Education and the Decadence of Technology[*]

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Abstract

There is a common belief in the field of Educational Technology that we are on the cusp of a radical transformation of education. Ironically, this belief can be traced back at least a century. Technologies are often presented as posing a radical challenge to outmoded forms of education – but even though the promise is of some hoped-for future, technologies for education are rarely made on the basis of any evidence of actual need, and often enact older ideas about pedagogy – meaning that they are, unfortunately, more likely to be conservative than transformative. In this paper, I will explore this issue by drawing on Lewis Gordon's work. First, I will review Gordon's concept of disciplinary decadence, and argue that it provides a useful way to understand this history of the technologies developed for and deployed in education. As can be seen in recent discussion of AI for education, for example, proposed futures rests on the subordination of contrary evidence alongside a 'technological fix' of reducing social concerns to tractable, technical problems. Then, turning to ideas from Science and Technology Studies, I will then explore how (in Latour's terms) critiques of educational technology have 'run out of steam'. In their place, I will argue that feminist theories of care can help resist disciplinary decadence through the development of a new, engaged agenda. I will end by proposing that researchers, educators and policy makers need to think differently about the design and use of new technologies for education, working with care to address issues of marginalisation and neglect, and resisting the technologies that fail to engage with these values.

Introduction

In this paper, I will review the history of how technology has been developed and used in education, and will argue that, if we want to learn from the past, we need to approach new technologies differently.

To argue this, first, I will review of Lewis Gordon's concept of disciplinary

decadence. Then, I will describe the history of technologies developed for education, placing this within wider traditions of technology critique. I propose that Gordon's idea of decadence helps to explain many of the longstanding issues that characterise the patterns that this account reveals.

However, simply revealing these issues is not enough; the radical work of critique has neither stopped these issues from resurfacing, nor helped to mitigate their effects. Instead, I will draw on feminist work on matters of care to propose how educators might reconsider their relationship with new technologies.

Disciplinary decadence

Lewis Gordon explored "what might at first appear to be quite mundane: the decaying tendencies in recent attitudes toward the study of human beings" (2006: 1). He describes his work as developing from his own experiences as an educator, working as a schoolteacher in the Bronx, including extensive work with in-school truants. Instead of them being the disengaged pupils he had been led to expect, he found high levels of engagement with *thinking*, discovering possibilities and meanings together in problems that were relevant to their lives. From this experience, engagement with the philosophy of education led him to professional philosophy, where he then worked with Africana philosophy and postcolonial phenomenology. Part of this work involved showing how the assumed centrality (or even universality) of Western philosophy and ethics creates a sense of severance from reality, allowing the pursuit of 'pure forms' while dismissing questions grounded in others' lived experience for their supposed nonphilosophical significance (Gordon, 2006: 57).

In particular, through his development of Fanon's work, he explored how the limits of established Western philosophy could be tested and revealed in relation to the experiences of 'problem people'. These he defined as people who disrupt the system because the system – which is assumed to work universally, because it works for those who created it – has positioned them as 'other', so that even the act of asserting their humanity contradicts the system and appears as a form of violence (Gordon, 2006: 40). His examples mainly concern African, African American, and Afro-Caribbean people, although he also discusses other racialised groups and politics of difference, including gendered differences. Gordon's work has also directly addressed the responsibilities of educators – although he remains deeply critical of much contemporary philosophy in general, and philosophy of education in particular (see, e.g., Gordon 2006:27-8).

The cultivated detachment Gordon observes in Western philosophy has resulted, he argues, in bad faith at the level of knowledge production – a lie to the self to hide from one's own freedom, in a move which denies social reality. This bad faith he refers to as 'disciplinary decadence'. His use of 'discipline', here, draws on Dewey, and specifically his conjoining of the etymological origins of the word – "to educate" – with both its development as epistemological or knowledge-producing models, and also with its contemporary meanings concerning power and control. This drawing together of meanings result in Dewey "setting the framework for discipline and power to meet in a revelation of the unfolding self through a process of what he calls "inquiry" or critical thought that makes a difference in the world" (Gordon, 2006:4).

Through the concept of disciplinary decadence, Gordon explored the apparent disengagement of academic disciplines from peoples' lived experiences, as they retreated instead to naturalism, to historicism, or to language itself. He links this pattern of disengagement and retreat to the triumph of *asserted belief* over engagement with evidence, a tactic used to insulate people (particularly people operating in public, such as politicians) from the possibility of being wrong. By 'evidence', here, he means something specific – "evidence is a form of understanding. It is not simply the case that something advanced as evidence is evidence. It must be understood as such, which means that it must be put through a process of critical inquiry, a process that requires thinking" (p32). Further, he argues, "to think, really to think, is to engage the frightening evidence of our own conceptual limitations and to realize, in such limits, the magnitude of all that transcends us" (p33). Engagement with evidence therefore requires the courage to risk being proved wrong; "thinking requires facing the perils of reality" (p6).

The consequence of disengagement from evidence, he argues, is a turning away from this challenging reality, and also from a sense of a shared public space, so that "The […] world […] is reduced to a stalemate of subjectivities, and we such notions as truth and fact collapse into opinions and perspectives" (p6). We see such concerns echoed in discussions about lies, 'post-truth' politics, information literacy and the prevalence of 'bullshit' – assertions that have no concerns for the truth or falsity of what is said, only the rhetorical space that is created by performing the assertion (MacKenzie & Bhatt, 2020).

Gordon's analysis explored the consequences of such disengagement, including the decay that follows from this avoidance of challenge. In the absence of opposition, disciplinary practitioners can fall into a self-con-

gratulatory isolation, avoiding accountability, losing sight of their distinctive project of understanding the world in specific ways, and collapsing into the hubris of acting as if their account *is* the world, criticising (in a totalising manner) not only lived experiences, but also other disciplines, for not meeting whatever standards or processes are peculiar to their area of work.

