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SURVEILLANCE PRACTICES, RISKS AND RESPONSES IN THE POST PANDEMIC UNIVERSITY

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Abstract: *This paper describes and critiques how surveillance is situated and evolving in higher education settings, with a focus on the surveillance of teaching and learning. It argues that intensifying practices of datafication and monitoring in universities echo those in broader society, and that the Covid-19 global pandemic has both exacerbated these practices and made them more visible. Surveillance brings risks to learning relationships, academic and work practices, as well as reinforcing economic models of extraction and inequalities in education and society. Responses to surveillance practices include resistance, advocacy, education, regulation and investment, and a number of these responses are examined here. Drawing on scholarship and practice, the paper provides an in-depth overview of this topic for people in university settings including those in leadership positions, learning technology roles, educators and students. The authors are part of an international network of researchers, educators and university leaders who are working together to develop new approaches to surveillance futures for higher education: https://aftersurveillance.net/. Authors are based in Canada, South Africa, the United Kingdom and the United States, and this paper reflects those specific contexts.*

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Introduction

In higher education (HE), data about students is captured in various ways at a number of points, from visits to university websites to engagement with institutional learning management systems, to assessments, grades and more. Data is also generated by members of academic staff when their core activities of teaching, research and professional engagement are mediated via digital platforms. Within institutions, new administrative and business opportunities arise both from treating individuals as aggregates of data, and from interrogating large intersecting data sets.

Data-driven decision making in education settings is becoming an established practice to optimize institutional functioning and structures (e.g., knowledge management, and strategic planning), to support institutional decision-making (e.g., decision support systems and academic analytics), to meet institutional or programmatic accreditation and quality assurance, to facilitate participatory models of decision-making, and to make curricular and/or instructional improvements (Bouwma-Gearhart and Collins, 2015; Fong and Caldwell, 2016). As such, a very wide range of higher education practices, including learning, have been or are in the process of being datafied, quantified, standardised, and objectified (Williamson, 2018).

The pandemic speeded up the datafication of higher education, while the urgent shift to emergency remote teaching (ERT) in 2020, and the necessarily hurried decision making in the first days and weeks of the COVID-19 pandemic, meant that existing checks and barriers to technology adoption and digital learning were often set aside. At national or regional levels, for example, regulatory privacy laws were relaxed to enable widespread adoption of communication tools (BC Gov, 2020) and some countries relaxed their legal constraints regarding the limits on residential universities providing distance education (thus online education). Within universities, contracts with software vendors were signed quickly, with the concomitant risk that decisions intended to enable short term continuity become embedded for the long term (Curtin, 2021; NPR, 2020).

In this paper we explore the ways that a range of educational practices are emerging and becoming entrenched at the conjunction of digital data use, the managerialist culture that has come to largely dominate the higher education sector, and broader socio-economic contexts. These we term "surveillance practices", and we argue that these practices bring significant risks to individuals and organisations, and for the higher education community. We also explore some actual and potential responses to these risks, and consider the role that a committed research programme might have in supporting these responses.

We do not claim that data has no place in higher education. Nor do we suggest that monitoring is always oppressive, or that audit trails have no value in decision making or learner support. Individuals and universities collect such data with positive intentions, and there are examples of data use that are founded on principles of individual data sovereignty and data ethics. We note "evidence that, depending on a number of variables, learning analytics do impact positively on student success and retention" (Prinsloo et al., 2020 p263) alongside other evidence that, even within the learning analytics community, the efficacy of learning analytics remains contentious (Matcha et al., 2020; Prinsloo et al., 2020; Sønderlund et al., 2019). Our paper does not address efficacy directly but the wider consequences of surveillance practices and the often uncritical ways they have been adopted into higher education.

The paper has been co-written by a group of authors from a range of positions and perspectives within the higher education sector, including library/information services, academic and managerial roles. We draw on both existing literature and our own experiences to present a critical analysis of the current landscape of surveillance practices in HE. We have included a series of "vignettes" to ground the analysis in practical situations. These vignettes are intended as resources

for thinking with, are illustrative of our own diversely situated experiences and are intended to serve as stimuli for readers to reflect and discuss the issues we raise in their own contexts.

Higher Education echoes broader social practices

The reasons for the rise in surveillance practices and technologies, and the impacts of both, are inextricably bound up with many other issues of concern both within the academy and in the world. Without intervention, the overall impact of these practices in higher education will mirror those in the wider society: the rise of cultures of policing and carceral technologies, attacks on the dignity of human beings, and the algorithmic embedding and enhancement of biases that reinforce racism, sexism, and structural inequality.

Our concern is how what is happening in higher education reflects, and indeed contributes to, dominant datafication discourses as well as with the ways that education systems are a key site for the operation of surveillance practices. We recognise that these practices existed before the rise of digital technologies. They were described decades ago as a new form of power in Western societies, felt in "the grain of individuals, touch(ing) their bodies and insert(ing) itself into their actions and attitudes, their discourses, learning processes and everyday lives" (Foucault, 1980). Drawing on the now well-known concept of the "panopticon", an imaginary prison design as an architecture of power (Bentham, 1791), Foucault developed an early theoretical foundation for considering these practices as "surveillance". He described how "disciplinary power" was instilled in human bodies by internalising surveillance and self-regulation.

