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## Reimagining and demystifying data: a storytelling approach

Ian Hardy<sup></sup><sup>a</sup>, Louise Phillips<sup></sup><sup>b</sup>, Vicente Reyes<sup></sup><sup>c</sup> and M. Obaidul Hamid<sup></sup><sup>a</sup>

<sup>a</sup>School of Education, The University of Queensland, Brisbane, Australia; <sup>b</sup>Faculty of Education, Southern Cross University, Gold Coast, Bilinga, Australia; <sup>c</sup>School of Education, The University of Nottingham, Nottingham, UK

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关键词 全球化; 数据化; 学业表现; 讲故事; 自传式民族志

**Abstract:** In this article, we contest globalised notions of data as ‘universally’ beneficial, necessary and ‘evidence-based’. We do so by drawing upon narrative accounts of the problematic ways data impact educators researching and working in university and schooling settings over time and in varied national contexts. We reveal how data are transient and often erroneous, even as data appear omnipresent and omnipotent. Employing an auto-ethnographic storytelling approach, we draw upon our diverse experiences as educators working within and across multiple national and subnational contexts – in England, Singapore, Bangladesh and Australia – to reflect on how data have reconstituted and recalibrated our experiences in school and university settings. We seek to break the ‘myth’ of data – that we cannot live without the supposedly complete construction of work and life that dominant, reductive assemblages of data provide. In doing so, we argue for the reimagination and demystification of broader data regimes.

### 摘要

在本文中，我们质疑数据“普遍”有益、必要且“基于证据”这种全球化的观念。通过不同国家高校和学校教育从业者讲述数据长久以来给研究和带来的问题和影响，我们提出这种质疑。尽管数据看似无处不在且无所不能，我们揭示它如何多变并经常出错。我们采用自传式民族志的叙事方法，借助我们作为教育从业者在英格兰、新加坡、孟加拉和澳大利亚等多个国家和地区开展工作的不同经历，反思数据如何重构并规范我们在学校及高校环境中的体验。我们试图打破数据“神话”——脱离数据主导并简化集合提供的所谓工作与生活之完整结构，我们无法生存。基于此，我们主张对更广泛的数据体制重新想象并揭开其神秘面纱。

## Introduction

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In this article, we reflect on our experiences as academics working in varied institutional settings – universities and schools – that are increasingly influenced by data and datafication. Specifically, we seek to make sense of how our work has become increasingly influenced by attention to data, and has undergone what Harvey (1989) referred to earlier as ‘time-space’ compression. Drawing upon our own experiences of new modalities of time and space in school and university settings in very varied national settings (‘north- ern’, ‘eastern’, and ‘southern’ contexts), we take an auto-ethnographic approach to com- prehend more deeply how data are currently construed in educational settings, and how such data recalibrate our work. Our reflections provide insights into the nature of a broader global datascape (Lingard 2021a), revealing the interplay of space, time and relations/sociality, and time-space compression.

Importantly, our stories represent alternative forms of data – data that can contest and challenge more reductive, reified conceptions of performance that do not adequately account for the complexity of actual learning. We begin by reflecting upon the literature on data and datafication processes in institutionalised educational settings, followed by recent theorising into the nature of time and space, and the relations between the two, and associated notions of storytelling. We then present our individual stories as reflections upon data and compressed datafication processes in recent times. We con- clude with insights from an analysis across these stories about our engagement with data in varied places and moments.

### Datafication processes in institutionalised education settings

Notions of data have evolved over time and been conceptualised in varied ways (Kitchin 2014). Data may be conceived of rhetorically (Rosenberg 2013) but they may also be understood ‘as socially constructed, as having materiality, as being ideologically loaded, as a commodity to be traded, as constituting a public good’ (Kitchin 2014, 4). The literature on datafication processes draws upon a variety of perspectives and approaches explaining how data are conceptualised and engaged in educational settings. Such datafication processes have also become increasingly associated with standardisation of practice, often involving elaborate collections of quantified and standardised data in both school (Hardy 2021) and university settings (Williamson, Bayne, and Shay 2020).

Much has been written about the nature of data and datafication processes in school- ing settings in western settings. Takayama and Lingard (2018) argue there is a need to understand datafication in schooling beyond Anglo-American perspectives; what is hap- pening in western contexts is not reflective of what is occurring in other settings. At the same time, these datafication processes are also made possible through various data infrastructures (Sellar 2019), which are increasingly interconnected with private industries and organisations that form part of a larger matrix of public-private partnerships; in this way, commercialisation is increasingly

embedded within public/government schooling today (Hogan and Thompson 2021).

Datafication processes are also evident in the higher education space. Universities have become increasingly dominated by neoliberal logics, manifested in often unreflective and conservative leadership practices, including competing for publications and metric profiles to bolster national and international standings. Smyth (2017) captures this well in his aptly titled *The toxic university: Zombie leadership, academic rockstars and neoliberal ideology*. Relatedly, Williamson, Bayne, and Shay (2020) refer to the datafication of university teaching to capture ways in which various kinds of Artificial Intelligence (AI) technologies, data analytic approaches and various kinds of 'big data' have influenced practice and been taken up in Higher Education (HE) institutions. Such technologies have been used in a similar vein in schooling to instill new forms of surveillance and enhance and intensify performance management and governance processes (Castaneda and Selwyn 2018).

