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TITLE

HUMANISING AS INNOVATION IN A COLD CLIMATE OF [SO-CALLED-EVIDENCE-BASED] TEACHER EDUCATION

Abstract

This article argues for the humanisation of research evidence through narrative as an urgent project in teacher education and development. Narrative has the potential to make a significant contribution to a critical re-definition of both evidence and innovation in teacher education. But this argument is not a call for a user-friendly (re)packaging of research evidence, so that 'what works' can be diffused throughout the profession. Globally, such efficiency and productivity approaches have merely sedimented established inequities and injustices. By humanising, the paper promotes a recognition that research evidence of value, is steeped in rich provenance, being both borne out of, and brought to bear in, complex and diverse contexts that are mediated by, and impact upon, the unpredictable yet meaningful activities of humans. It is argued that using evidence effectively is predicated on intelligent judgment and interpretation in and on action, processes that require moral deliberation as well as pedagogical and technical innovation. The central role of narrative in this endeavour is explored critically.

Keywords: evidence; narrative; teacher education; humanisation; innovation; datafication;

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Humanising as innovation in a cold climate of [so-called-evidence-based] teacher education

Keith Turvey* School of Education, University of Brighton, UK

k.turvey@brighton.ac.uk

Introduction

Aims, definitions and arguments

The aim of this paper is to explore how data and evidence in education has the potential to be both dehumanising or humanising and the implications this holds for teacher education. Perotta and Williamson paint a dystopian and dehumanised vision of education and education research, arguing that the interpretation of the learner and teacher as a 'data construct' is being 'operationalised as objective ways of knowing' and generalising about education (2018, 5). Similarly, Cope and Kalantzis (2016, 8) argue that increasing datafication, as in the automation of data generation, and, to some extent, the automated rendering and analysis of data, mean that educators like other professions such as health, are increasingly working in transformed environments where the abundance of data, require 'new professional and pedagogical sensibilities'. But what is the nature and foundation of these sensibilities?

This paper argues that such new sensibilities are contingent upon the rethinking of what data is privileged and how such data is generated and used as evidence in evidence-based teacher education. In doing so, the paper draws on calls for the humanising of research evidence (Paris and Winn, 2014; McCarty et al, 2017). Paris and Winn (2014, xvi) emphasise the need for researchers to be 'worthy witnesses' through humanising approaches that build 'relationships of care and dignity and dialogic consciousness raising for both researchers and participants'. Narrative, I argue, is central to the establishment of such care, dignity and 'dialogic consciousness raising' (Ibid). But, it also has the potential to bridge paradigms and respond to McCarty et al's call for humanising research in education that can 'enhance

interdisciplinary connections' (2017, 20S), and potentially establish increased provenance of research evidence in education. For the purposes of this paper, I define data or evidence that dehumanises as increasingly meaningless and 'unusable' as it is lacking in the provenance capable of sustaining learning or teacher development. On the contrary, humanising data is characteristically meaningful and 'usable' being constructed on a rich provenance which has the capacity to sustain and inform teachers' and practitioners' pedagogical judgements and development.

The first half of the paper examines some of the risks of a narrow and dehumanising construction of data or research evidence in education. I argue that dehumanising evidence lacking in provenance can lead to the suppression of teachers' personal and professional development through what I term, pedagogical paralysis. I define pedagogical paralysis as a reduction of insightful theorising about practice (Cochrane-Smith and Lyle, 2009) due both, to the tendency to conceptualise teachers as technicians and, the proliferation of dehumanised data that lacks the provenance that might render it meaningful and usable for teachers and learners. This is predicated on the view that teacher education and research must sustain teachers' learning throughout their career, as they are 'critical to the success of all efforts to improve education' (Cochran-Smith and Lyle's, 2009, 1). Pedagogical paralysis, it is argued, emerges from the dominant ideology of teachers as technicians and uncritical implementors of 'what works', rather than the fundamental premise that teacher education should prepare teachers as 'deliberative intellectuals' able to theorise about practice as they work towards the 'joint construction of local knowledge, the questioning of common assumptions, and thoughtful critique of the usefulness of research' (Cochran-Smith and Lyle, 2009, 2).

The second half of the paper critically explores the potential of narrative as a humanising tool 'able to incorporate (and respond appropriately to) diverse cultural contexts' (Greenhalgh, 2016, viii). Without the subjectivity of events and the distinctiveness of cultural contexts, it is argued, the gap between research and practice is unbridgeable. I also draw on an

example from my own teacher education practice to support the argument for the potential of narrative as a humanising innovation in education. The paper concludes that humanising research evidence in teacher education is a necessary and critical form of innovation that will require teachers to become active participants and enablers of innovation ‘in any context’ (Cranmer & Lewin, 2017, 412) if they are to address the persistent issues of social justice and inequity in education. Narrative, it is proposed, offers some opportunity to hold the burgeoning of dehumanising forms of datafication in education and teacher education to account, and provide insights into the cultural impact of privileging certain kinds of evidence or misunderstanding the limitations of different kinds of evidence.