These ideas have been elaborated for a more fragmented and unstable world to describe a society of control, where behaviours are monitored as data trails and online avatars, as well as through the diversity of traces and signals produced by physical bodies (Deleuze 1992, Lupton, 2014). Thus, information about people and their behaviour is made visible to other people, systems and companies. Power is used to gain knowledge about people, and knowledge is used to gain more power. The term "surveillance practices" gained prominence in the work of Zuboff (2019) who links surveillance as a power-knowledge practice to capitalism as an economic system. "The unilateral claiming of private human experience as free raw material for translation into behavioral data constitutes, for Zuboff, a new economic order (in Laidler, 2019).

Higher education is a site of multiple and intersecting surveillance practices, which we describe in the next section. Yet, we argue, there are opportunities – and perhaps responsibilities – to interrogate and subvert these practices, to explore alternatives to surveillance, and to envision the university in a different way.

Surveillance practices in Higher Education

The phrase "surveillance practices in higher education" captures a nexus of issues:

- the rendering of student and educator activities as behaviours that can be "datafied";
- inequalities of power that exist between data owners/companies and the people whose data is being collected, analysed, managed and shared;
- the insertion and intensification of data-based and data-generating digital platforms into the core activities of universities, and the normalization of vendor-university relationships (which tend to privilege vendor profit-making);

Surveillance practices are generally introduced as a solution to perceived problems, with insufficient or unknown consideration for longer term and unintended consequences. These "problems" include monitoring student progress and "risk" (justifying the use of learning analytics), student engagement (transactional attendance log data, swipe cards), academic integrity

(plagiarism software, online proctoring), safety and security (social media monitoring, biometrics). Their introduction may be treated as a technical and administrative matter, rather than one based on ethical and pedagogical considerations. Yet technologies do not only narrowly do what is asked of them; the consequences of introducing them can be "surprising and at odds with their original intent" (Knox, 2010 p.5). Although well-intentioned, the use of these tools can have consequences for staff and student privacy, and for relations of trust.

Pandemic urgency

The Covid-19 global pandemic has meant the intensification of practices, activities and relationships which had been percolating through universities since digital technologies and online learning started taking hold across the sector. While the attendant tensions and risks had been previously acknowledged, new relationships have been speedily formed and technologies introduced at an unprecedented scale. These technologies produce new effects in universities, but they also build on longstanding practices of monitoring, assessment and measurement; they entrench existing structures of power, and they continue the centralisation of management functions in higher education, displacing more collegial forms of academic governance (Decuypere et al., 2021). The pandemic and associated shifts to online teaching and learning accelerate existing trends. This acceleration itself risks producing new effects.

Risks

This section identifies some of the ongoing problems in higher education that are being exacerbated as surveillance technologies and practices become mainstream. We explore risks of surveillance practices for learners and learning, for teaching, and for professional practice, before outlining how these practices are involved in the enhancement of datafication and marketisation and on growing inequalities.

Risks to learners and learning relationships

Many of the risks we discuss here can be seen as undermining relationships of trust. Institutions of higher education have depended for their core activities on a web of trust relationships, for good and for ill (noting that trust processes are not free of bias or inequalities, and ought themselves to be interrogated). For example these include:

- trust that students want to learn and will study in autonomous, self-regulating ways;

- trust that teachers have valuable knowledge and are capable of helping their students gain access to and construct their own valuable knowledges;

- trust that assessment processes are reliable and fair, both within and across institutions and over time;

- trust that research processes generate valid, useful knowledge and evidence that can inform practice and decision-making both within the HE context and in society more broadly.

In all of these cases, institutions now have the capacity to monitor and assess performance in terms of data trails and analyses; this may well be an alternative to developing and strengthening relations of trust, or indeed politicising and critiquing them in human terms. Data (and especially big data) is put forward as the solution to questions of trust in interactions between parties who have not developed relationships with each other (Debussche et al., 2019). The use of data is presented as a way of avoiding the danger of placing trust in someone unknown, or in a process such as professional judgement. These shifts often take place in contexts where teacher-student ratios are

increasing or "contact time" is reducing, thereby reducing teachers' ability to develop knowledge of students on an interpersonal level.

The role of surveillance practices in the generation of increasing quantities of learning data thus has problematic consequences for teacher-student relations. For example, plagiarism detection systems (Introna, 2016, 2014) and remote proctoring software (Swauger, 2020) put an assumption of distrust at the heart of the assessment process. The widespread use of plagiarism detection software constructs all students as inclined to cheat. The literature of these companies explicitly uses cheating as justification for monitoring and surveillance (Zwagerman, 2008). However, perversely, the more these tools are employed, the more adversarial teaching relationships with students become, fueling both the risk of cheating and the arguments against a trust model of higher education (Ross and Macleod, 2018). In addition, by casting doubt on the ability of institutions to assess students fairly without machine support, plagiarism and proctoring "solutions" become integrated into the assessment and accreditation process, increasing reliance on third party and commercial entities for core higher education functions. While there is a growing literature and body of practice on alternative (and more authentic) assessments (Brown, 2020; Koh, 2017; Thomas and Scott, 2016; Wilson et al., 2017), there is still cultural work to be done for these techniques to be accepted in all subject areas. With a pandemic added to the neoliberal mix, overwhelmed and under-supported practitioners have few incentives to re-design assessment.

