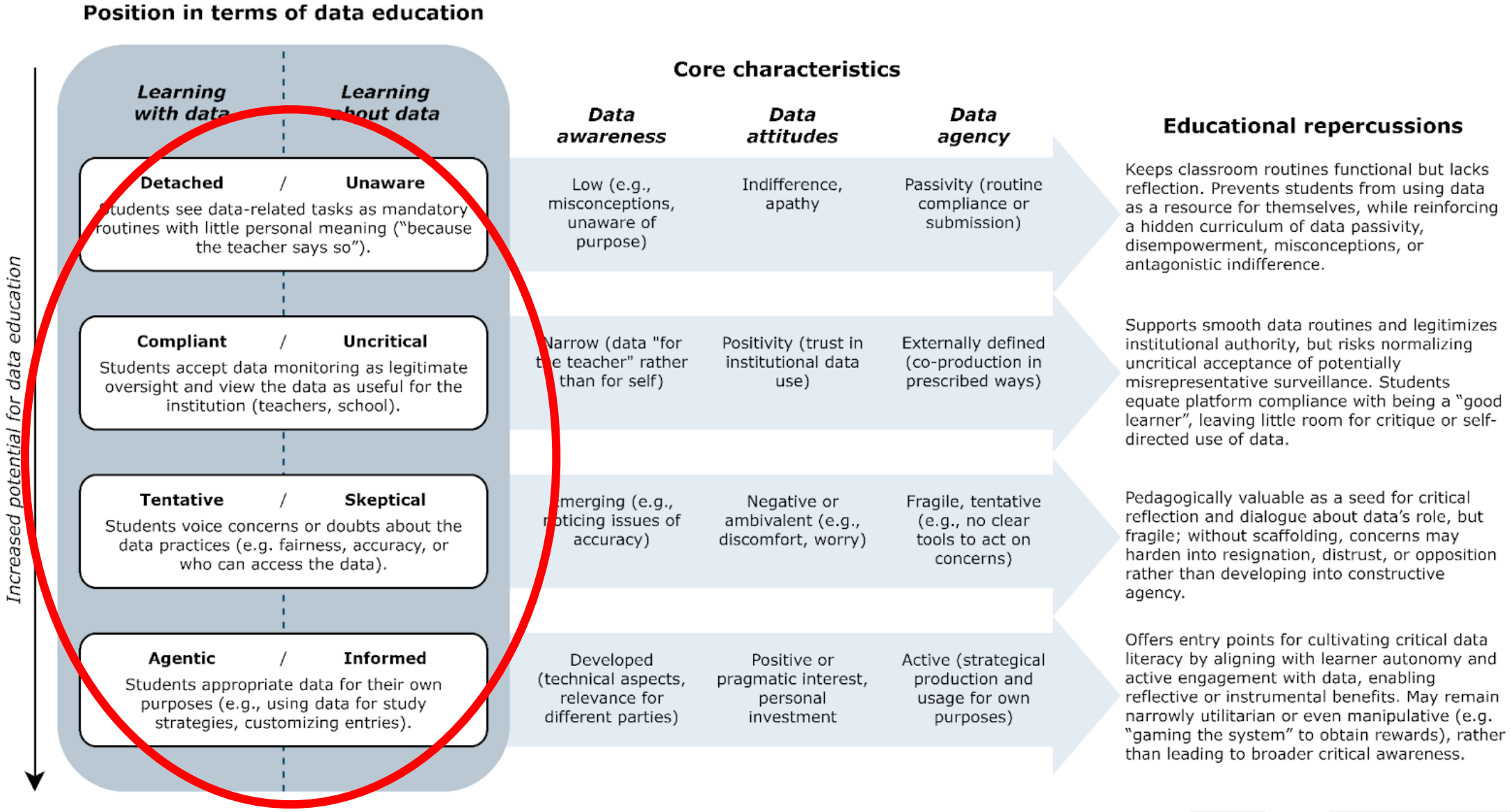
- Autumn 2024: naturalistic observation of classroom use of data technologies
- Spring 2025: co-development of data literacy education methods

(1) Expose: datafication at the micro-level



Fagerlund, J., Palsa, L., & Mertala, P. (in review). Students' positioning in data-driven learning: Data awareness, attitudes, and agency in the classroom.