Dehumanising contexts

Goldacre’s report (2013) to the United Kingdom (UK) coalition government (2010 – 2015) portrayed a disparagingly ‘cold’ picture of the state of education research, calling for education to mimic medicine with more ‘gold standard’ randomised controlled trials (RCTs). It is acknowledged that RCTs have a place, as one approach to estimating the potential impact of educational interventions. However, the limits and risks of the uncritical reification of a single methodological approach such as RCTs, to inform practice, have been well established in evidence-based medicine for some years. For example, Tonelli pointed to the dehumanising potential inherent in naive debates regarding evidence and practice, arguing that the ‘individuality of patients tends to be devalued, the focus of clinical practice is subtly shifted away from the care of individuals toward the care of populations, and the complex nature of sound clinical judgment is not fully appreciated’ (1998, 1234).

Similarly, diffusion models of innovation (Rogers, 2003) in education calling for ‘what works’ often fail to ask for whom, and in what context, and for what reason or purpose? Such calls remain blind to – and perpetuate – the injustices and inequities already inflicted on marginalised individuals and communities. The shift towards the education of populations

(epidemiological) rather than the education of individuals and communities (personal and human) has colonised schooling, whereby the discourse of accountability has become the norm (Cochran-Smith et al., 2017). I witness the manifestation of this discourse in Initial Teacher Education (ITE) annually as each cohort of pre-service teacher recruits, often return from their first foray into schools having quickly picked up various labels to describe the children they have encountered — e.g., 'highers', 'lowers,' 'on track to achieve,' 'below expected,' 'met,' 'met minus,' 'met plus'. Such labels, grounded in reductive economic metaphors, serve to render invisible the richness and diversity of learners and their communities, dehumanising them.

Statistics without stories

The cold climate in the use of evidence in education can be seen in the tendency towards statistics without stories. Econometrics in education and the social sciences, as the basis for quality judgements and decisions about what interventions are or are not worthwhile, have gained favour both globally and nationally (Deaton and Cartwright, 2018). There is increased interest in what are presented as 'evidence-based toolkits' designed to provide practitioners with research evidence, which focus predominantly on cost-benefit analyses based on projected attainment outcomes or effect sizes (Higgins et al, 2013; Hattie, 2009). Such toolkits pose a challenge for teacher education, as their oversimplified presentation belies the complexity of practice and to a large extent they fail to convey the ingenuity of teachers' pedagogical decisions and actions. For example, Alexander (2015) questions whether such measures capture what matters in education, and argues for a re-balancing and distinction between measures and indicators. Indicators here are defined as concurrent signifiers that have the potential to capture more of the multi-faceted qualitative nature of concurrent educational processes and experience, whereas measures quantify and are focused on outcomes such as attainment (Alexander, 2015). Without the detail and insights that indicators can yield, it is argued, that the intrinsic value of the educational process and experience may be reduced or even lost. In terms

of the place of RCTs in education, I concur with Deaton and Cartwright who note (2018, 2), RCTs are only usable 'as part of a cumulative program, combining with other methods, including conceptual and theoretical development'. Conceptual and theoretical development is contingent upon sufficient indicators being identified to capture the character of an intervention. The need for a distinction and rebalancing between methods that measure and methods that focus on concurrent indicators is evident in the tensions found between different types of evidence used in recent years (National Centre for Social Research [NatCen], 2012; Institute Fiscal Studies [IFS], 2016) to justify or question policy interventions such as universal free school meals (FSM) or breakfast programmes for primary-aged children in England (5-11 years of age).

An econometric study into universal FSM by the National Centre for Social Research (NatCen, 2012) found that over a period of two years children made an additional two months' progress in comparison to a control group. This concurs with similar gains in attainment found for breakfast programmes by the Institute for Fiscal Studies (IFS, 2016). In comparing the evidence offered by these two studies, the IFS study (2016) focused mainly on outcome measures such as attainment, attendance, and behaviour, whereas additionally, the NatCen (2012, no page) pilot study included qualitative case studies to 'document the experiences and views of teachers, pupils and parents/carers'. The story behind the statistics of the NatCen pilot study revealed some significant insights in terms of qualitative indicators of social cohesion within and beyond school as well as the formation of healthy eating habits. For example, the qualitative case studies reported a reduction in the 'differences in the quality of food eaten at lunchtime' (NatCen, 2012, 114) as well as social benefits of children eating together, and more positive relationships between schools and parents.