Literature on datafication also problematises the decontextualization of education and the push towards the quantification and metrification of education. In relation to PISA, the use of test scores to identify effective school governance tools (such as strengthening school management and increasing accountability) has been critiqued (Münch and Wiczorek 2023). Xiaomin and Auld (2020) problematise PISA for Development and the Learning Framework 2030 as part of the expansionist work of the OECD, particularly in the context of increased push for SDGs (Sustainability Development Goals). In relation to PISA for Schools, the 'flat ontology' of PISA 'bypasses' the specific local contexts in which schools are embedded and 'decouples' them from their national and subnational contexts, instead foregrounding international comparisons of schooling performance (Lewis and Lingard 2022).

While such literature provides important insights into the nature of educational processes in institutionalised settings, there is insufficient attention to how such data are expressed through space and over time. There is also inadequate attention to educators' felt experiences of engagement with data in these varied spaces and moments.

## Journeys through space and time

Datafication processes operate in both physical and virtual spaces, with the latter understood as characterised by more topological relations. That is, there is a new spatio-temporal ordering of society in which various expressions of movement are not tied to traditional Euclidean notions of space but are instead understood as based on relationships between those involved. Indeed, 'movement – as the ordering of continuity – composes the forms of social and cultural life themselves' (6). Lury, Parisi and Terranova (2012) argue that culture itself is becoming topological. Such processes entail a whole range of indices and algorithms recalibrating how work and life are enacted and the ways these are constituted. They also entail real-time, continuous data surveillance and collection, oriented towards an ascribed future.

To understand the nature and complexity of spatial relations, we draw upon Appadurai's (1996) work, highlighting the cultural elements of globalisation. Appadurai (1990) spoke about the rise of a 'new global cultural economy' that has led

to increased world- wide interconnectedness entailing the increased prevalence of various global cultural flows or 'scapes' (295). The five dimensions of cultural flows to which Appadurai refers are: 'ideoscapes' (various ideas, symbols, stories), 'mediascapes' (images), 'technoscapes' (technological innovations), 'ethnoscapes' (people) and 'financescapes' (money). He asserted that these scapes allow 'us to point to the fluid, irregular shapes of these land- scapes' (Appadurai 1990, 297), which thus becomes a useful heuristic for making sense of these global flows. In the first quarter of the twenty-first Century and in the midst of a global pandemic, the widespread use of technology has also led to the ubiquity of data flows and an increasing global phenomenon of what has been described, inspired by Appadurai, as 'datascapes' (Lingard 2021a), particularly in education.

Such datascapes reflect a time and space compression that has become increasingly more fluid and dynamic as technological infrastructures have become more advanced. We would also argue such datascapes could be 'real', tangible, imagined (cf. Anderson 1983/2016), virtual, felt or 'affective' spaces' (Beer 2016). Such datascapes also present as something of an 'imaginaire' (Appadurai 1996), characterised by a sense of something significant but that may also be largely illusory, even as their effects may be viscerally felt. At the same time, space is also temporal in orientation and reflects processes of compression and acceleration (Lewis and Hartong 2021). This focus on time is reflective of Lingard's (2021b) exhortation to examine multiple temporalities within critical policy sociology in education today. Namely, this entails attention to the changing spatio-temporalities and timespaces of policy as they unfold within a broader global context. Lingard (2021b) argues that globalisation not only challenges the methodological nationalism characteristic of research in many educational settings but that it also reconstitutes and 'recalibrates' notions of time in ways that intersect and interleave with the multiple geographies and scales of educational policy and practice.

Arguably, this also entails more traditional processes of 'accelerationism' that have come to characterise and dominate our engagement with time, including in education (Sellar and Cole 2017). This is expressed and enhanced by what Brynjolfsson and McAfee (2014) describe as the 'second machine age' describing rapid technological growth and innovation, particularly in computing power. Buddeberg and Hornberg (2017) refer to 'schooling in times of acceleration' to capture how the 'speeding up' of time can be expressed through how schools are managed, how results are used to market schools, and how there is an ever-increasing focus upon performance in schools; these processes are enabled by data generated and expressed locally, nationally and internationally, and the narrowing of the data of most value as related to literacy, mathematics and science. Again, such acceleration resonates with Harvey's (1989) earlier notion of 'time-space' compression, although of a qualitatively different kind under current conditions.

This accelerationism is also influenced by more topological 'information-centric' approaches to educational provision (Sellar and Gulson 2019). Various kinds of machine learning and algorithmic technologies have the potential to disrupt more traditional conceptions of time and space and flag more indeterminate modes of working and to bring into being more information-centric approaches to decision-

making (Sellar and Gulson 2019). The introduction of such technologies also reflects what Leaton Gray (2017) refers to as the social construction of time – how time is recalibrated by technological innovations into something of a ‘hot’ chronology.

These relationships between time and space are intimately interconnected. As Lingard (2021b) argues, ‘[s]pace and the temporal are closely related, imbricated with each other; there is a significant temporal element to mobility; movement and mobility are productive of both time and space’ (5). However, we would argue that it is through our own experiences of this overlap between the temporal and the spatial that we can better understand what is occurring in educational settings in relation to myriad forms of data, including how there is simultaneously a ‘speeding up’ of time alongside an increased ‘compression’ of space. There is also an accompanying topological surveillance culture that encourages collection and engagement with more standardised expressions of data.

### Auto-ethnographic storytelling

To make sense of these experiences with data as influenced by such spatial and temporal processes, we draw upon notions of storytelling. We analyse our personal (auto) experiences to understand the cultural – place, time, and social – experience (ethno) of educational performance data as an instance of auto-ethnographic storied research (Ellis 2004). We purposefully express our personal experiences as a stimulus to challenge sanctioned ways of doing research and representing others (e.g. see Spry 2001). In this way, our stories represent forms of ‘data’ beyond more dominant accounts.