> Failure to appreciate reality sometimes takes the form of recoiling from it. An inward path of disciplinary solitude eventually leads to what I call disciplinary decadence. This is the phenomenon of turning away from living thought, which engages reality and recognises its own limitations. […] The discipline becomes, in solipsistic fashion, the world. And in that world, the main concern is the proper administering of its rules, regulations, or, as Fanon argued, (self-devouring) methods. (Gordon, 2014: 86)

In the remainder of this paper, I will explore the relevance of Gordon's thinking to questions of education, and in particular to the way that the introduction of technology has shaped the development of educational practice. In order to do this, however, I will first provide an introduction to the kinds of rhetoric that have come to characterize the introduction of technology to education.

Education, technology and the (perpetual) promise of transformation

Having laid out elements of Gordon's work, I turn now to a context where these ideas can offer a constructive challenge: the field of educational technology. This field is strongly influenced by traditions of cognitive science via instructional design, but also draws on work from education, social science, psychology, linguistics and other disciplines (Czerniewicz, 2010). However, it is also strongly influenced by technology development, although the fluency with which researchers discuss technology lags far behind the sophistication with which education itself has been theorised (Oliver, 2013). By characterising a recurrent problem in this field, and the limits of technology critique in the section that follows, I argue that the field of educational technology has succumbed to disciplinary decadence, and requires challenging.

There is a longstanding lament in educational technology that we have failed to learn lessons from the past.

> Education is on the brink of being transformed through technol-

ogy; however, it has been on that brink for some decades now. (Laurillard, 2008)

This quote – taken from Laurillard's inaugural professorial lecture – signals in a playful way the sense of anticipation and promise that seems to accompany each and every emerging technology as it is introduced into educational practice. What is unfortunate about this observation is that this was not the first nor the last time it has been made. Mayes, for example, made the same point 30 years ago, comparing his experience of working in the field of educational technology to that of the protagonist in the film, "Groundhog Day", who is forced to relive the experiences of a single day over and over again.

> People who have been involved over any length of time with educational technology will recognise this experience, which seems characterised by a cyclical failure to learn from the past. We are frequently excited by the promise of a revolution in education, through the implementation of technology. We have the technology today, and tomorrow we confidently expect to see the widespread effects of its implementation. Yet, curiously, tomorrow never comes. We can point to several previous cycles of high expectation about an emerging technology, followed by proportionate disappointment, with radio, film, television, teaching machines and artificial intelligence. (Mayes, 1995)

It is striking that this list ends with artificial intelligence, which has enjoyed a recent resurgence of interest following the release of the ChatGPT chatbot in November 2022. Mayes' comments are further amplified by Cuban, a historian of education. Cuban traces such discussions back at least a century, to the introduction of film and radio. He notes, for example,

> Thomas Edison's enthusiasm for films began earlier than the 1922 quote that begins this chapter. "Books will soon be obsolete in the schools," he said in 1913. "Scholars will soon be instructed through the eye. It is possible to touch every branch of human knowledge with the motion picture". (Cuban, 1986: 11)

This was far from being an isolated example. Discussions of automation as a solution to teachers' workloads, for example, can be traced back to Pressey's Automatic Teacher in the 1930's (Petrina, 2004). What is surprising, however, is that these historical precedents are so rarely discussed in relation to contemporary developments.

In spite – or perhaps because – of a century of repetition, this pattern of hype, hope and disappointment has become so strongly associated with the adoption of technology, and with the introduction of new technologies into education in particular, that it is unironically represented as a necessary component of what Gartner describes as the 'hype cycle'. In this model of technology adoption, after a new technology is introduced (an initial "trigger" event), there are inflated expectations followed by "the trough of disillusionment", out of which (through 'enlightenment') persistent users may eventually reach the "plateau of productivity". It is hard to imagine how such a model can be viewed with excitement rather than fatalism, but this does not stop annual updates being issued and widely read.

One possible explanation is that failing to learn from the past is no accident, but is actively achieved by a focus on novelty. Chan (2019) has explored how, as part of the process of creating a desired future that we can move towards, problematic pasts are "disremembered": failures are allowed to be forgotten through silences and omissions, freeing narratives from doubt, and instead conjuring and sustaining a sense of belief in this next promised future. Within this process, an important role is played by "the temporal function of hype and its game-like character: that hype has to overtly oversell the future in order to generate the present to be readied for its making" (p172).

The parallels here between the future-creating work of hype and the rhetorical openings created by evidence-free, performative 'bullshit' are self-evident.

> Neither yet the truth nor exactly a "lie," hype stretches toward the ambition of a reality it still can only claim to work toward constituting—a reality that exists in other words as much as fantasy as actual possibility. It thus acts all the while to pre-empt the potential for failure in the present by fortifying the discursive grounds on which reality in the future will unfold, using a range of devices and techniques— from educational to tech industry conferences, reports and publications, new channels, and the good will of the audiences and publics they each hail—in order to do so. All this in an effort to register credibility and truth effects for such varied publics. However immaterial they might be, collective faith and belief turn out to be quite bankable investments in venture ed's ecologies of hype, and the work of securing the futures they seek to bring about. (Chan, 2019:170-1)

Nevertheless, the persistence of these cycles of hype should not be taken to signify a lack of critique or challenge – only its inability to check the creation of newly desirable futures. In the next section, such critical work will be reviewed, and connections drawn to Gordon's concerns around evidence and decadence.

Technological decadence

How can it be that these cycles have continued for so long? Answering this requires setting this pattern within a broader context.

Gordon suggests that field-transcending evidence can help avoid or overcome disciplinary decadence. Given this, Czerniewicz's characterisation of educational technology as a meeting of diverse disciplinary influences might suggest that it would be well placed to sustain thinking, in the sense of challenging engagement with evidence. Unfortunately, it is not the ongoing challenge of different disciplines that drives these cycles, but the novelty of technology instead. With that in mind, I will argue that – while 'technology' might not, conventionally, be considered a discipline – it is operating here as if it is one.

As outlined above, Gordon defines 'disciplines' as operating as a form of education; as epistemological or knowledge-producing models; and as exercises of power and control. There are many ways in which technology acts as a form of education – from the mediating way in which we learn to engage with the world through the technologies we encounter (Ihde, 1990), to the ways in which users are 'configured' until they are suited to the needs of technologies (Woolgar, 1990), to transnational competence frameworks that set expectations for citizens (Ferrari & Punie, 2013), to the mundane work of troubleshooting that co-opts us as labourers learning to attend to the needs of the technologies we use (Wu, 2022).