Many universities monitor and evaluate student behaviour based on logged activities on learning platforms, sometimes combining this with student demographic information from the student record, and even with biometric or facial recognition data used to monitor attendance. The most sophisticated systems in this space use such information to create predictions of "risk", based on comparisons of current students to models based on historical student data. The purposes are benevolent ones: enhanced support and progression (University of British Columbia, n.d.; University of Wollongong, 2020), timely interventions and actionable feedback (Tsai, n.d.). Strategically, the drive to adopt these measures is aligned to solving the problem of retention rates and improving student satisfaction (Dawson et al., 2017; Na and Tasir, 2017). However, even if the broadly benevolent purposes of monitoring learning analytics were fully realised – and some authors argue that implementations of aspects such as learning analytics dashboards are not currently meeting their student support aspirations (Matcha et al., 2020) – the rendering of students into collections of needs and behaviours that can be serviced through a variety of responses from the "system" can reinforce a deficit model of learning, rather than viewing students as members of a learning community in which trust is, at least, desirable.

Practices of monitoring and tracking students' online behaviour also entrench the belief that meaningful learning activity is that which can be measured minutely and monitored closely, ignoring activities such as thinking, reading, imagining, creating, challenging, and unstructured discussion. In a rush to measurement, universities may indicate such practices are not valued. There is a risk that learning is reduced to a series of performative moves, orientated towards external measures, without reference to what we know and value in the practices of education (Biesta, 2009). The impacts of this may be felt long after students leave the university. Encouraging students to self-monitor and quantify their own learning behaviours prepares them for workplaces in which this is also the expectation and the norm (Vatcha, 2020).

Risks to academics and professional staff

Technologies for surveillance of students, including academic integrity "assurance", automated assessment and student monitoring tools, are marketed to teaching staff as means to streamline

their work and cope with student demands. Ironically, however, they produce new demands – to keep pace with the monitoring system, to respond to the needs identified within a specified time frame – and, as we have noted, undermine relations of trust between teachers and students.

Vignette 1

At Institution A there are calls for increased use of plagiarism detection tools, including integration with the VLE, to scan all student work as part of the assignment submission process. These are driven by concerns about managing academic time and workloads. At present, however, these tools are reserved for use within academic integrity investigations, and only once a potential issue has been identified. The decision not to scale up their use has started from a place of trust in students, scepticism about how much time can genuinely be saved, and a concern that introducing such tools at scale changes behaviour. In particular, administrators are concerned by reports from other institutions that their routine use has led under-confident students to turn their work over to "free plagiarism checkers", many of which are thinly-veiled data collection mechanisms for contract cheating services.

How do we explicitly consider and design for unanticipated effects as well as perceived benefits when we introduce new educational technologies?

Who takes such decisions, and how can their professional judgement be supported?

There are other impacts of surveillance on academic and professional work in higher education. As Titus (2008) notes, "the rhetoric of quality appears as a legitimating device, but it actually obscures its own implication in monitoring and controlling the conditions and practices of academic work" (Titus, 2008 p. 414). During the pandemic and emergency online teaching response, academic teaching has (necessarily) been conducted in forms that are more open to monitoring, for example through benchmarks for online learning materials, and time limits for uploading recorded lectures. Academic work has also been subdivided in new ways. Scientific analyses of work tend always to a logic of fragmentation (Coriot, 1980; Smith, 1962) and we see this in the way that monitoring and measuring serve to unbundle academic roles (Czerniewicz, 2018) allowing aspects of academic work to be automated (Watters, 2020) and contributing to more fragmented and potentially more precarious working conditions within the university.

As budgets are further squeezed by the pandemic hit to university incomes, there will be more inclination to re-think the division of academic labour, displacing some tasks onto digital platforms and others onto cheaper workers. As teachers' roles become less coherent and satisfying, they also become more stratified, with staff who perform the lower-valued (typically more caring, student-oriented and "feminised") aspects of the role being increasingly casualised, monitored, and subjected to "efficiency" measures. The same effects can be seen in other professional roles within the university. For example, even as the pandemic has massively increased the demand for expertise in online teaching and learning, in many universities resources have been directed away from in-house digital learning specialists and towards "help" services from some of the world's biggest corporations, many of whom have well-documented histories of labour, ethical and environmental abuses. In an environment of pervasive austerity, rebuilding lost capacity by investing in skilled human beings seems unlikely to be supported by decision-makers.

Professional and academic values such as peer review, shared responsibility, personal integrity and trust have gradually been replaced by service level agreements and efficiency metrics, in forms that lend themselves to quantitative, simplistic and even non-human assessment. For example in the UK the Teaching Enhancement Framework has been used to defund and devalue courses that do not produce the right metrics for the university to attain its desired quality mark: at least some of

those metrics are raw numerical measures such as graduate income.

Vignette 2: A case of slippages

Institution B recently centralised the system for granting extensions for student assignments. Students must enter personal details to support their extension request into the Learning Management System. Examples might include a terminally-ill spouse, a child struggling with mental health issues, and the unexpected death of a parent. The LMS is managed by a third-party provider, whose data policies are not provided.

How might the system make it harder for (some) students to gain extensions, or to receive support with personal issues?

The system is also creating new practices in parts of the institution. At least one Faculty has started to use the statistics generated to question the professional practices of academics: if more than a certain fraction of students are granted extensions, the lecturer concerned is challenged by administrative staff.