The aims and purposes for introducing a nutrition-based intervention such as universal free school meals or a breakfast programme, like other decisions or actions taken in education are multifaceted being intrinsically moral, political and educational in nature (Biesta, 2013;

Parkhurst, 2017). Indicators and measures lend themselves to different considerations. The intrinsic human value of an intervention is only partially captured or reflected by post hoc outcome measures such as attainment or attendance, significant though these may be. Consequently, there is a risk that reifying the significance of that which can be measured through the promotion of simplistic cost-benefit analyses, over indicators that point to the intrinsic quality or value of the children's experience, reduces our capacity to understand the scope and range of any potential benefits. Parkhurst (2017, 8) gives numerous examples of this phenomenon in evidence-based policy making, which he calls 'issue bias', whereby 'social values can be obscured or marginalized through the promotion of certain forms or bodies of evidence'. Thus, in a cold climate of statistics without stories, the intrinsic value of a policy instrument such as universal FSM, with the potential to promote social cohesion and positive dispositions towards a healthy lifestyle, is at risk of becoming side-lined, if different types of evidence are not considered concurrently.

The narrow framing of data and evidence in so-called evidence-based policy and its over-simplified presentation in teacher toolkits, it is argued, needs to be addressed directly if we are to enable rather than constrain innovations and improvements in education and teacher development. As Alexander (2015) argues, measures measure but indicators offer the potential to capture and identify the ubiquitous and distributed qualities of educational processes and experience concurrently over time. If teacher education focuses myopically in preparing teachers to respond only to the estimated cost-benefit analyses of educational interventions, it runs the risk producing teachers unable to respond to the unpredictability of pedagogical practice and the diversity of learners. If we accept that quality and the intrinsic value of our actions as educators are ubiquitous and distributed then indicators, rather than post hoc measures estimating probable outcomes of educational interventions, are more enabling of cumulative (Deaton and Cartwright, 2018) innovation in teacher education and development. Indeed, I argue that a narrow framing and dehumanising of what 'counts' and matters as

evidence in education research leads to a paralysis of pedagogical innovation in teacher development. Signs of such pedagogical paralysis are evident in the recent history of educational technologies over the last 50 years.

Educational technology: a story of pedagogical paralysis

In a recent research review of the issues of impact and measurability of education technology, Pachler and Turvey (2018, 16) find that:

> face-value approaches to measuring impact that employ only post hoc instruments to find correlations or associations between technology take-up and school performance measures simply raise more questions than they answer, without more detailed levels of granularity that complementary and concurrent qualitative data could afford.

Reviews of the field of educational technology research offer some useful insights into the problem of innovation in teacher development because, for technological innovations to be effective, concurrent pedagogical innovations are also imperative (Fisher, Higgins and Loveless, 2006; Cox and Marshall, 2007; Jenkinson, 2009; Pérez-Sanagustín et al, 2017). Despite this need for concurrent pedagogical innovation, an examination of the history of digital technologies in education reveals a preponderance of often deterministic interventions based on the assumed transformative power of digital technologies to impact on children's learning. Similarly, in terms of the research into these interventions and the types of evidence favoured, Pérez-Sanagustín et al's review (2017) found quantitative studies in abundance but, a significant lack of studies focusing on teachers' pedagogical actions or involving participants in their design. This concurs with Cox and Marshall's earlier study (2007) which, inter alia, found that a significant problem with the nature of evidence regarding educational interventions involving digital technologies was the failure to identify in adequate detail, actual pedagogical use. Innovations in the use of digital technologies in education, it could be argued, are locked into a cycle of pedagogical paralysis due to the lack of human perspective that rigorous

concurrent qualitative evidence can bring regarding the complex pedagogical judgements and decisions teachers need to engage with when appropriating digital technologies. Research into the latest technological intervention in schools - tablet devices - appears to confirm such a pedagogical paralysis. Haßler at al.'s (2015) meta-analysis of RCTs focusing on the use of tablet devices in schools found mixed results in terms of attainment; that is out of 23 studies, 16 reported a positive impact on attainment, 5 no difference and 2 had a negative impact on attainment. However, most significantly they reported that 'a large proportion of identified research offers limited or no details of the activities that learners engaged in,' (2015, 151). Yet again, it would appear that measures are reified over qualitative indicators capable of capturing the nature of the interventions and experience, without which the research evidence is rendered of limited use. It is acknowledged that meta-analyses, by their very nature, are not designed to offer classroom-ready strategies for teachers. However, even a closer examination of many of the individual RCTs analysed by Haßler at al (2015) would yield limited insight into how teachers could incorporate tablet devices more effectively into their practice to increase the potential for positive impact on children's attainment. Equally, they would find limited indicators of the intrinsic value the use of such devices might have in terms of the development of children's critical media literacy. The absence of a validated human perspective in such research merely breeds further paralysis in terms of teacher development and pedagogical innovation. As Deaton and Cartwright (2018, 7) note, narrowly framed RCTs that ignore different forms of prior knowledge 'are recipes for preventing cumulative scientific progress'. So how can narrative bring both the potential to humanise evidence, and promote innovation in teacher development?