The other disciplinary characteristics of technology, its epistemic and power effects, can be made visible by discussions in the philosophy of technology.

While some trace critical engagements with technology as far as Plato's suspicions of writing, contemporary discussions typically build upon Heidegger's *question concerning technology* (1977). This work, together with related ideas (see Heidegger, 1962) about technology being invisible to us ("ready-to-hand") until it breaks or fails ("present-at-hand"), provides a foundation that has shaped much of the philosophy of technology, and

technology critique, over the last 50 years.

For Heidegger, the threat posed by technology was not to do with its materiality, but instead to do with what he called 'enframing': the way in which modern technology changes our relationship to the world.

> Where do we find ourselves brought to, if now we think one step further regarding what Enframing itself actually is? It is nothing technological, nothing on the order of a machine. It is the way in which the real reveals itself as standing-reserve. (Heidegger, 1977)

Here, the idea of a standing-reserve describes the way in which modern technology reduces the world to materials that can be used in the production process. This 'enframing' diminishes the way in which the world is revealed to us. In Gordon's terms, this has epistemic consequences. The change in the way the world is revealed necessarily alters how we know it; technology therefore constitutes a new knowledge-producing model.

It also illustrates technology's operation of power and control, the final feature of disciplines. The logic of enframing is efficiency, which is exercised through the power of technology and its control of the standing-reserve needed for production. Heidegger explicitly includes within this the way technology treats people themselves as resources to be used efficiently (e.g. through their labour) in processes of production.

Having analysed technology in ways that, I argue, meet Gordon's three characteristics of a discipline, we can now turn to how technology has been critiqued. Central to this is risk of decadence that Heidegger argues comes with modern technology, a consequence of placing the person in control of the technology outside of and above the world.

> As soon as what is unconcealed no longer concerns man even as object, but does so, rather, exclusively as standing-reserve, and man in the midst of objectlessness is nothing but the orderer of the standing-reserve, then he comes to the very brink of it precipitous fall; that is, he comes to the point where he himself will have to be taken as standing-reserve. Meanwhile man, precisely as the one so threatened, exalts himself to the posture of lord of the earth. (Heidegger, 1977)

Although this critique of the mediating qualities of technologies is important, it has to approached with caution. The reason for this caution is

that Heidegger's critique can *itself* be understood as a matter of bad faith. Central ideas in his work rest on his romanticisation of German rural life, which he sought to normalise as a universal standard against which other experiences should be judged. His valorisation of race, soil and blood of an aristocratic, White European elite was set in contrast to his antisemitic characterisation of Jewish people in terms of empty rationality, calculative ability and a predisposition to criminality. As his Black Notebooks show, this antisemitism was not merely a posture adopted in order to endure under Nazi rule, but a lifelong part of his thinking (Wolin, 2023). In Gordon's terms, the decadence of his analysis can be seen in the way that the system he develops locates the work of 'problem people' as 'other'. For example, concerns about atomic physics are clearly in part about dominion and destruction, but cannot be separated from his mistrust of Einstein's work as "Jewish science".

The consequences of this prejudice can be traced through his discussion of technology, for example in his valorisation of the craft workshop over industrial production (see, e.g., Ihde, 1990: 33; Latour, 2004). As a consequence, he is dismissive of many technologies that form meaningful parts of peoples' lives – although he is not alone in this; other philosophers similarly succumb to universalizing their individual experiences in totalizing ways, such as Borgman's preoccupation with technologies that differentiated the lives of middle- and working-class Americans (1984). The result of this is a double risk of decadence: within educational technology as a practice, due to the turning away from reality that characterises technology development; and in critiques of this, which risk building on bad faith.

The question may arise about whether his work can be avoided altogether, given these issues. However, the foundational role it has played in discussions of technology is hard to deny. Sometimes it is necessary to name and even cite problematic authors in order to question their legacy and challenge their ongoing influence (see, e.g., Ahmed's engagement with Bentham's work, 2019).

In spite of these concerns, his insight that we should be sceptical about technology's potential to make things (such as education) more efficient remains important. Fortunately, this idea has been developed by other philosophers in ways that detach it from its racist origins. Ihde (1990), for example, worked explicitly to consider a diversity of cultures; and elements of the Frankfurt School, such as Feenberg's Critical Theory of technology (1999), have foregrounded the importance of more democratic and inclusive forms of engagement in the design and deployment of tech-

nologies. These ideas about engaging other people and values have been brought into conversation with educational philosophy by authors such as Friesen (2009).

The persistence of these ideas, and the need to acknowledge Heidegger's legacy, partly reflects that they remain useful in challenging the technological determinism that characterises most research in educational technology (Oliver, 2011), as well as much policy and developers' rhetoric. This widespread belief is closely linked to the cycles of hype described earlier, providing a rationale that would justify hope in the improving power of each new technology that arises.

> Faith in progress has been supported for generations by two widely held deterministic beliefs: that technical necessity dictates the path of development, and that that path is discovered through the pursuit of efficiency. […] Determinism […] makes it seem as though the end of the story were inevitable from the very beginning. It projects the abstract technical logic of the finished object back into its origins as a cause of development, confounding our understanding of the past and stifling the imagination of a different future. (Feenberg, 1999: 78, 81)

This idea was given a name by Alvin Weinberg, who advocated for the idea that engineers should be entrusted with the project of improving society through the creation of new technologies. He called this the 'technological fix'.

> To what extent can technological remedies be found for social problems without first having to remove the causes of the problem? It is in this sense that I ask, "Can technology replace social engineering?" (Weinberg, 1967)

Weinberg believed the answer was a clear yes, on the grounds that technologies were easier to change than people.