How might the new system impact on teachers' professional roles and judgement? How do these slippages reflect on relationships of trust between the institution, students, and academic staff?

The undermining of trust and the growth of a surveillance culture is also evident in the trend for student evaluations of teaching to be used in monitoring staff performance (Titus, 2008). While allowing universities to claim to be responding to the "student voice", Module Evaluation Surveys (MESs) and Questionnaires (MEQs) are mainly used to quantify the value of teaching staff (Hornstein, 2017), framing students as the arbiters. These surveys can erode positive relationships between staff and students, and research has suggested that "student evaluation of teaching ratings and student learning are not related," and even that "teacher effectiveness is negatively correlated with students' evaluations" (Uttle et al., 2017). Studies have also shown that unconscious gender and racial bias (Huston, 2006) affects "even putatively objective aspects of teaching, such as how promptly assignments are graded" to a statistically significant degree (Boring and Ottoboni, 2016). The suspicion that MESs and MEQs do not generate fair representations of teaching and learning experiences only serves to further dismantle trusting relationships.

Reinforcing the extractive economy

Surveillance technologies, especially those backed by significant amounts of venture capital, are often underpinned by the same precarious labour and outsourcing practices that are critiqued from within the academy (Mirrlees and Alvi, 2019). For example, many of the human proctoring services offered by commercial companies are based on outsourcing or gig-work models, and plagiarism detection systems accrue immense commercial value on the unpaid labour of students (Johnson, 2019). Furthermore, as each advance foregrounds learning that lends itself to quantifiable measures, it further embeds expectations that promote automation. There are always more efficiencies to be gained: if student work can be graded by algorithms, learning can be defined in terms of gains that can be measured algorithmically. If courses can be ranked according to graduate salaries and student module evaluations, peer-led forms of quality assurance become expensive luxuries.

Many surveillance practices are extractive in nature and intent, designed to move value from the public into the private sector. At the institutional level, extractive surveillance practices have been introduced as a by-product of outsourcing and the use of commercial cloud-based educational technology platforms. Procurement models have shifted from purchase to rental - essentially,

universities and their digital platforms have become interdependent, reliant on each other for the data they need to run their business. For a number of years, the capacity of most higher education institutions to locally provision, support and develop the technologies they rely on has been systematically eroded. Combined with technology procurement processes that do not, or cannot, extensively audit a company's privacy and data policies, this presents significant risks to the protection of student and faculty data. For example, when the Canvas LMS parent company Instructure was acquired by a private equity firm, many were surprised to learn that the platform had amassed a significant amount of data about students and staff, laying bare large gaps in universities' procurement practices (Young, 2020).

Proprietary educational technology platforms have failed to provide meaningful transparency. Their business models, which are often built on data harvesting, do not give users adequate control and safeguard, either over their data or the information they receive and impart. Staff and students are rarely in a position to understand the extent to which data is being used, nor are they able to determine the extent to which automated decision-making is leveraged in the curation or amplification of content. They cannot gauge the impact of these automated processes on their exposure to diverse content, and they cannot study or prevent the discriminatory treatment of underrepresented groups. Moves to make data and monitoring practices and impacts more visible, and equip staff and students to understand and challenge them, should be strongly welcomed and encouraged, as we will discuss below in the section on responses.

Increasing inequalities

With the wide implementation of emerging forms of automation in various activities in the HE sector, ranging from the day-to-day running of an institution to making long-term strategic plans, educators and administrators need to be wary about potential discriminations and asymmetries resulting from continually categorising and normalising people as they work and study. A growing literature suggests that automatic discriminations exist when organisations or states seek to analyse and categorise a population through machines (eg Eubanks, 2018; Noble, 2018; O'Neil, 2016; Perez, 2019). This can be illustrated by the biased 2020 A-level result in the UK (Porter, 2020).

Though dominant narratives about digital platforms' role in education are of promise and innovation, which Watters (2020) calls the "ed tech imaginary," the use of these technologies, particularly during the pandemic, has further exacerbated issues of inequity. Surveillance creates visibility, classifies behaviour and decides who and what will be absent. The harms of surveillance technologies to students and faculty are felt most by those who are marginalised (Gilliard, 2017). Certain uses of surveillance directly contribute to inequality. In the case of online proctoring, for example, students without quiet places to study, reliable internet, and minimum standards of personal IT equipment are significantly more disadvantaged by the use of these systems. A lack of cultural sensitivity and awareness of disability is increasingly being documented in these services, and the use of racially biased facial recognition technologies has long been a valid concern (Buolamwini and Gebru, 2018).

> *Vignette 3: new inequities*
>
> At institution C, located in the global South, data integration and management is so under-resourced that surveillance of any kind is a distant dream. The lack of in-house learning and data analytics capacity means the institution's management is looking for off-the-peg commercial solutions to solve day-to-day issues such as managing records. This in turn means that data ownership, privacy, ethics and transparency are becoming issues that are dealt with by corporate players, based in the global North, rather than negotiated through local policies and their application.

> How does the expertise and technical capital demanded by surveillance introduce new layers of inequality? How do they exacerbate existing inequalities between and within education systems?
>
> How can organisations gain greater control over their data systems, and so over the policies that govern them?