Narrative as 'privileged' human trait?

Simkins (2013) reported the playwright David Mamet reflecting that 'narrative always wins out over statistics'. The argument I put here, is not that narrative is a superior vehicle for capturing and conveying the qualitative nature of experience, but that its rightful and essential place is

alongside scientific modes of making meaning and knowledge; that is, as a symbiotic equal to scientific modes of thought and method, that can support the contextual provenance that evidence needs, if it is to become meaningful and usable.

Bruner (1986, 11) distinguished between two distinct human modes of thought; paradigmatic and narrative insisting, however, that these modes are ultimately 'irreducible to one another'. Logic, reason, the need to categorise to compare or establish cause and effect belong inter alia to the paradigmatic, which seeks to verify by 'appeal to procedures for establishing formal and empirical proof' (Bruner, 1986, 11). Narrative, by contrast, verifies or convinces by appeal to how like life, or reality, it appears to be, drawing on processes that attempt to make sense of the capricious and diverse nature of human intention, perception and experience (Bruner, 1986). Narrative is a powerful and inherently human mode for both establishing and conveying meaning/s as Polkinghorne (1988 and 1995) has also highlighted, because it can allow the stories of various and diverse sources and contexts to emerge, which in turn generates affordances for critical interpretation between people and communities. That is, narrative is an intrinsically human, interpretative and explanatory device.

I was recently struck by this unitary, yet symbiotic nature of the paradigmatic and narrative in the natural sciences, on a visit to Cambridge University's Sedgwick museum of natural history. Meticulous scientific classification and analysis of prehistoric and fossilised specimens abound, but so do explanatory narratives that help make sense of the complex and diverse stories of evolution. Whilst not everything is reducible to narrative it is ultimately comprehensible and useful in the social world through narrative. Of course, stories may be incomplete or even inaccurate, but they can act as antecedents to more complete and accurate stories. Again, we see this in the natural sciences as we may in the social sciences; numerous fossilised remains of prehistoric reptile ichthyosaurs with dead young inside them, led to interpretative and explanatory stories that this prehistoric reptile had a tendency to eat its young. This narrative became supplanted after the discovery of ichthyosaur fossils which

appear to show the reptile was capable of giving birth to live young, as opposed to laying eggs (Wang and Evans, 2011).

The desire to understand and explain are natural human instincts and story is an optimal mode for interpreting, communicating, revising and ultimately, humanising evidence. As Goodson more recently argues, narrative as a mode of thought, interpretation and explanation, allows us to 'move beyond (or to the side) of the main paradigms of inquiry' (2016, 89). It offers the potential for recontextualising and humanising evidence in ways that recognise the distinctive and diverse nature of lived experience. In the context of teacher education such an approach is focused on 'praxis for emancipatory ends' (Ellis and Maguire, 2017, 595). This is in contrast to normative econometric approaches, which, if adopted uncritically, can merely reproduce racial, cultural, gender and class biases by conceptualising populations as a generic monocultural entity for whom a singular 'what works' can be found, based upon an average estimation of an education intervention's effect (Deaton and Cartwright, 2018). Increasingly, assumptions about representation are being questioned as is the assumption that bias is eliminated through randomization (Sianesi, 2017; Deaton and Cartwright, 2018). As Sianesi notes (2017, 47), in clinical trials, participants 'have been found to be quite unrepresentative of the population to whom the results will subsequently be applied'. In education, Simpson (2017, 17) also highlights how generally 'it is good experimental design to reduce variance other than that induced by the intervention,' which assumes a certain level of prior knowledge with regards the intervention within the experimental context. Such assumptions can be problematic both in terms of representation and any unchallenged acceptance of effect size as an absolute measure for generalizing, aggregating and comparing the cost effectiveness of education interventions applied at the general level to populations. Deaton and Cartwright (2018) argue strongly, that such approaches involve trade-offs between precision on the one hand and attempts to eliminate bias on the other hand, which can themselves impact on the outcomes. As contextual detail may be eliminated 'we run the risk of worthless casual ('fairy story') causal

theorizing and have given up on one of the central tasks of economics and other social sciences' (Deaton and Cartwright, 2018, 18).