> The Technological Fix accepts man's intrinsic shortcomings and circumvents them or capitalizes on them for socially useful ends. The Fix is, therefore, eminently practical and, in the short term, relatively effective. One does not wait around trying to change people's minds: […] if people insist on driving autos while they are drunk, one provides safer autos that prevent injuries even after a severe accident. (Weinberg, 1967)

However, the concession in his explanation that this would work 'in the short term' is telling. The idea that engineering approaches might prove superior to social solutions became increasingly contentious (Johnston, 2018). What Weinberg's own examples illustrate is the way in which the short-term benefits were often brought about by mitigating the symptoms of the problem, rather than dealing with its underlying causes. In some cases, of course, mitigating symptoms is important – for example, when matters will improve themselves over time, or when things are in such terminal decline that nothing can be done anyway. However, in many cases, mitigating the symptoms merely diminished the apparent importance of the underlying problem, reducing the sense of urgency in dealing with it. Whether by delaying any real solution or normalizing a problematic situation, when viewed from beyond the short-term mitigation of symptoms, technological fixes can simply compound the problems that they are intended to address, deepening the underlying crisis. Such a pattern forms part of what Tenner (1997) calls "revenge effects".

Nevertheless, this pattern of separating out short-term mitigations from longer-term harms can be understood as driving the hype cycle described earlier. Once this idea was established, by the time that problems with a new technology become apparent, a new technology can be positioned to mitigate those harms, and so on. The consequence of this has been the persistent gap between the initial 'inflated expectations' and subsequent 'trough of disillusionment' described in Gartner's hype cycle that characterize so many experiences with new technologies.

It is all too easy to find examples of deterministic language and technological fixes across discussions of technology in all areas, education included. A particularly egregious recent example that neatly illustrates some of the problems with this way of thinking is Marc Andreessen's techno-optimist manifesto (2023):

> Technology is the glory of human ambition and achievement, the spearhead of progress, and the realization of our potential. […]

> We believe that there is no material problem – whether created by nature or by technology – that cannot be solved with more technology.

> We had a problem of starvation, so we invented the Green Revolution. We had a problem of darkness, so we invented electric lighting. We had a problem of cold, so we invented indoor heating. We had a problem of heat, so we invented air conditioning.

> We had a problem of isolation, so we invented the Internet. We had a problem of pandemics, so we invented vaccines. We have a problem of poverty, so we invent technology to create abundance.
>
> Give us a real world problem, and we can invent technology that will solve it. (Andreessen, 2023)

One category of problems with these claims is that most of them are simply wrong. Global poverty has been accentuated by technology, with the gap between the richest and the majority widening each year – with many in the richest 1% concentrating their wealth through technology platforms. Vaccines were certainly important during the last pandemic, but were not available to many who needed them, shaping fatalities along national and racial lines. Careful scholarship has undermined the Malthusian logic that population growth resulted in starvation, and argued instead that starvation is the result of overproduction and unfair politics of distribution; the effects of the Green Revolution were instead to end crop diversity and create global dependencies on businesses that have contributed to environmental harms (Stone, 2022).

The second category of problems is that the consequences of these inventions are unconsidered. As Stone's analysis of the Green Revolution indicates, there are often unanticipated consequences to technologies – some of which can be disastrous (Tenner, 1997). What the techno-optimist manifesto ignores are the many problems that follow from these inventions, or which are necessary to maintain their existence. For example, there is now extensive evidence of the harms caused by biases built into technical systems that reflect – and amplify – racist decision making, not only in recent technologies such as decision-making algorithms (Benjamin, 2019), including educational algorithms (Eynon, 2023) but also in older technologies such as the bridges Robert Moses built that kept Black families travelling by bus in America away from beaches favoured by the White elite (Winner, 1980). We know that the companies that developed vital Covid vaccines used patent laws to protect their intellectual property rather than allowing them to save more lives by produced in lower income countries until pressure from countries like India and South Africa (see Usher, 2020) led the World Trade Organisation to enforce a TRIPS waiver. We can see the ongoing costs of technology in the invisible, poorly paid labour of tagging, cleaning and censoring content, which largely undertaken for companies in the US by people in India, that makes AI and social media platforms work (Gray & Suri, 2020). And we can see across these examples

and many others how the harms of new technologies are usually discovered by trying them out on the poor and marginalized, but only addressed when they affect the already privileged (Eubanks, 2017).

However, the wrongness of these claims may not matter rhetorically, if the purpose is not establishing truth but opening the possibility for a particular future. This illustrates how, although 'technology' may not normally be understood as a discipline, the pattern described here bears all the hallmarks of the kind of solipsistic, totalizing and disengaged rhetoric Gordon described as disciplinary decadence. The example above illustrates vividly, in its "we had… we invented…" formulation, what Gordon refers to as a failure to think:

> When simply the performance of presenting evidence substitutes for evidence, then anything can count as evidence. We see this in scholarly texts where the authors announce the importance of looking at a subject and then later argue as though that announcement itself constituted its examination. We also see it in cases where pronouncements of past failures of certain social remedies take the form of perennial truths. […] Evidence is a form of understanding. It is not simply the case that something advanced as evidence is evidence. It must be understood as such, which means that it must be put through a process of critical inquiry, a process that requires thinking. (Gordon, 2003: 18, 20)

Arguably, however, it would be a mistake to attribute this lack of thinking to stupidity. Gordon discusses 'bad faith' at the level of knowledge production (p17), constituted through both a lie to the self that seeks to transcend doubt and so treat beliefs as truths (p39), and through this, a denial of social reality (p18). However, as discussions of 'enchanted determinism' in the context of AI have suggested, this kind of bad faith also creates political as well as personal consequences.

> We term this ensemble enchanted determinism: a discourse that presents deep learning techniques as magical, outside the scope of present scientific knowledge, yet also deterministic. […] These systems become deterministic when they are deployed unilaterally in critical social areas, from healthcare to the criminal justice system, creating ever more granular distinctions, relations, and hierarchies that are outside of political or civic processes, with consequences that even their designers may not fully understand or control. […] The application of these systems threatens not

> only legal due process (Citron and Pasquale 2014) but also more expansive forms of political contestation, and social agency, while simultaneously distancing AI designers and the corporations that employ them from ethical responsibility and legal liability. (Campolo & Crawford, 2020: 3)

The reason for including this excerpt in full is that it complements Gordon's analysis so neatly, tracing the consequences of the bad faith of avoiding thinking. Specifically, such magical thinking has political consequences, excusing them from the responsibilities that might engage them with society, and excusing them from the harms that follow from the development and promotion of their technologies. What Campolo & Crawford illustrate is how the 'turning away' from reality is not only comfortable, but also expedient, for technology developers. Again, it is important to place this in a wider historical context. While current discussions of AI use this rhetoric, it is not new; it was always an intended consequence of the way in which Weinberg conceived of the technological fix.