There are alternatives to the insidious surveillance practices fostered by technology, but those alternatives require a great deal of internal expertise and investment to foster. There is, for example, a high cost to investing in data ethics expertise (such as a Chief Privacy Officer) and adjusting technology acquisition and procurement processes to reflect values of respect for student data privacy. There are costs to early adoption, and engaging in the kind of "expert user" forums where there is some capacity to influence. In an environment where technology is seen as providing competitive advantage, and surveillance features are often marketed as a unique selling point, choosing privacy over functionality requires difficult compromises to be made. Certain institutions are better placed than others to make those investments; this introduces a new risk of creating a two-tier system where privacy is the privilege of elite institutions, and students in less-resourced institutions are exposed to a range of exploitative practices and technologies.

Responses

We have outlined some of the risks associated with data driven surveillance practices in higher education; there is also a range of responses that can be effective and meaningful in steering a different course - at individual, course, institutional or sector level. These responses can take the form of resistance, advocacy, education, regulation, engagement or investment, and this section outlines various approaches and possibilities in these categories. Collectively they show that the proliferation of surveillance practices can be paused, and even reversed, while the wider implications are examined.

The possibilities and examples below can usefully be categorised into quadrants, with intersecting lines delineating formal and informal, and individual and group responses (see Figure 1). Informal, collaborative responses are seen in activism around surveillance harms (for example, recent cases involving exam proctoring), while informal individual responses might include students and staff refusing to sign up or sign in to services, dropping out, or breaking the "rules" and being caught. Formal, individual-focused interventions tend to emerge through educational interventions such as developing students' digital literacies, while formal collaborative responses involve regulations and legal mechanisms, which are particularly important because, almost by definition, surveilled individuals have limited power to resist on their own, and informal collectives can only resist to the extent that surveillance operatives are visible and open to public pressure.
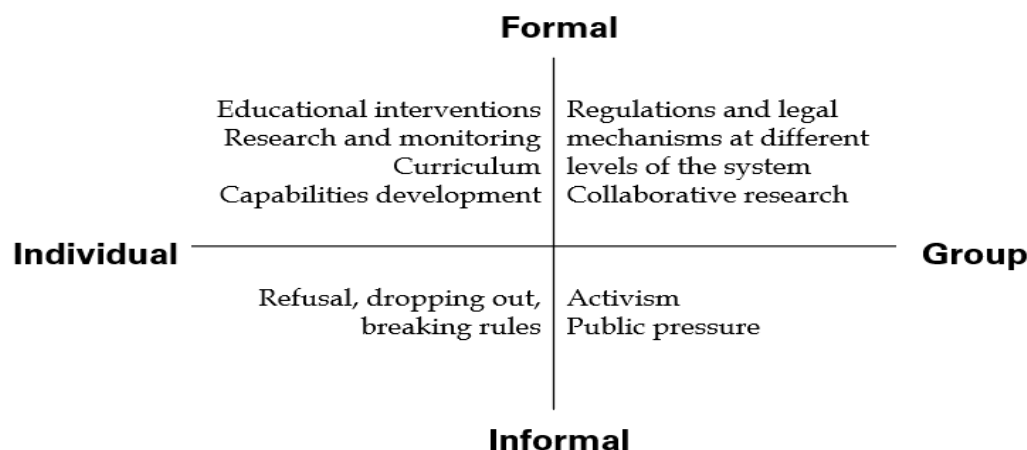
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Formal

Educational interventions Research and monitoring Curriculum Capabilities development	Regulations and legal mechanisms at different levels of the system Collaborative research

Individual   **Group**

Refusal, dropping out, breaking rules	Activism Public pressure

Informal

Figure 1: Categorising responses to surveillance in higher education:
formal, informal, individual and group.

Resistance

Staff and students have been raising alarms about surveillance practices since well before the pandemic (Knox, 2010; Prinsloo, 2017), but concerns have heightened during the rapid pivot to online teaching and academic work. The number of student petitions and campaigns against, for example, proctoring technologies across the world is significant, and digital civil liberties groups such as the Electronic Frontier Foundation (Kelley, 2020) and the New York Civil Liberties Union (NYCLU, 2019) have taken up the issue. Because of this advocacy work, some small number of universities are opting not to renew proctoring contracts whilst others are making formal policy decisions to cease its use (Bates, 2021; Feathers, 2021; Flaherty, 2021; Redden, 2021).

A growing number of academics and university professionals are also boycotting conferences where surveillance technology companies are sponsors, including declining keynote opportunities (Feathers, 2021). In response to a US-based online proctoring company's legal action against a learning technologist working in a Canadian university, a community of privacy advocates and experts hosted an Against Surveillance Teach-In (Against Surveillance, 2020), creating an enduring resource for wider advocacy as well as raising funds to support a colleague. Much of this critique is grounded in the concerns about trust, equity, and privacy raised in this paper.

Higher education can learn from action being taken in primary and secondary education too, where formal organisations such as Digital Defend Me (n.d.) and Student Privacy Compass (2021) are taking a data- and children's rights approach to addressing the collection and use of data in schools in England and the United States. Organisations such as the 5Rights Foundation (5Rights Foundation, 2021) campaign globally for a digital world that anticipates and is designed to be fit for use by children, with the attendant implications for data collection, automation, and digital literacies.