Whilst undoubtedly there is a need to question how different studies and types of evidence are valued and used, all evidence generated by whatever method can benefit from humanising and increased provenance. Theorising about why things happen and why people behave as they do cannot be adequately developed 'through unjustified faith in numerical quantities as having particularly special status' as evidence (Simpson, 2017, 17). But narrative as an emancipatory process is also not without risk and, as stated, the intention here is not to argue for the superiority of any one form of evidence over another. This is not a simple binary argument that qualitative evidence is rich in provenance and quantitative is lacking. Rather, it is a concern with how the humanising potential of narrative can play a role in enriching the provenance of both quantitative and qualitative evidence and data. With this in mind I turn now to a critical analysis of narrative.

The politics of data and narrative

The crisis in what counts as meaningful and useful data and evidence in education research and the social sciences more broadly, is a recurrent one historically (Eisner, 1997). Our digitally connected and increasingly algorithmically driven world yields ever more opportunities to add exponentially to the volume of data and evidence available to policy makers, researchers and teachers or other stakeholders. As Potter identifies (2018), algorithmic data acquisition and analysis of children and students' educational endeavour is increasingly justified with arguments pertaining to personalisation; but as Potter notes (2018, 117) such datafication is often 'in an arcane negotiation with the aims and objectives of education'. As Eisner highlighted back in 1997, (175) the knowledge that may be harvested from such data has 'political ramifications as well as intellectual ones', although in a digitally connected society we might justifiably argue that the stakes are raised significantly as are the ethical and moral

concerns. Those researching the implications of so-called 'big data' and how the capacity and speed of learning analytics might be concurrently fed back into the ongoing pedagogical process, highlight the capacity of data 'to make transparent the assumptions and deliberations that go into choices and to ask questions'(Neff et al, 2017, 94). Neff et al go onto argue, stories 'give data meaning across communities with different expertise, cultures, and practices' (2017, 94). So, what of the argument that narrative offers the opportunity to talk back to policy in far more inclusive and democratic ways that recognise the complexity of context? Are we at risk of merely perpetuating a naïve, utopian view?

As Parkhurst (2017) emphasises, technical bias and issue bias in the design and use of research evidence have a tendency towards abstraction and reduction through quantification. Such processes risk becoming unrepresentative and unaccountable to local and diverse populations. Parkhurst (2017) like others (Greenhalgh and Russell, 2006) suggest that the mere act of framing political problems in public services such as education and health, as resolvable through research-informed technical solutions, can have the effect of undermining democratic debate and dialogue. The use of technical research informed evidence can undermine democratic legitimacy for policy and pedagogic decisions in schooling, through obscuring complexity as hierarchies of evidence privileging certain research designs 'may ignore other important evidence sources, may fail to recognise the need for local applicability or may provide an insufficient basis for policy decisions' (Parkhurst, 2017, 30). It is also clear that technical bias and issue bias, as outlined by Parkhurst (2017) that marginalise some forms of evidence and reify others, not only devalues democratic debate but can also reduce any ongoing debate to impoverished and simplified binaries. Reductive approaches to research evidence of any kind, expose it to political manipulation and render it pliable for those motivated by the production of 'fake' narratives towards undemocratic political ends. Eisner (1997, 181) alludes to this with the analogy of Rorschach's psychological ink blot test where 'everyone confers his or her own idiosyncratic meaning to the data' as evidence is co-opted to legitimise dubious and

even malevolent, political narratives. Nowhere is this more evident than in the way ‘evidence’ is manipulated to serve various political agendas through social media. Data and evidence are not apolitical and decontextualized data in education, quantitative or qualitative, can be easily co-opted to legitimize pernicious agendas like the racist one seen in the following transcribed Twitter exchange (Figure 1):

> ***Policy Adviser****: GCSE data published today shows that for the first time pupils for whom English is not their first language (EAL) did better than native speakers on every measure reported by the DfE*
>
> ***Extreme Right Wing Activist****: We know why this is. White working class kids have been neglected and forgotten as the focus has been completely on minorities. We are not even allowed to be proud of our identity, our youth have lost their identity.*

Figure 1: Transcribed Twitter exchange 26/01/18 between former DfE Senior Policy Adviser and an extreme right wing activist responding to publication of examination data in England[1]

It is naïve to suggest that the humanising of evidence through narrative, offers immunity against the kinds of pernicious political manipulation illustrated in Figure 1. Indeed, whilst some stories may speak for themselves, many do not. Stories are located culturally, politically, socially and historically, and their interpretation within these wider contexts can help to bring meaning. But like other forms of data and evidence, stories are open to manipulation. As investigators of narrative and life history methodologies highlight, merely reifying personal stories de-coupled from their wider social, cultural, political and historical contexts is not without risk (Goodson, 2017; Andrews, 2017; Turvey 2017). As Goodson notes ‘specific empowerment can go hand in hand with overall social control’ (2017, 89).