Such a standpoint recognises research as a political, socially-conscious act (Adams and Stacey Holman Jones 2008), and necessitates that we foreground our positionalities and values (Bochner 1994). We work with stories as we recognise stories offer rich detailed ways of thinking and feeling about ‘complex, constitutive, meaningful phenomena’ (Ellis, Adams, and Bochner 2011, 2). The stories we share are affective moments that catalysed our inquiries into educational performance data usage and how data were deployed in school and university settings more broadly. We analyse these stories within datascares as real, tangible, imagined, virtual, felt or ‘affective’ spaces in which performance data play out.

We open our stories by locating ourselves – who we each are within the scapes of data, research and institutionalised education. Locating ourselves in this work, following Phillips and Bunda (2018) propositions for storytelling, we declare our research positionally so that readers know what position we each bring to understanding education performance data. We locate ourselves in terms of heritage, education traditions and place of work. In storytelling, people, places and time are alive.

Such an approach is also in keeping with Clandinin and Michael Connelly’s (2000) standpoint that narrative inquiry involves ‘collaboration between researcher and participants, over time, in a place or series of places, and in social interaction with milieus’ (Clandinin and Michael Connelly 2000, 20). It focuses on ‘stories lived and told’ (20) within these environments/milieus, and which are characterised

by certain ‘commonplaces’ of temporality, sociality and place as dimensions of an inquiry space. Such ‘commonplaces’ reflect our attention to the present as always imbued with a history and projection into the future, of the interplay between the personal and the social in context, and of events unfolding in particular, but also potentially multiple places, at the same time. Just as the interaction between time and space matters, so too does the interplay between temporality, sociality and place to understand participants’ stories.

These stories also give cogency to aspects of affect that are not always adequately acknowledged or represented in accounts of educational practice and polycsapes more broadly (cf. Carney and Madsen 2021). Irving Epstein’s (2019) volume on affect theory and discourses of comparative education seeks to capture the intensity of encounters, power of assemblages, meaning-making, and contingency that characterise the human condition, influenced as it is by more globally constituted and commodified contingencies and cultural objects. Carney’s work on polycsapes (Carney and Madsen 2021), and his series (with Irving Epstein and Daniel Friedrich; Bloomsbury Academic) on ‘New directions in comparative and international education’, place much greater value on emotions, well-being and affect; these are aspects of the human condition that are deeply embedded in the stories and narratives that characterise personal accounts of practice.

## Storytelling through time and space: data, research and institutionalised education

We first present our individual stories, followed by our collective reflections on processes and practices of data across these stories. To understand such journeys ‘on the ground’, we draw upon our own experiences of having engaged with myriad forms of data in our workplaces – universities – and in the schools and schooling settings in which much of our research work has been undertaken. Our individual experiences of engagement with data are followed by a synthesis across these stories to show what we can learn collectively from these experiences.

These stories include accounts about ‘data-driven’ decision-making to help identify potential students to attend universities and to finalise A/GCE levels during COVID-19 in England (Vicente’s story), and school-leaving results in Bangladesh (Obaid’s story). They also relate to the dominance of national test and associated data in Australia (Ian’s and Louise’s stories), as well as how standardised school test results and the fear of failure (‘kiasuism’) in Singapore affect students’ learning beyond their school years (Louise’s story).

### *Vicente’s story: data-driven decision making in the UK*

As an academic now based in the UK, raised in the Philippines, educated in Singapore and having worked in Singapore, Spain and in Australia, I see myself constantly navigating educational landscapes. Frequently, these landscapes present as

datascape, reflected in my efforts to try to trace the flows of data in schools and universities that often appear as rhizomatic, tangled links without a 'centre' (Deleuze and Guattari 1988), and by my attempts to ethically ground my sense-making in relation to datafied practices; I ask: who is advantaged, who is disadvantaged by the ways data are constituted, pre-sented and understood? The global interconnectedness and flows of data that constitute education datascape are demonstrated quite clearly in the education sector in the UK – both in Higher Education Institutions (HEIs) as well as in the compulsory key stages (schools).

Data associated with how HEIs engage with international students are a key concern of mine. HEIs regularly consult the UK Council of International Student Affairs (UKCISA), the national advisory body that provides information to international students and universities regarding study opportunities. Apart from the UKCISA, UK universities are also guided by the Department for Education (DfE) regarding vital policies (e.g. UK Visa Guidelines) about student admissions. In turn, DfE pursues a data-driven decision-making model, drawing upon the resources of a UK private company, Quacquarelli Symonds (QS) – particularly results from its annual International Student Survey (ISS) (which was originally created by a private Japanese educational conglomerate (Mitsui & Co)). HEIs in the UK also maintain active linkages with the UK Education Advisory Services (UKEAS), a private company created in Taiwan in the 1990s, and now spread across 30 countries worldwide; this company frequently undertakes data mining to identify prospective HEIs for students, and in turn provides data processing services to these students for entry into UK HEIs. In this context, during reflective conversations with academic colleagues, one question surfaces quite often: What is happening to Higher Education in the era of big data? Or, more pointedly, how are private educational corporations and government agencies, preoccupied with economic gain and political soft power, (mis)using data to influence education provision in HEIs?