Challenging the direction of travel carries risks to institutions of higher education and to individuals who dispute the interests vested in ed tech platforms and their surveillance practices embedded in most business models. Often, resistance begins with individuals, who accept risks to their personal and professional well-being if they decide to raise concerns about surveillance (see Vignette 4).

Vignette 4: problematic technologies and precarious work places

An employee at Institution D reports:

"A co-worker and I often discuss the pandemic psychic environment in which reeling, exhausted, emotionally wracked instructors, learners, technologists and so many others are flailing. Meanwhile a range of disruptive actors move to take advantage. I don't know how to mobilise engaged conversation, much less resistance and the creation of a collective alternative, when everyone seems to be struggling to get through the semester or through the day. All this plays out against a backdrop of precarity and uncertainty. My own position has no guarantees attached to academic freedom: I serve at pleasure of my administration. Whenever I am confronted with a new problematic technology issue, and lately this seems to be happening constantly, I have to ask myself where the firm lines are, and where I need to play the longer game.

Does a fight on a lost cause here undermine our team someplace else? What would losing my job accomplish if that problematic technology is implemented after my departure?"

What spaces are there for "engaged conversation" between some of these people - instructors, learners and technologists - about "problematic technologies"?

How might precarity and surveillance play out in relation to one another? Does precarity – or marginality – present any new opportunities for resistance?

As this vignette shows, institutional decisions to implement surveillance technologies may well be put into practice by workers who are casualized, deprofessionalised, or have precarious working conditions and are least protected by policies supporting academic freedom (Holmwood and Servós, 2019). They may have some of the clearest insights into technologies and their risks, but they are unlikely to get support from their institutions in the face of complaints from colleagues or retaliation from the surveillance companies themselves.

These are not hypothetical. There are examples of EdTech companies mobilising resources to suppress dissent within universities, and private companies have pursued individuals who raise concerns. A company mentioned earlier for suing a learning technologist also subjected a student at the University of Miami to a takedown notice (Whittaker, 2020). The chilling effect of these actions is recognised by researchers who describe the risks inherent in researching academic proctoring technologies (Selwyn et al., 2021). When established reputable academics describe their own research as having been compromised by vendor practices, it is clear that individual resistance must be backed up by support from the wider academic community. EdTech companies do not as a rule share universities' general commitments to open debate, equity of treatment, evidence-based practice, or freedom of speech. When universities increasingly enter commercial contracts with a range of platforms as part of the core business of teaching and research, it is essential to reaffirm academic commitment to free research no matter how provocative or difficult.

Education and awareness-raising

To date, surveys suggest that most students take a relaxed attitude to data privacy and bias. Many students report that they do not know how their university uses their data, and very few mention privacy or surveillance as concerns (Newman et al. 2018). Students in the US report that it is "fine" for universities to collect data so long as it is used to "support" them with their learning and/or wellbeing - and there are fairly high levels of trust that this is the case (Educause, 2020; Tsai et al., 2018). An Australian literature review covering 2007 to 2018 identified this attitude alongside a general lack of data literacy (Braunack-Mayer et al., 2020).

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Many global organisations and governments advocate for data literacy to be part of the school curriculum, and there are international and national frameworks that support this agenda[1]. In higher education, graduate attribute statements and shared curricula on digital literacy sometimes include reference to the use of personal data. However, there are some alarming signs that the ubiquitous use of surveillance technologies is leading to a kind of resignation on the part of students (Draper and Turow, 2019), or a belief that concerns about privacy are akin to believing conspiracy theories (Selwyn et al., 2021). Students' perspectives on their data may shift, however, when they are given opportunities to learn about the risks (Bowler et al., 2017), and there is a strong argument that such activities are a requirement for ethical practice in the use of data (Braunack-Mayer et al., 2020). The new pervasiveness of these technologies, due to the pandemic, offers opportunities for critical pedagogy. By enabling students to become conscious of how data is being collected, managed, used and (potentially) mis-used in the context of their learning, a critical digital pedagogy approach can develop both a more general awareness of surveillance technologies and relations (e.g. in workplaces, criminal justice systems) and an opportunity for students to practice critical and solidarity actions (e.g. refusing to turn on cameras, contributing to policies on data privacy).

> *Vignette 5: collaborating with students on data privacy*
>
> At Institution E, a digital learning organisation launched a series of Cryptoparties – modelled on the global grassroots Cryptoparty Initiative, which hosts hands-on data privacy events – but with an explicit focus on co-design with students. Students enthusiastically joined the planning and facilitation of the events, and later led the push to continue Cryptoparty events into 2020 and 2021 (Digital Learning and Inquiry, n.d.). Cryptoparties focused on issues that concern students, such as protecting privacy while travelling to study abroad, and addressing privacy issues associated with the Canvas Learning Management System. The institution also adapted Tactical Tech's Data Detox, creating an annual Digital Detox: a series of newsletters for faculty, staff, students, alumni, and community members about digital issues and data privacy. The Detox newsletter series inspired Institution F to launch a similar annual Digital Detox that focuses more on educating faculty about student data privacy, and these two programs have inspired follow-along events at other institutions (Caines, 2021).
>
> What are the advantages of student collaboration and co-creation on issues of digital and data literacy?
>
> How else could students develop agency in relation to the data they share with institutions?