(1) Expose: datafication at the micro-level



Fagerlund, J., Palsa, L., & Mertala, P. (in review). Students' positioning in data-driven learning: Data awareness, attitudes, and agency in the classroom.

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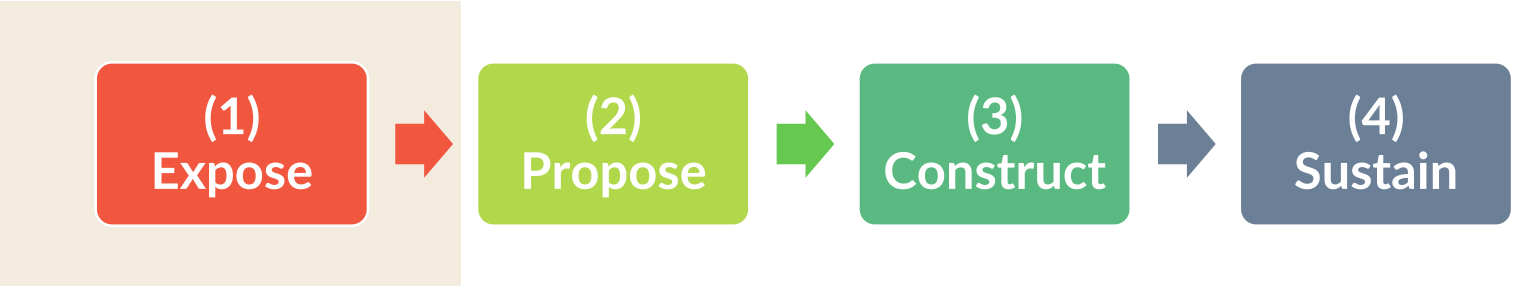
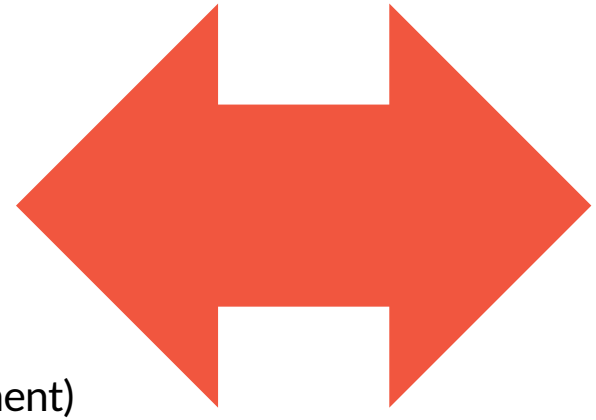
Reflections and future plans

(1) Expose: What's up with datafication?



Datafication creates space for paradoxical relations, including:

- Macro-level (discourses)
- (Apparent) clarity
- Expectations
- Purposefulness
- Problems
- Technological neutrality (instrument)