The data associated with the intersection between schools and further education is also an important issue for me. In the midst of the COVID-19 pandemic, and with the cancellation of the national 2020 GCE/A level national examinations<sup>1</sup>, the DfE decided to implement a standardised predictive examination system that led to a highly embarrassing public policy reversal. The UK's Office of Qualifications (Ofqual), guided by a directorate and advisory board predominantly composed of senior academics from UK HEIs, took on the task of creating a data-informed examination system. (Interestingly, these senior academics' remit more broadly is to regulate an enormous export market of educational credentials in the UK; 4.89 million certificates were issued worldwide in 2020 (Barcham 2021)). Ofqual incorporated historical examination performance of a school (as opposed to students' individual performance), as well as class sizes, as components of a controversial algorithm to compute students' scores as a replacement for the GCE/A levels. The use of the algorithm placed selective private schools (which have historically better performance and relatively smaller class sizes) at an advantage over government schools (Wakefield 2020). As an active researcher working with UK schools, this recent fiasco has led to difficult conversations with school practitioners: How should data-driven, evidence-informed decisions be undertaken? Should the nature of data be focused on the

'solutions' it provides regardless of possible social consequences? Or should data be used to arrive at a more shared, common good? In this education data-scapescape, I find it necessary to map the global cultural flows of data and to identify moments where education is reconfigured and reshaped, and how those 'constituted' by data may be differentially advantaged and disadvantaged.

### *Obaid's story: data inflation and the auto-pass system in Bangladesh*

My story starts in the national space of Bangladesh where I was born, educated and taught in the higher education sector. I have also researched English language education policy and practice in Bangladesh externally, while studying and working at an Australian university, where I have since been located for nearly 15 years. Traditionally, data have been associated with meritocracy in this low-income but aspiring to be middle-income, society where education is given high social value. Academic achievement is widely perceived as having the capacity to disrupt the cycle of poverty and ensure social mobility/ reproduction at the individual and societal level. Students' performances on national standardised tests have been the main form and source of data. Reporting these data in print and electronic media has resulted in considerable social valuing and respect for such data, with these reporting events celebrated as social rituals (Ali, Hamid, and Hardy 2020). Although a more holistic view of learning is not ignored, standardised numerical data serve as the key indicator of quality of learning, teaching, and educational institutions.

School practices are commonly geared towards improving student performance on annual standardised examinations. Many schools often run special coaching for Year 10 students immediately before school-leaving examinations. 'Shadow education' (tutoring) is also prevalent, and is driven by promises of helping students to improve performance on the tests.

Since the current government came to power in controversial circumstances in 2009, civic attention has been diverted away from questions of democracy. The government promised higher levels of 'development' in all sectors, including education. Accordingly, a discursive spin was introduced to highlight the government's achievements. For education, this meant achieving higher success rates in standardised tests; the easiest way of achieving this was via 'data engineering'. A comparison of the secondary school certificate examinations between the first five years of the new century, and since the current government took office, shows that pass rates have almost doubled. While previously the pass rates were below 50%, since 2010, they have been close to 80% every year, skyrocketing to almost 93% in 2014. Data inflation has become a key feature of education and datafication in the past decade.

The production and management of education data during the COVID-19 pandemic led to further, dramatic data inflation. As schools closed in March 2020 (re-opening in September, 2021), the education boards in the country were unable to arrange the Year 12 Higher Secondary Certificate (HSC) school-leaving examination for the 1.3 million students in general, religious and vocational streams of education.



Like the Education Department of the UK Government in Vicente's story, education authorities in Bangladesh had to produce student performance data without arranging examinations. They generated students' HSC results based on a formula combining their Secondary School Certificate (Year 10; 75%) and Junior Secondary Certificate (Year 8; 25%) results and published a 100% pass rate. Consequently, the tertiary sector has struggled to determine how to allocate places for students for undergraduate studies. Moreover, while some students may be lucky to have passed the HSC hurdle through this auto-pass system, many students are worried that they may have to bear the social stigma of auto-pass in a society where grades are valued because students earned them, not because of technical issues or political manipulation.

### *Ian's story: the pervasiveness of NAPLAN in Queensland, Australia*

As a former secondary school teacher of Anglo-Irish and Italian heritage, who grew up, lived, and worked in rural and urban Queensland, Australia, I have engaged with various kinds of data related to school students as both a teacher and academic. However, it was when I moved from New South Wales back to Queensland in 2010, having spent the first six and a half years of my academic career at Charles Sturt University (in the regional city of Wagga Wagga, New South Wales), that my attention to data crystallised. I was surprised at how much time was devoted to national literacy and numeracy testing – National Assessment Program: Literacy and Numeracy (NAPLAN) – in Queensland. When I visited schools, it seemed that every school had detailed data about their individual student results from the test, and associated data, even as the test was ostensibly designed to provide a 'snapshot' of the systemic outcomes of schools and systems in Australia. It seemed as though what was publicised as something of a 'national audit' of how schools were performing to purportedly provide the government with information about where additional support was required, had morphed into a competitive regime of individual test-taking in which schools (and states (see Lingard and Sellar 2013)) were locked in a competitive battle with one another in which the currency of most worth was high and/or ever improving results on NAPLAN. Students and teachers were increasingly identified as underperforming and as needing remediation depending on how schools were portrayed in these annual results. It seemed that various 'system-validity' results associated with NAPLAN trumped more 'site-validity' concerns on the part of teachers, with inadequate attention to the tensions between the two. There seemed to be evidence of attempts to 'hold a unitary view of validity' (Freebody and Wyatt-Smith 2004, 43) which downplayed the need to consider both systemic and more site-specific needs, and how to collect evidence for these two very different purposes.

