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Lecture Capture Policies: A Survey of British Universities

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Abstract

The integration of digital and convergent technologies into the classroom poses policy level challenges for universities, as these constitute a wider process of digitalization and marketization of the higher education institutions (HEIs) ranging from open access publishing to augmenting pedagogy through learning platforms. Digital technologies not only augment teaching and learning, they present HEIs with a multitude of challenges from copyright of third-party materials to performance rights. This paper surveyed lecture capture policies in 149 British universities in 2015–2016. As mobile and capture technologies become part of the classroom and extend their construction beyond the physical realms, this paper assesses the policy challenges that have emerged with the incorporation of lecture capture technologies into HEIs. Lecture capture is part of the 'digitalization' of the HEI sector, illuminating both the investments into digital modes of delivery and dissemination and in tandem the numerous challenges (structural, pedagogic, legal and ethical) that face the sector today through the increasing incorporation of technologies into everyday teaching practices, policy and delivery.

Keywords Lecture capture · Rights · Responsibilities · Political economy · Technology · Recording technologies · Higher Education UK

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Introduction

Mobile technologies and their sustained incorporation into the classroom present numerous regulatory and ethical challenges as well as risks for higher education (HE) that warrant more comprehensive regulations and guidelines for educators and students (Ibrahim and Howarth 2014). The expansion of lecture capture (LC) and its increasing integration into the curriculum and delivery constitute HE institutions (HEIs) within a postdigital and neoliberal landscape characterized by increased investment in digital and technical infrastructure as an essential component from the dissemination of research to student-centred teaching and learning strategies (cf. Fawns 2019; JISC 2016; Jones 2019; Alexander et al. 2019). The postdigital alludes to conditions in which digital technologies 'exists within new and enhanced conditions' (Hood and Tesar 2019: 308; Jandrić 2019) becoming naturalized and dominant such that its significance is noted by its absence rather than presence (Cramer 2015). The rapid expansion of LC platforms and policies and the challenges it poses to the classroom and educators are confounded through a changing higher education landscape which is being marketized and commodified within a neoliberal agenda (Jones 2019). As such, the extensions of LC into the classroom have not been unproblematic or seamless, instead invoking new governance challenges for the HEI sector. LC as a postdigital phenomenon illuminates the complex negotiations between humans and technologies in the classroom, illuminating issues between 'digital and the non-digital, material and social both in terms of the design of educational activities and in the practices that unfold in the doing of those activities' (Fawns 2019: 133).

Despite such complexities and at times contradictory imperatives, much of the academic focus on LC in Britain has been on the pedagogic implications with the broad consensus being that LC offers the possibility of accessing content anytime and anywhere and mostly benefits students for whom English is a second language or who have learning disabilities (Shaw and Molnar 2011; O'Callaghan et al. 2017; Alexander et al. 2019). The naturalization and de-problematizing of the technology are most explicitly manifested in assumptions of LC as a form of a 'minimum service provision' in the delivery of teaching and student experience. We found in our survey of HEIs that while digital technologies are presented as augmenting teaching and learning, they also unsettle a complex patchwork of different rights and ethics in order to assuage a market where the students hold court as consumers and where education is increasingly marketized to serve a neoliberal agenda (cf Jones 2019). The accumulation and capture of data by LC and its storage as well as issues of competing rights have to be further managed in HEIs with the General Data Protection Regulations (GDPR) which came into effect from 25 May 2018. GDPR adopted by the European Parliament and EU Council deals with protection of individuals in terms of personal data processing and as such each organization has an obligation to protect all of the individual data that it obtains including data that can belong to employees, members, students, clients, etc. (Renaud and Shepherd 2018). Lecture capture is a technology which enables the recording, storage and delivery of materials, and data is encompassed within GDPR regulations and as such governance that is evolving on LC in HEIs would have to reconcile and must be in compliance with GDPR. Our research provides an important snapshot in time of HEI policies before 2018 and as such offers subsequent

studies a yardstick against which to evaluate how LC policies change in response to the new regulation.

A recent report on major obstacles to scaling and adopting 'technology solutions' on a global level noted that the 'ability to leverage' off digital technologies required a 'rich understanding of the digital environment' yet made little mention of the rights and risks implicated in recording classroom activities (Alexander et al. 2019: 3 and 14). Thus far, there has been little scholarly attempt to explore how universities across a national sector seek to negotiate the challenges of recording the classroom (Newton et al. 2014; Dommett et al. 2019).

In the contemporary landscape, LC is constitutive of the interactive digital learning environment where lectures are recorded in real time, published, archived and can be accessed remotely. As such, the classroom is extended in time and space beyond the physical- and time-based delivery of the lecture. LC also alludes to the processes by which universities and individual staff members determine what, when and how teaching is captured, edited, distributed and archived to enhance delivery. LC is not only about the augmentation of delivery in the classroom but includes the governance and regulation of technologies through policy and practice in the sector, which can further impact labour practices, workload, pedagogy, making provisions for disability and equality, as well as anxieties over teaching material crossing into the public domain by being uploaded on public consumption platforms such as YouTube. The paper attempts to widen the academic debate beyond considerations of pedagogic benefits to include the governance of LC in UK universities.