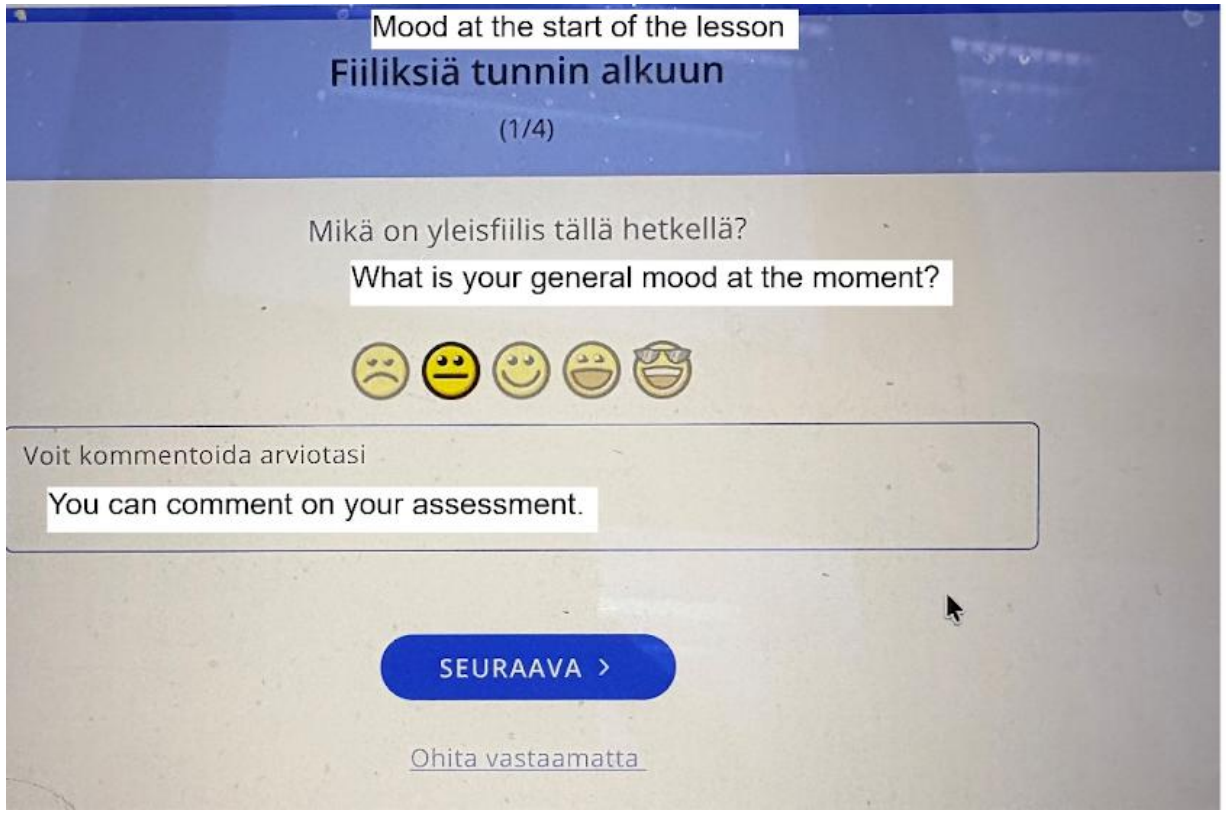
- Micro-level (practices)
- Chaos
- Consequences
- Unexpectedness
- Solutions
- Political aspiration (transform)