I was also struck by how, when asked about whether staff at the school where they worked were influenced by NAPLAN, many teachers would say that they were not. However, they would then proceed, almost in the same breath, to describe the array of practices that were used to track and record students' results in literacy and numeracy, and how these were collected in response to concerns about NAPLAN results! This occurred despite how these tests were increasingly questioned by

teachers, academics and teacher unions, and how they could have detrimental effects for the students who sat them, including reports of feelings of a lack of self-worth, and even instances of students self-harming (Howell 2016; Rice et al. 2016). Teachers had imbibed systemic demands around the need to collect data on an ongoing basis and this was seen as necessary to be able to track and trace how students were performing. It didn't seem to me that these teachers were somehow naive about the effects of such standardisation processes but simply that they often struggled to think beyond the parameters of such testing under conditions in which the generation and collection of such data were so pervasive. This is also perhaps not surprising given the plethora of resources provided to schools by various edu-businesses/companies seeking to monetise the focus on NAPLAN. Indeed, in the Queensland (and Australian context more broadly), parents can purchase NAPLAN preparation workbooks and trial tests at newsagents and supermarkets to work with their children to help them prepare for the test.

The systematicity of these practices was also reflected in how teachers, and principals in particular, would describe how the push to collect these data came from the 'centre', from Education Queensland (Department of Education), and that this was particularly pushed by what they described as their Assistant Regional Directors (ARDs) in each of their regions. In the Queensland context, a regional director oversees all aspects of education provision – including schooling and vocational education – in that jurisdiction. The wide scope of this role invariably means these regional directors delegate authority to individual schools to their Assistant Regional Directors – who might be responsible for looking after 20, 30 or more schools, depending on the size and complexity of the region and the nature of their other responsibilities.

When asked about conversations with these ARDs as school principals' 'line-managers' (a common term used by principals, even as the term is most obviously associated with the business and corporate world), they would invariably describe how they would be asked to show how they had endeavoured to improve their students' performance against an array of school generated curriculum and standardised data, including NAPLAN. One discussion sticks in my mind; one principal in a rural school described how her ARD asked her the question about why her NAPLAN data in Year 5 had dropped from the previous year, even though she only had two students in Year 5! As she relayed it: "Yes, we know you've only got 2 kids". But they still ask – they still push: "Hey, your NAPLAN data dropped from last year! What's going on?" Even though they say all the right things, they still ask that question! And you think, it's all about data to them; it's all about numbers' (Hardy 2021, 163).

### *Louise's Story: Australian & Singaporean experiences of performance data*

I am a fifth generation white Australian, schooled in Catholic schools in Brisbane, then trained as an early childhood teacher in Sydney. I taught in child-care centres, preschools, and schools in Sydney and Brisbane for 8 years before moving into teacher education. My scholarship and lived experiences of early childhood education always foregrounded holistic, qualitative, personalised data (or 'documentation', inspired by

the work of the pre- schools of Reggio Emilia, Italy). The shock of the impact of schooling performance data first struck me when a young boy I know intimately was in Year 3 and handed me his Queensland Year 3 Literacy and Numeracy test (the standardised Queensland state test used to collect data about students' literacy and numeracy before NAPLAN was introduced as a national test in 2008) results, and said, 'I think they are telling me that I am stupid.' He had been away sick on the day the test was conducted and was made to sit the test on the first day he returned to school, during his lunch-break play time. As an 8-year-old boy, he was not interested in the test; he wanted to play with his friends. The report noted he was above average for everything except writing, in which he scored below the national minimum benchmark, probably because he scarcely wrote anything as he wanted the test to be over as quickly as possible! Interestingly, at the age of 8, he had the literacy and numeracy skills to interpret the report, despite his class teacher providing no explanation of the report, just sending it home in children's bags for parents to read. He is highly intelligent, one of the most widely read and knowledgeable people I know, yet because of schooling performance data, he built an internal, self-deflating dialogue that immobilised him from completing school, and university (despite being awarded a merit scholarship for his entrance exam results). I tell this story to communicate the affect of academic performance data and reporting, and how it is a heavily weighted symbol in the ideoscape of datascares.

In July 2019, I relocated to Singapore to become coordinator of an undergraduate teacher education programme that attracted mostly Singaporean and some international students. As soon as I started teaching in Singapore, I noticed how quiet the Singaporean preservice teachers were. Often, I would directly ask an individual student a question, and would not receive a reply. The students would look apprehensive or turn to the student next to them, hoping they may speak for them. Over months of facilitating relational pedagogies in classes of preservice teachers, I came to realise that through schooling, Singaporean students learnt to follow the teacher instructed formulas, to not question, to not initiate, to not speak, to not create anew, to only listen and write. To get the Primary School Leaving Examination (PSLE) results required to get into the secondary school their parents wanted them to attend (thereby enabling access to subsequent post-secondary (particularly university) courses), Singapore students learnt to follow exactly the teacher instructed formulas, to listen, memorise and recall facts.

Singapore is often described as a nation ideologically built on meritocracy (e.g. see Tan 2008). A small island state of 709 square kilometres, it was founded and built as a nation on its people as human capital resources. Arguably, with a reliance upon human capital alone, a compliant citizenry has been carefully orchestrated, particularly through a culture of fear: fear of punishment and fear of losing out. There is an entrenched societal fear of failing – what is locally referred to as 'kiasuism' – a Singlish word derived from Chinese and Hokkien that has a meaning close to 'fear of losing the best' or 'anxiety caused by the fear of losing an opportunity' (Altay 2013). Consequently, children are subjected to tutoring from the age of two. From my lived experiences in Singapore, I witnessed kiasuism clearly functioning as a well-

entrenched ideoscape (Appadurai 1996) across the Singapore experience of schooling.