[1] The name of the Tweeter responding to Sam Freedman’s tweet has been removed so as not to legitimise the extreme right-wing organisation this person is a spokesperson for. The full exchange is available at the following link https://twitter.com/Samfr/status/956837283398905856

San Pedro and Kinloch (2017, 391S) argue that the humanising potential of stories and storying offer opportunities for researchers and educators to promote ‘human agency, diverse perspectives, the co-construction of knowledge, the sustenance of meaningful relationships, and the disruption of educational inequities’. Such capacities recognised within narrative, as a fundamentally human endeavour, speak to both the micro, meso and the macro levels of the social matrix. But, we must not lose sight of the meso and macro, and continue to ask ‘how are the terms and concepts of our work with teachers, policy makers, and the public forwarding a more equitable education and society? (Paris, 2012, 93). Narrative and the exchange of stories (San Pedro and Kinloch 2017) – listening as well as telling – is portrayed as an inherently humanising process that centres on building and sustaining relationships. Narrative is also identified as a constituent element of a culturally sustaining pedagogy; that is, pedagogy that seeks to build on Ladson-Billings’ (1995) concept of cultural relevance in resisting the colonisation of ‘linguistic, literate and cultural pluralism as part of the democratic project of schooling’ (Paris, 2012, 93). Indeed, as I have argued here, narrative approaches to the co-construction of knowledge offer fertile ground for plural perspectives. As Eisner (1997, 180) states, innovative forms of representing or indeed generating evidence such as narrative offer ‘productive ambiguity’ by which he means they are more ‘evocative than denotative.’ Such ambiguity can leave open the door to re-use, further interpretation, negotiation and co-construction of knowledge. But personal and specific stories (micro) do not automatically buffer with or indeed translate into discourses on, or critique of, social inequities at the meso and macro levels. The recent hideous fire that consumed so many lives in London’s Grenfell Tower, exposed systemic social, cultural, racial and economic inequities and injustices, as the many individual and collective stories emerged of this man-made (sic) tragedy. Yet, survivors continue to struggle daily, for fair representation and justice in their quest for truth. As Goodson warns stories do not in themselves ‘analyse and address the structures of power’ (2017, 100).

Narrative is no panacea, but I argue that the dehumanising absence of narrative in what counts as evidence erodes our capacity for informed and critical judgement. Greenhalgh, Howick and Maskrey (2014) highlight this phenomenon in evidence-based medicine where absence of narrative can lead to the algorithmic adherence to and application of evidence, which they claim is leading to a crisis in evidence-based medicine. Similarly, in teacher education, Cochran-Smith et al find, thinly-evidenced data-driven policies do not 'provide usable information' for programme or pedagogical improvement (2016, 16). Addressing such structural paralysis – as in the inability to move forward and address issues of social justice and inequity, or issues of pedagogical paralysis in teacher education and innovation – is predicated on a complex of factors such as; the fullness of evidence, space and capacity for ethical and moral deliberation, space for critical reflection, opportunities for collaboration and, intelligent action. Harnessing evidence for social good in education then is also dependent on the contexts in which it is developed, sustained and, most importantly, acted upon, by teachers and stakeholders. I conclude this paper by examining one example of how we might promote contingencies in ITE that afford the necessary dispositions for harnessing evidence both for pedagogical practice and social good. I do this through the examination of a specific example of what I present as a humanising and culturally sustaining innovation in teacher education that foregrounds the importance of developing pre-service teachers' narratives.

A humanising and culturally sustaining innovation?

As part of a primary school (Ages 5-11) teacher preparation programme at a University in the south of England, student teachers undertake a module – Contemporary Issues in Teaching and Learning – which uses blogging to establish a profession-led (Teacher Education Exchange, 2017) model of learning to teach. That is, a model that, as Ellis notes (2010, 116) views school-based experience as the 'object of inquiry by student teachers, teachers and university-based teacher educators'. The utilisation of third space (Bhaba, 1994) that blogging yields provides a

conducive medium through which the 'provenance of the student's thinking is traceable' (Cope and Kalantzis 2016, 8). Turvey and Hayler (2017) argue that such an approach can promote a shared process of meaning making through narrative. Narrative renders evidence traceable through a process of qualitative aggregation towards theorization and further potential pedagogical action. This process supports student teachers who engage with this module and professional blog, to contribute to the development of a collaborative knowledge ecology (Turvey and Hayler, 2017) as they synthesise and make sense of a range of experiences from university-based lectures to school-based practice, as well as the preconceptions and biographical experiences they already hold. Such a conceptualisation, it is argued, affords a more culturally sustaining and responsive pedagogy of teacher education (Ladson-Billings, 1995; Paris, 2012), as I illustrate in the following reflection.