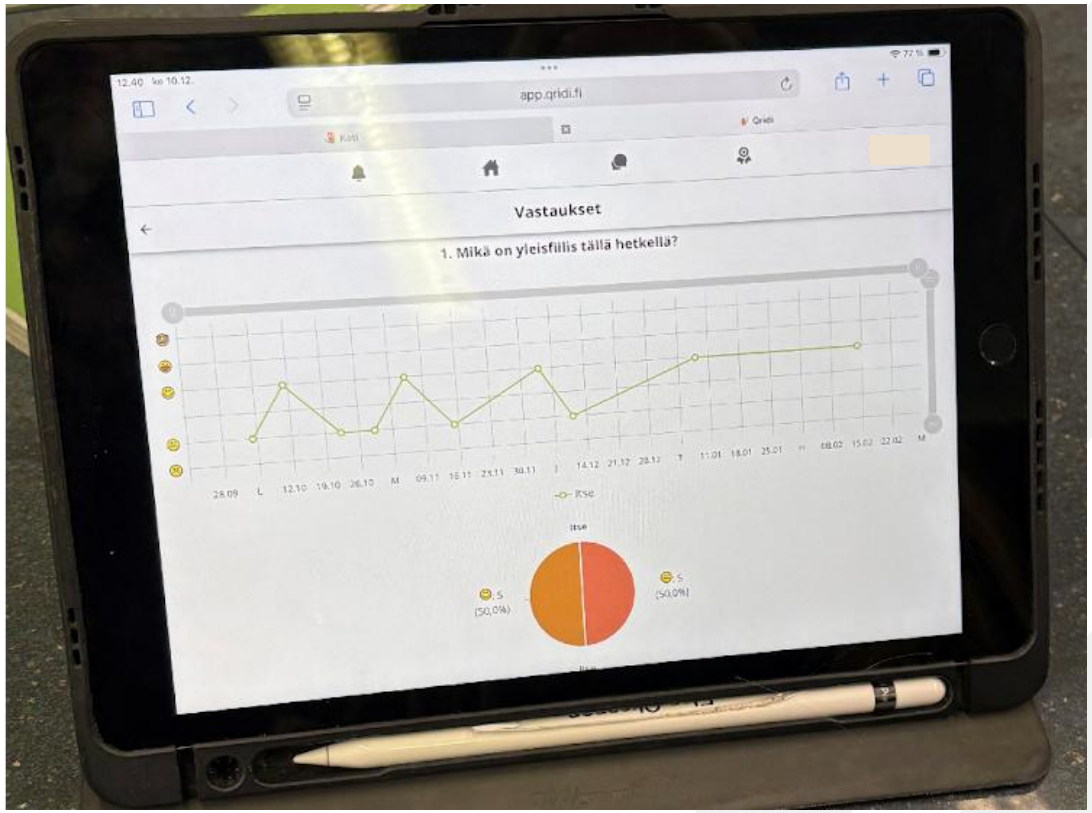
(2) Proposal: Data literacy as a reparative answer?

- Traditional view: literacy as a subject-object relationship in which the subject (i.e., student, teacher) learns to master the object (i.e., data)
  - Dominant in contemporary definitions of teachers' (Palsa et al., in review) and students' (Fagerlund et al., 2025) data literacy
- Alternative view: relational philosophy and "literacy (as-)event"
  - Rather than a prefixed set of individual cognitive abilities, literacy can be approached as an "event" (Burnet & Merchant, 2020) to highlight the fluid and elusive nature of meaning-making. This is based on three propositions:
  - (1) event is generated as people and things come into relation
    - Students learn something about data everytime they use data technologies such as learning analytics in schools
  - (2) what happens always exceeds what can be conceived and perceived; and
    - Such situations can be approached as functional form of data literacy education: deeds with unintentional educational consequences concerning students' relationships with data and datafication. These routines leads to "data (il)literacy" – an uncritical, one-dimensional understanding of data and datafication (Mertala, 2020)
  - (3) implicit in the event are multiple potentialities.
    - Data (il)literacy events can be transformed to (critical) data literacy events through critical framing (Mertala, 2021)

(3) Construction: recontextualized data literacy

- Example from Class 8: the ’Qridi’ tool for mood surveying





Fagerlund, J., Moilanen, H., Palsa, L., & Mertala, P. (in review). From measuring mood to making meaning of data: Developing a classroom approach for data literacy education through researcher-teacher partnership

(3) Construction: recontextualized data literacy

- Data literacy design principles adapted from literature(*):

Validity

- Ensure that items/responses are reliable and commonly understood

Agency/ownership

- Create space for students to question which variables are altogether surveyed (relevant emotions, question phrasing)

Transparency

- Make the data explicit in discussions of why data was collected, how it informed teaching, and how results were interpreted