In this context, tutoring in the early years has become normalised so that even education scholars and expatriates get ‘sucked into’ this expectation. Every residential hub, shopping district/mall has a multitude of tutoring businesses or ‘enrichment’ classes. There is some monitoring and regulation of these centres by the Ministry of Education but no oversight of individual tutors operating independently (Teng 2014). Anyone can be a tutor in Singapore; there is no close monitoring of qualifications (Cheng 2019). One day, as I was climbing on my bike outside an early years tutoring business, I looked across at its glassed entrance and saw a child (perhaps two or three years of age) coiled on the floor, blankly looking through the gap under the blind, perhaps wishing to be anywhere else but there.

### Storying datascares: reimagining and demystifying data

Our stories, reflecting the contours of the educational datascares we encountered, provide multiple examples of an overreaching surveillance of educational processes via data generation, collection and interrogation. Standardised, large-scale data seemed to be the dominant modes in the settings we reflect upon here. Such forms of data appeared to be everywhere – omniscient – and powerful – omnipotent.

Louise’s and Ian’s stories reflect the power of the ‘imaginaire’ (Appadurai 1996) of national testing regimes and the data that become fixated upon within so many national systems of schooling. From the stories provided, perhaps the most harrowing individual example of the power of particular ideas – ideoscapes (Appadurai 1996) – was expressed in Louise’s reflections on the power of metrics to label students and to reduce their sense of efficacy. Her account of the young Australian boy’s experiences reflects how standardised modes of data are deployed dispassionately in schooling settings without regard for their effects upon students’ actual learning, or indeed their very being. Louise’s recall of the ways in which the young boy’s schooling marginalised his individual capacities and capabilities (reflective of the ideoscape of performance data) were similarly evident in Ian’s insights into how such marginalisation occurs systemically, and is reflective of a broader, institutionalised problem that is inadequately recognised; this is the case even as the limitations of such testing have been well documented in the Australian context (Howell 2016; Rice et al. 2016). More topological relations were clearly in evidence in such instances, with their accompanying dataveillance techniques and their use of databases/data infrastructures to encourage submission to data – acts of data submission (Lewis and Hartong 2021).

The pain and anguish associated with these data in Louise’s story also reflect the affect (Beer 2016) that attends data and datafication processes, and how the broad systemic influences Ian reflected upon are felt by the many individuals and groups of students (and parents and teachers) who ‘make up’ such systems. Similarly, the kiasuism associated with the Singaporean context was so strong that the university students themselves seemed to feel too afraid to proffer their perspectives and insights; this fear of failure was viscerally felt, inhibiting students’ further learning and development. Again, the affective ideoscape at play within these ‘metric societies’ (Beer 2016) limited what these students believed was possible. Furthermore, the much more prolific occurrence of

student (and parental) anxiety, including its extreme manifestation as suicide, is not simply a phenomenon limited to one country (e.g. see OECD 2017; Kosidou et al. 2014; Min 2019) but reflective of how the datafied affective ideoscape has exerted so much influence within and across national contexts.

Such power and influence constitute part of the broader ‘meritocracy’ that has come to be associated with schooling. Indeed, such data are so powerful that in Singapore, for example, anxious parents themselves argue against changes to the competitive education system that uses students’ PSLE results at the end of primary school to filter access to more ‘successful’ secondary schools that subsequently affect later educational and life opportunities (Ng 2020). Alternative approaches struggle to be recognised within the datascape that has come to characterise schooling practices in the settings reflected upon here (and more broadly).

Under these circumstances, dominant modes of data, such as standardised PSLE results and NAPLAN data in Singapore and Australia respectively, and heavily institutionalised forms of data collected in the Bangladesh and English contexts, have come to be seen as necessary tools for surveillance – a situation abetted by mediatisation of such data and the sensationalism that often attends their reporting (mediascapes). The ‘controlled’ forms of data collected contribute to an equally ‘controlling’ approach to teaching – further acts of data submission (Lewis and Hartong 2021) – even as such responses are recognised as problematic (e.g. see Ng (2016) in relation to the Singaporean system). That the focus upon national standardised data in the Bangladesh context is itself a social spectacle also speaks to the power and influence of dominant modes of data arising from such accountability and assessment systems.

Surveillance processes are also assisted by various kinds of private-public partnerships between governments and industry. Whether it was the influence of the UK private company, Quacquarelli Symonds (QS) in generating HEI league tables, or the Taiwanese and Japanese companies that have been involved in data analytics informing HEI decision-making in the UK, these various private organisations are integral parts of broader infrastructures of accountability which generate and collect data, reconstituting government schooling in the process (Hogan and Thompson 2021). Similarly, the private tuition industry in Singapore in Louise’s story, and in Bangladesh in Obaid’s story, reflect the influence of a broader ‘financescape’ (Appadurai 1996) of funds that help to prop up, or profit out of, the entrenched pursuit of high scores in purportedly meritocratic schooling systems. And the plethora of resources provided to support NAPLAN in the Queensland/Australian context similarly reflects the interplay between financescapes and datascapes, and how the former enable the spread of the latter beyond the school setting; this includes into the private realm of the family home, as parents work with their children on NAPLAN-style mock tests and resources.