Reflecting on Omar's story of inclusion

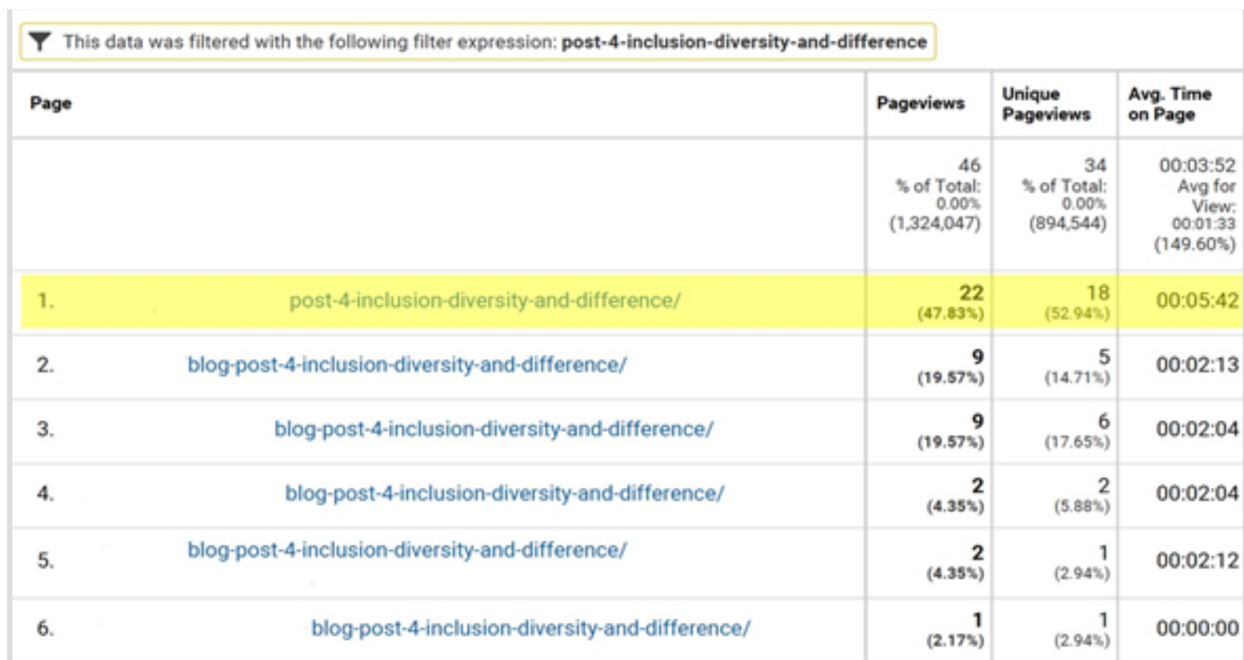
Omar is deaf, and at the time of writing was a student teacher enrolled on the module, Contemporary Issues in Teaching and Learning described hitherto. One of several blogging tasks, involved a critical reflection on inclusion, drawing on theoretical models of inclusion presented and discussed in university sessions, as well as student teachers' school-based and biographical experiences of inclusion. On reading Omar's blog, I recognised the rich social provenance (Cope and Kalantzis, 2016), offering significant insight into the complexity of inclusion, from a flashback to his own childhood experiences of inclusion and linking this to theory, as he writes in this short extract (Figure 2):

> Inclusion is also about removing barriers to learning – you might be missing out on social experiences because you are surrounded by support. Corbett (1996) argues that SEND children are deemed different to others and are being singled out. This child is not included in the whole class, often due to having a TA with them. This is emphasised by Trussler and Robinson's case study (2015, pp.6-7). When I was a child, no one wanted to play with me because I always had my Communication Support Worker with me. Other children had a stigma against having an adult around, and they generally left me alone.

Figure 2: Blog extract from student teacher Omar Farooq, 2017

On reading Omar's blog post, I emailed the whole cohort and recommended others should read it, because I believed the post offers fellow student teachers, valuable insights into how different theoretical models of inclusion may be operationalized and perceived in practice.

But what counts as evidence in making sense of this pedagogical episode? Analytics data available indicated increases in the number of page views for Omar's post but interestingly an increase also, in the average time spent reading the blog post in contrast to other blog posts (Figure 3).



This data was filtered with the following filter expression: **post-4-inclusion-diversity-and-difference**

Page		Pageviews	Unique Pageviews	Avg. Time on Page
		46 % of Total: 0.00% (1,324,047)	34 % of Total: 0.00% (894,544)	00:03:52 Avg for View: 00:01:33 (149.60%)
1.	post-4-inclusion-diversity-and-difference/	22 (47.83%)	18 (52.94%)	00:05:42
2.	blog-post-4-inclusion-diversity-and-difference/	9 (19.57%)	5 (14.71%)	00:02:13
3.	blog-post-4-inclusion-diversity-and-difference/	9 (19.57%)	6 (17.65%)	00:02:04
4.	blog-post-4-inclusion-diversity-and-difference/	2 (4.35%)	2 (5.88%)	00:02:04
5.	blog-post-4-inclusion-diversity-and-difference/	2 (4.35%)	1 (2.94%)	00:02:12
6.	blog-post-4-inclusion-diversity-and-difference/	1 (2.17%)	1 (2.94%)	00:00:00

Figure 3: Google Analytics data contrasting Omar's blog (1) with other students' blog posts (2, 3, 4, 5, 6).