Cross-contextuality

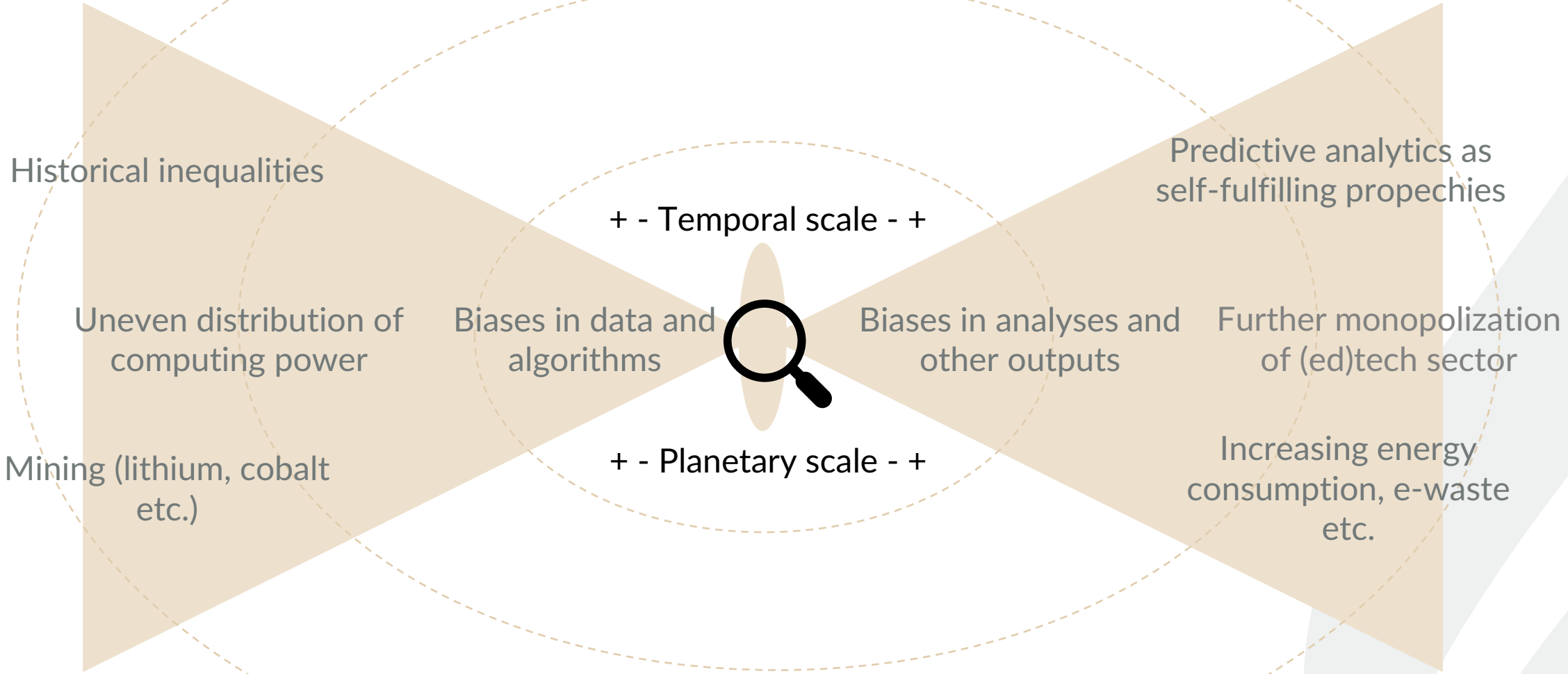
- Prompt a heightened awareness of how data is used, by whom, and for what purposes also beyond classrooms

→ Workshop for students: **participatory redesign of the survey**

*e.g., Fagerlund et al., 2025; Höper & Schulte, 2024; Kahila et al., 2024; Pangrazio & Sefton-Green, 2020; Robertson & Tisdall, 2020; Sander, 2020; Zomer, 2024

Fagerlund, J., Moilanen, H., Palsa, L., & Mertala, P. (in review). From measuring mood to making meaning of data: Developing a classroom approach for data literacy education through researcher-teacher partnership

(4) Sustainment: recontextualized data literacy



Thank you!

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