As Vicente and Obaid’s stories, in particular, also indicate, time can exert influence in multiple and unpredictable ways. Arguably, the rate of ‘accelerationism’ (Buddeberg and Hornberg 2017; Sellar and Cole 2017) at present, and evident in

some of the stories, is of a different order from that reported in existing research. In the context of the disruption created by COVID-19, there has been a viscerally felt need to come up with a 'solution' quickly. In the English case, the way in which this was to be achieved was through using historical data as a predictor of school outcomes. In the Bangladesh case, the application of an algorithm to quickly 'produce' the necessary results was deemed adequate. Not only is there an acceleration evident (in Harvey's (1989) sense), but also topological relations via information-centric manipulation of data (Sellar and Gulson 2019) in these stories. The attendant disenfranchisement of the students affected by such datafication processes seems to have been largely ignored (at least initially in the English case). The way in which Ofqual incorporated historical test performance of a school (rather than students' individual performance) in its algorithms, together with factors such as class size, reflects this manipulation; previous outcomes were topologically connected to future outcomes. The result was simply a perpetuation of already entrenched inequity in a system characterised by the continued privileging of selective private schools (with historically better performance and smaller class sizes) over government schools (Wakefield 2020). In the Bangladesh case, the decision to implement the auto-pass algorithm appeared to be the latest in a broader process of inadequately accounting for the nature and evidence of students' actual learning. The result is a derogation of any subsequent data- and evidence-informed approaches that draw upon such misleading information. We have pictorialised such a dystopic imaginaire in Figure 1 as an additional means of visually storying some of the problematics we raise here.

Figure 1 is a possible representation of how a composite datascape of our stories might be visualised. Through imagery, we play with dominant motifs in our stories, seeking to demystify the nature of data. Media 'waves' across the landscape skies (media flag) and airwaves (radio data) (as highlighted in Ian's story). The dominant narrative of school performance data permeates the landscape across all stories as the broader public discourse in education is metaphorically amplified ('radio data'). Schools and homes are crowded and dominated by the financescape of tutoring businesses, and various kinds of 'data mining' companies that profit from the attention to standardised modes of data in schooling and university settings. The broader ideoscape is promulgated through media and tutoring businesses (prominent in Louise's story) and educational authorities. The education and quality departments/ministries seek to operationalise the imaginaire of the significance of data (so overtly expressed in Obaid's and Vicente's stories). Data plumb-lines flow from children and youth in homes to schools (with tutoring businesses on the side) to departments, ministries and data-mining companies illustrating the intensity of this

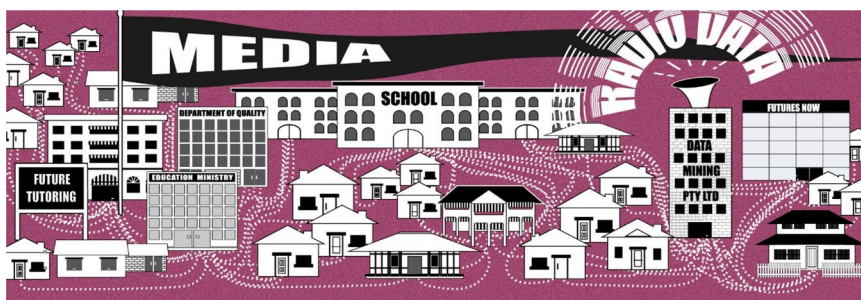


Figure 1. The datascape of our stories: The interplay of scapes within contexts. Graphic created by Paula Jayne of Seedhead Design Consultancy.

imaginaire and the interconnectedness of these influences. While the school may be in the centre of this image, it is portrayed as something of a ‘factory’ for generating multiple forms of data that are then taken up and amplified by a variety of other institutions (including government, media, private tutoring and data-mining companies).

Arguably, what such visualisation of these stories highlights is the evisceration of the professional capacity of educators to identify and validate students’ learning/results, and the reification of various ‘shadow professionals’ (Lewis and Hartong 2021) associated with the new data infrastructures. These technicians, and the technoscapes of the predictive analytics used to generate these numbers, draw upon incomplete/partial information that fails to capture students’ actual learning. Instead, what is presented to students is a proxy figure that bears little resemblance to such learning capacities and capabilities. What happens to the students as individuals under these circumstances?

When we consider the broader policy conditions within which individual students as learners and people are disenfranchised, Walter Benjamin’s Angel of History, and his own storytelling approach, provide useful stimuli vis-à-vis the effects of this reification of dominant data discourses. Reflecting upon Paul Klee’s 1920 print of *Angelus Novus* (‘new angel’), Benjamin’s Angel of History is caught in a state of perpetual motion not of his making and which is propelling him backwards into the future. This propulsion is occurring in such a way that he can only ever see the unfolding state of turpitude and disarray that characterises his ‘progress’:

His face is turned toward the past. Where we perceive a chain of events, he sees one single catastrophe which keeps piling wreckage upon wreckage and hurls it in front of his feet. The angel would like to stay, awaken the dead, and make whole what has been smashed. But a storm is blowing in from Paradise; it has got caught in his wings with such violence that the angel can no longer close them. This storm irresistibly propels him into the future to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress (Benjamin 1955/1992, 249).

The ‘new’ (Lury, Parisi and Terranova 2012) spatio-temporal relations, together with time- space compression (Harvey 1989) as elaborated in each of our stories reflects the power of the storm of data influencing and impacting upon students, educators, parents – all with a vested interest in institutionalised forms of education. It is not too

much of a stretch to describe lives as wrecked – ‘piling wreckage upon wreckage’ – as a result of these dominant discourses of data. Furthermore, the more those involved struggle against dominant discourses and reified conditions of data, the more difficult it appears to do so.