More investment is needed to equip students, faculty, and staff to advocate against institutional surveillance. For example, at the Mozilla Festival 2021, there was a session focusing on an Anti-Surveillance Toolkit for the Remote Worker. Privacy researcher Helen Nissenbaum has developed various tools, including one called Ad Nauseum , to help web users obfuscate their data by overloading collectors and algorithms with non-relevant data. The Electronic Frontier Foundation

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[1] Examples include : Australia – https://www.dese.gov.au/foundation-skills-your-future-program/resources/digital-literacy-skills-framework ; Canada - http://dataliteracy.ca/wp-content/uploads/2016/04/Strategies-and-Best-Practices-for-Data-Literacy-Education.pdf; The Open Data Institute's data literacy framework - https://theodi.org/article/data-literacy-what-is-it-and-how-do-we-address-it-at-odi/; the Queensland data literacy framework - https://education.qld.gov.au/initiativesstrategies/Documents/data-literacy-framework.PDF and the Scottish Council of Deans of Education ITE data literacy framework - http://www.scde.ac.uk/wp-content/uploads/2016/08/SCDE-National-Framework_B-151020.pdf

(2020) has developed a privacy toolkit for students, and Stop LAPD Spying Coalition and the Tactical Tech provide extensive resources and toolkits, some which could be repurposed in higher education. These tools and resources can help deprioritize or delegitimize certain data use practices.

Institutional and professional engagement

Alongside developing student digital literacies, many organisations have invested in their teaching staff (Atenas et al., 2020), especially to support the pivot to emergency online provision. As Atenas et al. argue, however, professional development rarely encompasses a critical approach to learning platforms, learning analytics, or data dashboards: these tend to be seen as technical or administrative issues, rather than the environment within which learning and teaching relationships are being constructed.

While management may be seen as driving the outsourcing of technical expertise and the adoption of surveillance platforms, academics and educators can also be advocates. Their interest in technical solutions is often born out of overwork and the stresses of pandemic teaching. For example, when the administration of the University of Michigan at Dearborn in the US advised faculty against using remote proctoring software, citing issues of equity and privacy, some faculty expressed frustration, particularly in departments where class sizes were highest. These teachers anticipated widespread cheating, that they would have to monitor, and felt overtaxed by the expectation that they would create more authentic assessments as an alternative (Silverman et al., 2021).

Opposing surveillance is not simply a question of asserting values: values may not be shared across the institution, or may be in tension with pragmatic demands and pressure points. To make informed decisions and develop shared positions, there needs to be more energetic engagement with all of a university's users of technology so that criteria beyond workload management and immediate efficiencies are applied. Universities also need to invest in changing workload models, and in developing the capabilities of teachers to teach and assess online in diverse ways, making informed choices about the technologies and data flows they engage with. There is important work to be done to help digital education (e-learning, learning technology) units renegotiate their roles and relationships within institutions, as their expertise is key to some of these developments (Czerniewicz, 2021). This is an area where professional organisations (for example the Association for Learning Technology, EDUCAUSE) can be very helpful and where recent work on the ethics of learning technologies (Association for Learning Technology, 2021) could have a major impact.

Regulation

Higher education is shaped by a wide range of laws and regulatory frameworks that could be used (depending on the jurisdiction) to protect students and staff from surveillance and extractive platforms. Frameworks such as the EU/UK GDPR (General Data Protection Regulation) or South Africa's POPIA (Protection of Personal Information Act) regulate the collection and use of personal data. A recent legal commentary on the impact of the pandemic and Emergency Remote Teaching on data protection issues (Giannopolous et al., 2021) recommended that "Groups of universities could join forces when negotiating with platforms, proposing their own data protection conditions, shaped according to their cultural mission and educational needs".

However, as we have argued, personal privacy is not the only concern with data use in education. The ownership and use of data is part of the global "techlash" against big tech currently being enacted in a number of ways, from courts and policies to resistance and refusal. One regulatory example salient for HE is the 2021 EU Regulation on Artificial Intelligence, which classifies data

systems used in education and training, especially for assessment, as "high risk" of exacerbating inequalities and causing harm. It proposes a number of significant measures to improve transparency and accountability that universities in the EU zone are having to consider adopting.

Investment in alternative, open and public approaches

State values are expressed in the form of resource allocations as well as policies and regulations. Under the neoliberal dominance of higher education, governments have chosen market models of education and its technologies, partly by underfunding educational institutions (see OECD 2020 for indicators of funding cuts leading up to the pandemic) and partly through regulatory regimes that favour commercial models[2]. However, alternative approaches to technology design and use are available, and many originate inside universities.

Open technologies

Heavy dependence on proprietary software makes HE vulnerable to abuses of data privacy (Coyne, 2020) Instead of relying on tech companies in the private sector, open and public alternatives can be developed for education, and governments can regulate the extent to which commercial proprietary software can use personal data through frameworks such GDPR or POPIA..

Free/libre open source software (FLOSS) for educational purposes can play a key role in making transparent and customising tools and platforms. Countries such as France and Germany have mandated FLOSS-like technological frameworks to be implemented in the public sector. In France, the majority of educational technologies are based on open technologies (Brownell, 2012) thus, whilst there are analytics activities, they remain within the control and the ownership of the academy. There are still ethical issues to be considered, but the speculative extraction of value from the academy by for-profit entities is much less present and the rationale for development is driven from within HE. Lin and Zini, (2008) and Margoni and Perry (2010) have listed the advantages of developing and implementing FLOSS technological frameworks (which have legal, economic, business, and ethical repercussions) in Italian schools and in the public sector. Investing in the development of FLOSS cannot wait as it will take time for these technologies to mature and to become viable alternatives to the existing proprietary ones offered by tech companies.