> Weinberg's hopes […] suggested long-term technological interventions that bypassed sociological approaches, public education, political negotiation, and indeed religious and moral teachings. [He] hinted at a further quality of cheap technological fixes: they might work best when shifting power toward technologist problem-solvers and away from more culturally bound recipients. (Johnston, 2018: 631)

When critique runs out of steam

Having described historic patterns of development in educational technology, argued that technology can be treated as a discipline, and shown how the decadence of technology development and use has been visible for at least 50 years, it is hard to avoid confronting a difficult question. If critique has revealed all of this, across such a long period, why do we still need to talk about it?

To answer this, I will draw on Latour's essay (2004), "Why has critique run out of steam?" In it, he laments the way in which his critical project, intended to engage people with naturalized scientific facts, had been co-opted by conspiracists or by conservatives to maintain artificial controversies around controversies like climate change.

In an argument that has many parallels with Gordon's account of disci-

plinary decadence, Latour describes what he calls 'critical barbarity': the self-serving and disrespectful way in which critics dismiss peoples' beliefs and experiences, celebrating their own disciplinary virtuosity by using it to dismiss and disengage from what others experience as reality.

> When naïve believers are clinging forcefully to their objects, claiming that they are made to do things because of their gods, their poetry, their cherished objects, you can turn all of those attachments into so many fetishes and humiliate all the believers […, then] you strike them by a second uppercut and humiliate them again, this time by showing that, whatever they think, their behavior is entirely determined by the action of powerful causalities coming from objective reality they don't see, but that you, yes you, the never sleeping critic, alone can see. […] The Zeus of Critique rules absolutely, to be sure, but over a desert. (Latour, 2004: 239)

Again, like Gordon, he rails against this tendency by calling for a new kind of engagement with evidence:

> My argument is that a certain form of critical spirit has sent us down the wrong path, encouraging us to fight the wrong enemies and, worst of all, to be considered as friends by the wrong sort of allies because of a little mistake in the definition of its main target. The question was never to get away from facts but closer to them, not fighting empiricism but, on the contrary, renewing empiricism. (Latour, 2004: 231)

Gordon calls for disciplines to open themselves to their limits and treat problems as interdisciplinary, beyond the grasp (and therefore limits) of any single method. Latour takes a different path, arguing for a move from 'matters of fact' (claims that are criticized in terms of the social and material conditions that made them possible) to 'matters of concern' (things, which gather around them people to whom the things matter, as well as the conditions of their possibility). Such a move, Latour proposes, would help shift the focus away from deconstruction (centering power with the critic) and instead towards "generating more ideas than we have received, inheriting from a prestigious critical tradition but not letting it die away" (Latour, 2004: 248).

Although this proposal is appealing, arguably it does not go far enough. An example drawn from Cuban's history of educational technology helps to explain why. His account of the growing market in educational technol-

ogy, and lack of associated evidence for any benefits, led him to conclude that:

> To educators dependent on voters and taxpayers for funds and political legitimacy, it often matters little whether the new technology is costly and fully tested to do what vendors and promoters say it can do. Pressed by parents, business leaders, public officials, and computer vendors, few school boards and administrators can resist the tidal wave of opinion in favor of electronic solutions to education's age-old problems. The questions asked are seldom whether to move ahead with new technologies but how, under what conditions, and to what degree. (Cuban, 2001: 192)

Treating investment in a new technology for education as a matter of concern may reveal the varied interests that people have in this situation (even if students themselves remain spoken for by parents and teachers by administrators), and also the operations of power in the ways such decisions are enacted, but this analysis remains a revelation rather than a movement. While Latour called for forms of critique that *strengthen* a thing's claim to reality instead of weakening it, his essay focuses on making the case for such interventions, rather than explaining how they should happen or, indeed, when they do happen, in what directions things should be strengthened. In a situation such as the investment decision Cuban describes, where critique has shown for decades that new technologies might at best provide some temporary mitigation of the symptoms of educational problems, what if anything motivates the choice that educational forms of good should be strengthened, rather than (say) economic, political or even rhetorical goods?

Latour's gesture is to turn to Haraway, and her work on care. While this gesture is only the briefest of indications in his essay, his proposal has been taken up by de la Bellacasa, who developed Latour's concept from 'matters of concern' into 'matters of care' (2011). As she observes, care and its politics are a longstanding concern of feminist thinking, which offers resources with which to explore "the staging of the life of objectified things, their ethico-political representation, and the disempowering affective effects of disrespectful critique" (p92). Drawing on Tronto & Fisher's political arguments for an ethic of care, she argues that "from this perspective to care signifies: an affective state, a material vital doing, and an ethico-political obligation" (de la Bellacasa, 2011: 90). The initial analytic step follows Latour, creating a description of the gathering that forms around

some matter of concern, but the obligation to act "aims to add something to matters of fact/concern with the intention of not only respecting them, but of engaging with their becoming" (de la Bellacasa, 2011: 100). This orientation to the becoming of things is expressed in terms of speculative ethics, refusing to let existing situations or positions determine what could be, working instead to make possible new, more desirable futures.