However, through providing accessible accounts of the problematic effects of data – storying data – we might begin to consider alternatives – to reimagine learning. As Benjamin (1955/1992) himself described: ‘traces of the storyteller cling to the story the way the handprints of the potter cling to the clay vessel’ (91); the very act of storytelling as the storyteller drawing from her experience or that of others and ‘mak[ing] it the experience of those who are listening to his [sic] tale’ (87), enables insights and creates perspectives that may contain within them the seeds for change and necessary renewal. Such renewal may serve as a necessary corrective to the intensity of an imaginaire of reductive forms of data. And just as the late, prominent comparative educator Erwin Epstein sought not to write a conclusion in his edited volume of notable twentieth century comparativists because the future of comparative education was still very much unfolding – influenced as it is by the Global South, Asia as Method and critiques of US comparative educators in relation to colonialism (Cowen 2020) – so too different and varied responses and stories of different educators with very different and varied experiences, including from various Southern contexts and circumstances, suggests the possibility for more responsive and engaged approaches to what constitutes more productive forms of data.

## Conclusion

Through and across our respective stories, we have sought to reflect upon and critique dominant data discourses in specific institutionalised educational settings/places. Such stories provide an alternative form of ‘data’ and serve to debunk the purportedly ‘universal’ value implied by more dominant discourses of data (Schäfer and van Es 2017). These stories give cogency to the fragmentation of lived lives, and the necessity to ‘write in fragments’ in an effort ‘to honour the world as we find it, not as we want it’ (Carney and Madsen 2021). By doing so, we seek to ‘refuse the myth’ (Coudry 2017, 238) of how data construct us, but also how we, in turn, can reconstitute how data are construed in our everyday practices as ‘critical data practitioners’ (van Dijk 2017, 12). That is, we seek to demystify data, at the same time we wish to reimagine it.

Such demystification and reimagination entails acknowledging and including the messiness of actual stories – a form of data that cannot simply be ‘cleaned’ in ways sometimes ascribed to more dominant forms of data. At the same time, we also acknowledge the inherently auto-ethnographical nature of the stories presented, and that a different set of stories could also be told by other academics and educators, reflecting a different set of experiences, and potentially requiring different forms of conceptual resources to make sense of such stories, and their implications. Indeed, we argue for increased attention to stories in research that are typically marginalised and ignored within more dominant discourses of data. Such stories necessarily need to be told in the words of those to whom they relate – to be co-constructed (not simply



‘collected’) – through ongoing engagement and constant checking with participants. This includes stories from parents, students and teachers whose voices are silenced, ignored or overlooked. Such accounts do not seek to establish a warrant for ‘generalisability’ ascribed to more positivist research but instead seek to remain true to the lived experiences of those to whom they relate. By so doing, such accounts serve as a stimulus to others to consider how they might engage and produce data differently.

By drawing attention to stories reflective of the broader datascares in which our work unfolds, through our examples, we have sought to provide an alternative to dominant discourses, and a way to ‘capture’ the datascape within and across contexts. Mapping this landscape and how it affects students and educators is key to challenging more dominant conceptions of data and their transient but deeply limiting and problematic nature (Schäfer and van Es 2017). By doing so, we can demystify the seeming omnipotence and omniscience of these ‘universal’ data, and the temporal and spatial datascares of which they have become such an integral part, and provide possibilities for thinking differently about how to respond more educationally to those with whom we engage.

## Note

1. While the terms ‘examination’ and ‘test’ are frequently used interchangeably as nouns, there is also a sense in which examinations are more formal assessment instruments assessing particular courses of study while tests may be associated with assessing particular skills or knowledge (Collins Dictionary, <https://www.collinsdictionary.com/dictionary/english/>)

## Notes on contributors

Dr *Ian Hardy* is Associate Professor in the School of Education, The University of Queensland. Dr Hardy’s research focuses on educational policy and politics, including in international and comparative settings. He is author of the recently published volume *School reform in an era of standardization: Authentic accountabilities* (Routledge; 2021).

Dr *Louise Phillips* is Associate Professor in the Faculty of Education, Southern Cross University. Dr Phillips’ research focuses on story(tell)ing, children’s rights and citizenship, arts and rights based pedagogies and methodologies, decolonizing methodologies, sensation and place. She is lead author of *Research through, with and as storytelling* (Routledge; 2018) and *Young children’s community building in action: Embodied, emplaced and relational citizenship* (Routledge; 2020).

Dr *Vicente Reyes* is Associate Professor in the School of Education, The University of Nottingham. Dr Reyes’s research focuses on educational transformations, technology innovations in education and comparative education reform. His latest book is entitled *Mapping the terrain of education reform: Global trends and local responses in the Philippines* (Routledge; 2016).

Dr *M. Obaidul Hamid* is Associate Professor in the School of Education, The University of Queensland. Dr Hamid’s research focuses on the policy and practice of TESOL education in Asia. He is co-editor of *Language planning for medium of instruction in Asia* (Routledge; 2014).


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## ORCID

Ian Hardy  <http://orcid.org/0000-0002-8124-8766>

Louise Phillips  [http://orcid.org/0000-0002-2937-](http://orcid.org/0000-0002-2937-145X)

145X Vicente Reyes  <http://orcid.org/0000-0002-1539-1839>

M. Obaidul Hamid  <http://orcid.org/0000-0003-3205-6124>

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