Considered in isolation, the quantitative data might lend itself to an interpretation that my tutor strategy of recommending this blog post to the wider cohort, had a desirable impact. However, such an interpretation is partial at best, ignoring the qualitative nature of the blog post and its provenance. Whilst the tutor recommendation may well have prompted the initial increase in page views, the increase in time spent reading Omar's blog post was more likely an

outcome of its qualitative veracity. That is, the representation of Omar's experience and knowledge through the qualitative narrative of the blog post is significant and integral to any interpretation of this pedagogic episode. The qualitative nature of Omar's reflections, reaching back across decades to a powerful memory of how inclusion was manifest and experienced for him as a young deaf child, connecting this with contemporary and ongoing debates about inclusion, cannot be adequately reduced and captured quantitatively. Whilst the quantitative analytics can add to this rich narrative, the provenance of the narrative cannot be reduced to a purely quantitative representation.

Concluding discussion: holding datafication to account

Datafication – the increasingly automated translation and, in some cases, reduction of people's lived experiences into digital data points – is growing a pace. The systematic and automated use of data in the governance of education, Perrotta and Williamson argue, will merely inscribe the 'logic of economic rationality and accountability' (2018, 6). This paper makes an original contribution in setting out the importance of narrative in holding such dehumanising datafication of evidence to account. The interpretation of the learner or teacher as a 'data construct' is becoming increasingly embedded within systems of automation in education (Perrotta and Williamson, 2018, 5). The evaluation of teacher education is no exception. In the United States [US], The US Education Department (2016) published new regulations for teacher preparation programmes in which the effectiveness of teacher education is linked directly to the distant proxy of pupils' individual performance and value-added measures; that is, a secondary proxy. As Cochran-Smith et al (2016) highlight there is a mistaken assumption of a direct causal relationship between the implementation of such a thinly-evidenced policy and its potential to improve teacher quality and preparation. This is because, such policies and practises are devoid of the provenance that narrative can bring to evidence.

Innovation in education and teacher education was framed at the beginning of this paper, as the process of humanising evidence to be able to innovate responsively to diverse contexts. Stenhouse (1975) characterized teachers' making of pedagogical meaning as a process of creating stories of action in theories of context. As Goodson notes, only teachers can forge 'new alliances between theory and practice' (1999, 294). Despite the importance of narrative in enabling teachers to acquire greater agency, efficacy and voice in the process of pedagogical innovation, the Office for Standards in Education (Ofsted) in England recently reported on the evaluation of six new international models of lesson observation, which they are using to inform the review of the school inspection process (Ofsted, 2018). All of these models they suggest produce 'predominantly quantitative data', which they claim 'allows them to provide more detailed feedback to teachers that can go down to the level of individual items and indicators of teacher quality' (Ofsted, 2018, 6). The absence of a narrative about such quantitative data, and their claims to precision, based on such quantification, are troubling. But this is a growing phenomenon in teacher education reform globally. Increasingly we see the growth of algorithmic models of teacher education like the thinly-evidenced moves-based movement[2] who reduce teaching to a repertoire of often disconnected and un-theorised moves; not even stories of action, but often merely actions to be practised and performed by pre-service teachers. It would appear that, as in clinical practice (Greenhalgh, Howick, and Maskrey, 2014), there is an urgent need in teacher education and development, to reclaim the narrative of evidence, its adaptation, use and appropriation, if we are to avoid the further reduction, distortion and misappropriation of evidence. Narrative undoubtedly has an important role to play in both holding teacher education's technocratic developments to account but also, in giving voice to the humanistic, professional and responsive relationships that are at the heart of democratic education. Teacher education has a critical role in supporting teachers at all stages

[2] See, for example, Doug Lemov's various teacher moves http://teachlikeachampion.com/blog/honing-teacher-dance-moves/

of their career to develop and sustain the sensitivities they will need, to play their own role as 'worthy witnesses' (Paris and Winn, 2014, xvi) in the generation and use of data and evidence as part of a 'dialogic consciousness raising' endeavour and as an integral aspect to their own pedagogical practice. As this paper has explored, data and evidence can be both humanising or dehumanising. But, focusing on building the provenance of data and evidence as well as teachers' capacity to participate fully in this discourse, will become increasingly critical in sustaining the human and meaningful relationships required to add to the cumulation of teachers' pedagogical and professional knowledge, and the progress of teacher education.

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