> Representing matters of fact and sociotechnical assemblages as matters of care is to intervene in the articulation of ethically and politically demanding issues. The point is not only to expose or reveal invisible labours of care, but also to generate care. In strongly stratified technoscientific worlds, erased concerns do not just become visible by following the articulate and assembled concerns composing a thing, nor does generating care happen by counting the participants present in an issue. In the perspective proposed here, generating care means counting in participants and issues who have not managed or are not likely to succeed in articulating their concerns, or whose modes of articulation indicate a politics that is 'imperceptible' within prevalent ways of understanding. (de la Bellacasa, 2011: 94-5)

The feminist commitment to attend to excluded, under-represented or otherwise marginalised positions addresses the question raised earlier, about which kind of strengthening should follow from descriptive analysis. This commitment has political consequences for the enactment of social justice, of course, but it also has consequences for the knowledge produced through this kind of engagement in the world. As noted earlier, Gordon took a particular interest in the experiences of 'problem people', whose lives are positioned as outside of the supposedly universal systems designed by and working for those with privilege. de la Bellacasa, drawing on feminist theory, makes a similar move by working with standpoint epistemologies, including Haraway's discussion of situated knowledges, and Harding's arguments for 'strong objectivity' (2012). Harding argues that the assumed universality of dominant experiences masks that privileged positions are also situated sites of knowledge (the "God trick"); and that this both limits what science can explore and also masks other situated ways of knowing too. These obscured alternatives consequently receive little attention, and so provide rich opportunities for valuable questions to be asked. This redefines 'objectivity': simply starting from the interests of those who are advantaged and using 'objective' methods is not strong enough; it fails to hear, let alone answer, the critical questions of those who have been marginalized.

> This is because the experience and lives of marginalized peoples, as they understand them, provide particularly significant problems to be explained or research agendas. These experiences and lives have been devalued or ignored as a source of objectivity-maximizing questions—the answers to which are not necessarily to be found in those experiences or lives but else where in the beliefs and activities of people at the center who make policies and engage in social practices that shape marginal lives. So one's social situation enables and sets limits on what one can know; some social situations—critically unexamined dominant ones—are more limiting than others in this respect; and what makes these situations more limiting is their inability to generate the most critical questions about received belief. (Harding, 1995: 443)

The consistency with Gordon's position is clear, even if Gordon does not connect his discussion of philosophy to standpoint epistemologies.

> There is irony here. For it is because of the presumed universality of Western philosophy that many Western philosophers fail to see their particularity. Conversely, it is because of their recognition of their particularity that African philosophers often articulate universal dimensions of the human condition. They tend to articulate how and what people really are. (Gordon, 2004: 57)

The feminist commitment to standpoint epistemologies is what motivates de la Bellacasa's commitment to focus on neglected things as matters of care. Revealing existing interests alone provides no way to select the positions best placed to generate objectivity-maximizing questions. That requires attending to marginalized experiences.

The approach de la Bellacasa has developed (2012) also constitutes a way of thinking-with, creating new relationships (including with the researcher, which demands a reflexive awareness of the politics of the research we do and the way in which we do it), and intervenes in the world by adding layers of meaning rather than questioning or conforming to ready-made categories. The commitment to care, to entering into a relationship with the things that we as researchers choose to study, not only requires us to engage with evidence – to think, in Gordon's terms – but to *living-with* these matters of care. It challenges us to avoid forms of *thinking-for* that involve appointing ourselves as spokespersons for the marginalized or fetishizing the experiences of 'the marginal' – while recognising that we can, by virtue of the privilege of being able to undertake research, sometimes

act as witnesses or even spokespersons for oppressed 'others'.

Responsible (response-able) educational futures

If the development of technology and its adoption in education can be described as decadent, and critique has run out of steam, but care may offer resources for new forms of engagement, what new futures might we be able to create with them?

Education constituted a specific area of interest for Gordon, not least because his experiences of teaching motivated his engagement with philosophy. However, he also believed that educators had a distinctive responsibility to embody ways of knowing that resist disciplinary decadence by engaging thoughtfully with evidence from others' lives.

> Whether we like it or not, educators today find themselves in a situation as custodians of both academic and political nutrition. The intensification of the assault on public life means continued attack on the institutions whose purpose it is to cultivate that life. That means those institutions face responsibilities as they have not before. In the past, there was room for words and deeds to stand apart, but in our world, the world of the educator, words and deeds are one. It should be clear by now that overcoming disciplinary decadence and its correlate ignoring of field-transcending evidence is linked to a vital commitment by knowledge producers and counselors, which, in effect, many of us are, and that commitment is to freedom and truth conjoined in the project of constructing our species' self-understanding and collective aspirations. (Gordon, 2003: 21)

As an illustration, Bozalek et al (2018) proposed treating teaching as a matter of care through the development of 'response-able' pedagogy. Drawing on ideas from Tronto, Haraway and Barad, they characterise this in terms of attentiveness and responsibility, which together constitute a praxis of care and response (Haraway's 'response-ability'). Attentiveness involves being present and open towards the 'other', whether that other is human, non-human or the other in oneself. This openness is relational, leading to a co-constitution or becoming-with the other, rather than a focus on self or the other in a binary manner, and such relationships need to be made possible through the creation of material spaces that enable intra-actions and conversations to happen. Responsibility means:

> …attending to ethico-onto-epistemological issues in our teaching which involves more than being accountable for what we and our students know. It involves how we get to know, what we do and help enact, what commitments we take on for what exists and our entangled relations of inheritance (Barad 2007). In other words, a responsible pedagogy showcases how we are actively learning-with, doing-with, making-with, and becoming-with each other tied together in sympoiesis as teachers and students, and matter. (Bozalek et al, 2018: 107)

As a further illustration, turning to the technologies developed for education, we might avoid decadence through thoughtful engagement with evidence about what teachers and learners actually need. This might require us to be active in resisting the short-term fixes that mask underlying, ongoing educational harms, pursuing instead the speculative commitment to explore a wider range of preferable futures, ones that address rather than reproduce inequalities and injustices (see, e.g., Macgilchrist, 2021; Ross, 2022; Henry & Oliver, 2022; Eynon, 2023). For example, we could think about what evidence there really is for the possibility that we can 'fix' the problem of teachers' workloads through automation. The very fact that this concern has endured for about a century (Petrina, 2004) provides evidence that the promised good (freeing teachers' time for more creative work) has consistently failed to materialise. Instead, this pursuit has resulted in a growing focus on individualised testing, arising from moves to standardise educational practices and inscribe routines (because variable and unpredictable processes are challenging to automate). This might create a more efficient system, but is also – in what Tenner might describe as a revenge effect – leads after the initial novelty to the consequent disengagement of learners, and compounds this by adding new harms, such as subjecting learners to the extraction of data that can subsequently be used by technological companies to profile them for other ends (Watters, 2023).