Shared educational technological services designed and delivered from within institutions for the sector as a whole are an obvious next step. The ESUP-Portail consortium in France is piloting this approach with other examples including Edina in the UK, the LAMP Consortium in the US and OpenETC in Canada.

The development of technological tools needs greater participation from HE practitioners and students. Otherwise, as argued earlier, the implementation of technologies would appear to be a neutral technical intervention, rather than one that is driven by ethical and pedagogical considerations. Participatory design and user-centred design approaches could be used in designing and implementing learning and teaching platforms to better support user interests, needs and practices (see e.g., Simonsen and Robertson, 2013). Speculative design (Dunne and Raby, 2013) may initiate or provoke new ideas for transformations in higher education as well. Narratives collected by projects such as Co-Designing with Speculative Data Stories (Datastories, 2021) will fit well into speculative design as they enable problems identification, and clarifying what users find difficult or problematic.

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[2] For current detailed reports of the funding crisis in the US see https://recessionreality.blogspot.com/

Arts-based methods

There are a number of examples of arts-based data privacy advocacy and resistance to surveillance. There is immense potential in using creative and arts-based methods to further explore surveillance practices, and to communicate and engage with a wide range of audiences as part of shifting attitudes. The Surveillance Studies Center's Screening Surveillance films ("Surveillance Studies Center," 2019), developed as vehicles for public education, tell speculative stories about the future of data surveillance. Art installations such as Tactical Tech's Glass Room Exhibit and Lin's Embodying Learning Analytics data art piece at a teaching and learning conference (Lin, 2019; Perez, 2019) show how art can provoke new understandings of problematic data privacy practices. *Realface Glamouflage*--a shirt that confuses Facebook's facial recognition--wearable projectors, and other anti-surveillance wearables render useless various forms of surveillance (Arnold, 2020). The concerns of the Zoom Obscura project ("Zoom Obscura," n.d.) while focused on videoconferencing technologies in a more general sense, resonate with the pandemic shift to remote synchronous teaching that many teachers and students have experienced. We need more of these affective methods to capture how privacy is perceived and managed (e.g., Watson and Lupton, 2020), to understand and map contemporary practices, and to embrace queering surveillance methods that challenge and interrogate norms.

> *Vignette 6: Telling Data Stories*
>
> In 2020, some of the authors of this paper were involved in producing a "data stories" tool to support speculative storytelling about future surveillance in higher education [project details removed for peer review]. To make the storytelling tool, they explored how speculative data stories can be scaffolded and created using a three-part process: prompts, mapping and multimodal writing. They found that the use of fiction encouraged a focus on the future and made the sharing of difficult or controversial ideas potentially less risky for people in precarious positions.
>
> How might speculative story-telling reveal some of the forces at play in surveillance, and some possible lines of resistance?
>
> How else might alternative technical futures be explored?

Conclusions

The issues raised in this paper indicate how surveillance practices pose risks to the future of the university as we think we know it – and to many actually existing institutions of higher education, too. These risks have been intensified during the Covid-19 pandemic, while the numerous responses to them have been largely fragmented and uncoordinated. It has also become clear that the nature and implications of the issues that are emerging as a result of surveillance practices are still opaque to many working and learning in higher education.

While there is important recent research in these areas, it is early days yet and it is essential that a broad ranging and deep research agenda be developed, funded, co-ordinated and contextualised. Such an agenda is likely to include theoretical and empirical attention at a systems level: the models of provision that are being afforded at the nexus of technology, data and neoliberal discourses; the roles and contestations of players in a shifting teaching and learning ecosystem; as well as the role and agenda of learning analytics. It would need to focus on the student experience in terms of the lived experiences of the "quantified" student; how data-driven technologies affect student motivation and the quality of assessment; how students navigate unbundled services and how students reassess issues of privacy and online privacy. There also needs to be research on how teaching work is monitored or quality assured; how datafication is shaping and being shaped by teaching and learning activities as well as the differences across roles and conditions of service e.g.

tenured/casual staff and those on academic terms or not. Of course, a research agenda would need to be contextualised by global concerns (such as inequality and climate change) as well as by local conditions.

Universities are subjected to constant scrutiny themselves, through the mechanisms of league tables, data-driven assessment exercises, conversion of their human and intellectual capital to publishing assets and citation indices (Chen and Chan, 2021) and political demands to account for their use of "public money" (now overwhelmingly from private sources, especially students and their families). In the face of the demand to make their knowledge visible, useful, efficient, and economically performative, it is little wonder that universities are in an existential crisis about what they know, and how to keep track of it. However, it is open to universities, and to organised groups of people inside universities, to resist the logic of surveillance, to refuse the labour of constantly monitoring themselves and each other, and to insist that universities reassert the values of solidarity, collegiality and trust. Indeed, resistance, refusal and the assertion of public values is essential if universities are to survive as distinctive places of knowledge production in the twenty-first century.

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