Resisting this kind of future requires understanding the disciplinary character of technology, so that its decadence can be resisted. In this example, the move to automate through the introduction of technology acts as a form of 'hidden curriculum', through the assumed relationships and values that have been built into our technologies (Gallagher & Breines, 2023; Eynon, 2024). Returning to Heidegger's idea of enframing, technology has inculcated a way of thinking about education as the efficient processing of a 'standing reserve' of learners. The advocacy for technology has inculcated a techno-logic: a way of thinking about education as if it were a

technology, inviting it to be optimised. There are, however, other ways in which we can think about education. Using de la Bellacasa's formulation of matters of care as a resource for speculation, we might ask instead which 'others' are gathered in these educational matters of concern, which have been made marginal, and how their interests can be strengthened. What learners are excluded by such systems, and which experiences go unrecognised? In a situation characterised by logics of efficiency, in which responsibility for knowing learners is increasingly delegated to automated systems, speculative ethics may involve working towards futures that are less efficient, but which provide richer opportunities for teachers becoming-with learners.

As Watters notes (2023), working towards less efficient but more needed futures might demand resistance, or even refusal, of expectations that we will adopt, conform to the needs of technology, or (as Wu, 2022, notes) even just keep labouring to troubleshoot the new technologies we are provided with. The politics of care become readily apparent in such situations, emphasising that 'to care' is a challenge, not a comfort. As a result, a caring approach may prove more disruptive to visions of education than the adoption of any new technology that is built on the same old logic of efficiency and individual surveillance (even when called 'personalisation'). Instead of following the path of least resistance by adopting new technologies as they arise, the choice of which technologies might we allow, or indeed demand to be developed, should follow instead from the engagement of teachers in the lives and needs of their learners.

Thinking with care about what teachers and learners need offers an alternative to pursuing the same decadent cycles of hope and disappointment that have characterised educational uses of technology. Rather than orienting to the needs of technologies, it offers the speculative challenge to ask what technologies we might have that would maximise our attentiveness as educators to the needs of our learners, and which technologies might sustain or open up new, needed possibilities for making-with and becoming-with our learners.

In doing so, however, we need to keep in mind the warnings of standpoint epistemology. While we might understand learners' needs by listening to them, and can act as a witness, we should resist the urge to appoint ourselves as spokespersons for them. If their participation is to be honoured in the design of better futures, we need to think about who gets to frame projects, what forms participation will take, what meaningful alternatives are engaged with, and how any process of design remains accountable

locally (Bardzell, 2018).

Conclusions

Gordon's idea of disciplinary decadence describes his observation that much academic work has disengaged from the world, disregarding the challenges of evidence in order to pursue an increasingly performative, self-serving game where the purity of rules, regulations or methods substitutes for truth, understanding or knowledge. I have argued here that educational technology risks such decadence, both because of the disciplinary effects of the rhetoric of technology development, and also because critique has fallen short of changing this pattern.

While 'technology' may not conventionally be considered a discipline, I have argued that the way in which it has been discussed over the last 60 years frame it as possessing the qualities of a discipline (it educates; it operates a specific form of epistemological or knowledge-producing model; it enacts power and control). Across this period, robust and extensive critiques of technology have been developed; there is no shortage of philosophical, sociological or educational challenge to the assumptions that have motivated cycle after cycle of technological hype. And yet the cycles continue.

Within the field of Science and Technology Studies, Latour also railed against the way the project of critique had been co-opted by conspiracists and conservatives, proposing appreciative engagement with things as matters of concern that gathered interested groups around them. This idea has been developed by feminist scholars in Science and Technology Studies, particularly in de la Bellacasa's formulation of matters of care, which added to Latour's political gathering the obligation to create better futures through speculative engagements with neglected things. Like Gordon's challenge to think about the experiences of 'problem people' as challenges to the assumed universality of the systems that have failed them, de la Bellacasa draws on Harding's commitments to strong objectivity within standpoint epistemology to propose that we can develop better questions, and better futures, by working in material ways with marginalised perspectives and issues.

Bringing this back to education, we can see examples in things such as Bozalek et al's pedagogy of response-ability (2018) how such commitments to care can be enacted pedagogically, and in questioning personalisation, how they can form the basis for technological resistance. These

kinds of work constitute a challenge to the technologies that we are so frequently promised will disrupt or transform education. We do not need another technological fix that seeks to liberate teachers from meaningful engagement in which they commit to learning-with and becoming-with students, through the deployment automated surveillance, individualised profiling (which will probably then be owned by the technology developers) and faster delivery of more content. Instead, we need to pursue other forms of good than technological efficiency – ones that teachers and learners recognise as being good, not ones that have been selected for them by some self-appointed spokesperson.

This move has implications not only for pedagogic practices, but also for research. It shows the need for an engaged programme for research in educational technology – one that, like that pursued within STS, demands that we ask questions that have *both* theoretical importance *and* practical, political value, for example by placing publics and their interests at the centre of research (Sismondo, 2008). If critique of educational technology has run out of steam, showcasing researchers' wit but not changing what they criticise, perhaps it is time to try something else instead – something that builds new relationships between researchers, developers and publics, and changes how things get done.

The history of education has revealed the decadence of technology – disengaged, solipsistic and totalising in the way in which cycles of new technologies have repeatedly promised futures for education (while demanding that education, teachers and learners all change to accommodate what technology needs). It is time to challenge technology, to see if it can be re-engaged, contributing to more desirable futures for education, futures shaped by working-with learners, teachers, schools, materials, and so on, through practices that start with the people and things neglected by education and by technology to date.

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Works Cite:

Ahmed, S. (2019). *What's the use?: On the uses of use*. Duke University Press.

Andreessen, M. (2023) The Techno-Optimist Manifesto. https://a16z. com/the-techno-optimist-manifesto/

Bardzell, S. (2018). Utopias of participation: Feminism, design, and the futures. *ACM Transactions on Computer-Human Interaction (TO-CHI)*, *25*(1), 1-24.

Benjamin, R. (2019) Race after Technology: Abolitionist Tools for the New Jim Code. Polity Press.

Borgmann, A. (1984). *Technology and the character of contemporary life: A philosophical inquiry*. University of Chicago Press.

Bozalek, V., Bayat, A., Gachago, D., Motala, S., & Mitchell, V. (2018). A pedagogy of response-ability. Socially just pedagogies: Posthumanist, feminist and materialist perspectives in higher education, 97-112.

Campolo, A., & Crawford, K. (2020). Enchanted determinism: Power without responsibility in artificial intelligence. Engaging Science, Technology, and Society, 6 1-19.

Chan, A. S. (2019). Venture ed: recycling hype, fixing futures, and the temporal order of edtech. In Vertsesi, J. & Ribes, D. (Eds), *DigitalSTS: A field guide for science & technology studies*, 161-77. Princeton University Press.

Cuban, L. (1986). Teachers and machines: The classroom use of technology since 1920. Teachers college press.

Cuban, L. (2001) *Oversold and underused: computers in the classroom*. Harvard: Harvard University Press.

Czerniewicz, L. (2010). Educational technology–Mapping the terrain with Bernstein as cartographer. *Journal of Computer Assisted Learning*, *26*(6), 523-34.

de la Bellacasa, M. (2011). Matters of care in technoscience: Assembling neglected things. Social Studies of Science, 41(1), Article 1.

de la Bellacasa, M. P. (2012). 'Nothing Comes Without Its World': Thinking with Care. *The Sociological Review*, *60*(2), Article 2. https://doi.org/10.1111/j.1467-954X.2012.02070.x

Eubanks V (2017) Automating inequality: how high-tech tools profile, police, and punish the poor. St. Martin's Press, New York

Eynon, R. (2023). Algorithmic bias and discrimination through digitalisation in education: A socio-technical view. In Gulson, K. (Ed), *World Yearbook of Education 2024*, 245-60. New York: Routledge.

Eynon, R. (2024) The Future Trajectory of the AIED Community: Defining the 'Knowledge Tradition' in Critical Times. International Journal of Artificial Intelligence in Education, 34, 105–10.

Feenberg, A. (1999). Questioning Technology. New York: Routledge.

Ferrari, A., & Punie, Y. (2013). DIGCOMP: A framework for developing and understanding digital competence in Europe. Luxembourg: Publications office of the European Union.

Friesen, N. (2009). Re-thinking e-learning research: Foundations, methods, and practices. New York: Peter Lang.

Gallagher, M., & Breines, M. (2023). Unpacking the Hidden Curricula in Educational Automation: A Methodology for Ethical Praxis. Postdigital Science and Education, 5(1), 56-76.

Gordon, L. (2003). The human condition in an age of disciplinary decadence: Thoughts on knowing and learning. Philosophical Studies in Education, 34, 7-23.

Gordon, L. (2006) *Disciplinary Decadence: Living Thought in Trying Times*. Boulder, Co.: Paradigm Press.

Gordon, L. (2014). Disciplinary decadence and the decolonisation of knowledge. Africa Development, 39(1), 81-92.

Gray, M. L., & Suri, S. (2019). Ghost work: How to stop Silicon Valley from building a new global underclass. Eamon Dolan Books.

Heidegger, M. (1962). *Being and Time*. Macquarrie, J. & Robinson, E. (Trans). MPG Books.

Heidegger, M. (1977). The Question concerning technology, and other essays. New York: Harper Torchbooks.

Henry, J. V., & Oliver, M. (2022). Who will watch the watchmen? The ethico-political arrangements of algorithmic proctoring for academic integrity. *Postdigital Science and Education*, 4(2), 330-53.

Ihde, D. (1990). Technology and the lifeworld: From garden to earth. Indiana University Press.

Laurillard, D. (2008) Digital technologies and their role in achieving our ambitions for education. London: Institute of Education.

Latour, B. (2004). Why has critique run out of steam? From matters of fact to matters of concern. Critical Inquiry, 30(2), 225-48.

Macgilchrist, F. (2021). What is 'critical'in critical studies of edtech? Three responses. *Learning, Media and Technology*, 46(3), 243-49.

MacKenzie, A., Bhatt, I. (2020) Lies, Bullshit and Fake News: Some Epistemological Concerns. *Postdigital Science and Education,* 2(9-13). https://doi.org/10.1007/s42438-018-0025-4

Mayes, J.T.(2019) Learning Technology and Groundhog Day. In W. Strang, V.B. Simpson & D. Slater (Eds.), Hypermedia at Work: Practice and Theory in Higher Education. University of Kent Press: Canterbury.

Oliver, M. (2011). Technological determinism in educational technology research: some alternative ways of thinking about the relationship between learning and technology. *Journal of Computer Assisted Learning*, 27(5), 373-84.

Oliver, M. (2013). Learning technology: Theorising the tools we study. *British Journal of Educational Technology*, 44(1), 31-43.

Petrina, S. (2004). Sidney Pressey and the automation of education, 1924-1934. Technology and Culture, 45(2), 305-30.

Ross, J. (2022). *Digital futures for learning: Speculative methods and pedagogies*. New York: Routledge.

Sismondo, S. (2008). Science and technology studies and an engaged program. In E. Hackett, et al. (Eds.), *The handbook of science and technol-*

ogy studies (pp. 13–30). Cambridge, MA: MIT Press.

Stone, G. (2022). The Agricultural Dilemma: How Not to Feed the World. New York: Routledge.

Tenner, E. (1997). *Why things bite back: Technology and the revenge of unintended consequences*. Vintage.

Usher, A. D. (2020). South Africa and India push for COVID-19 patents ban. *The Lancet*, *396*(10265), 1790-91.

Watters, A. (2023). *Teaching machines: The history of personalized learning*. Cambridge, MA: MIT Press.

Weinberg, A. M. (1967). Can technology replace social engineering?. American Behavioral Scientist, 10(9), 7-9.

Winner, L. (1980). Do Artifacts Have Politics? Daedalus, 121–36.

Wolin, R. (2023). Heidegger in Ruins: Between Philosophy and Ideology. Yale University Press.

Woolgar, S. (1990). Configuring the user: the case of usability trials. *The Sociological Review*, 38(1), 58-99.

Wu, H. A. (2022). Trouble [Shooting] Caring Technologies in Pedagogical Practice. *Catalyst: Feminism, Theory, Technoscience*, *8*(2) 1-23.