The use of recorded content and learning platforms that students can access remotely is not new. In the past, such modes of delivery were primarily the preserve of universities specializing in long distance learning programmes and which pioneered the circulation of recorded lectures as a mode of delivery (Williams et al. 2013). The changing political economy of HEIs and the falling costs of LC have meant these technologies are now at the forefront of our delivery and digital learning environment in the UK. Along with this, increased speed and broadband and bandwidth have enabled digital files to be delivered via closed networks using streaming and more cost-effective storage via cloud (Secker et al. 2010).

In terms of institutional perception, digital technologies are seen as offering 'solutions' to a range of challenges in an increasingly competitive sector (JISC 2016). The interplay between technological improvements, cost and context has added a momentum to the appropriation of these technologies in the classroom and is exerting new forms of managerial and policy pressures to adopt LC in the classroom in the UK as value for students. Beyond the hype and at times reductionist assumptions about the educational benefits of LC, the study revealed a range of cultural, pedagogical and technical challenges as well as legal and labour rights issues. The intense marketization of education in a neoliberal landscape, with the increase in student fees and the slashing of governmental subsidies, has compelled HEIs to contend with an extraordinarily complex- and metrics-driven teaching excellence framework (TEF) introduced in 2017. TEF is a national exercise that assesses classroom performance and measures the success of programmes against graduate-level employment or further study and changing student demands (Scott 2018). The increased digital literacy in schools and HEIs, as well as the intimate entwining of digital technologies in people's everyday lives in this digital economy, has meant that the education sector is not isolated from the modes of

production and dissemination facilities afforded by mobile technologies (cf. Shopova 2014; Ibrahim and Howarth 2014). The increasing penetration of smartphones and their incorporation into digital infrastructure in terms of retrieval and information seeking means that digital recording constitutes part of a wider economy of replicating data and information through digital and mobile platforms. Such technological innovation renders the classroom a space constantly open to being disrupted and reconfigured through virtual and mobile platforms that enable new and innovative forms of delivery, format, dissemination and storage. The cultural response to new technologies in the classroom, whether mitigated by demands for wider incorporation of technologies or by resistance to being constantly captured through recording devices, is an issue that HEIs need to negotiate, particularly with an increasing need to augment student experiences through the quantified and metrics-driven TEF economy.

At a metalevel, human and institutional interfaces with technologies are prompting new policies and guidelines to regulate these technologies in the sector, as they raise issues of performance, student expectations, intellectual property (IP) rights and third-party rights. The paper contributes to a widening of the debate on LC by problematizing the policy dimensions of its expansion through the findings of a comprehensive survey of publicly available policies on LC in 149 British HEIs. The survey, undertaken between 2015 and 2016, coincides with the growing financial constraints on universities with the reduction of fee subsidy for students and raised fees. Our initial study, undertaken between November 2011 and April 2012, examined how HEIs sought to govern the perceived risks of covert and overt recording on mobile devices by students (Ibrahim and Howarth 2014). This follow-up survey specifically focuses on LC technologies and policies, and the results presented here build on previously unpublished data from our earlier study. In this paper, we specifically focus on how HEIs negotiate complex and competing rights and risks, the ethical and legal challenges and opportunities posed by LC at a particular moment in time.

Technology and Inclusivity

The increasing incorporation of technology has been associated with inclusivity and the accrual of value over time with increased budgetary pressures in HEIs. In the UK, cumulative interventions by governments over time have reconfigured student populations away from the homogeneity of white, public school–educated males from middle- to upper-class backgrounds in the 1950s to more heterogenous cohorts. By the twenty-first century, British student cohorts were more reflective of the wider society in terms of gender, ethnic minorities and disabilities as well as international students (HEFCE 2016). The socio-demographic diversification not only brought in students with diverse teaching and learning needs, it was also accompanied by an ideological commitment towards an inclusive learning environment (Layer 2019). The commitment was also underpinned through statutory obligations first under the 1995 Disability Discrimination Act which required HEIs to make reasonable adjustments for those with disabilities and then under the 2010 Equality Act which broadened the remit of those with protected characteristics to include age, race, etc. The Act makes it unlawful to discriminate, harass or victimize those with protected characteristics either actively or through negligence by not enabling access to learning. In response, HEIs have

introduced a raft of mechanisms since the late 1990s including extra classes for those students for whom English is a second language, the provision of notetakers for those with dyslexia and more recently LC.

The accelerated turn to LC followed government cuts to funding for non-medical support from September 2016 that left HEIs with the financial burden of ensuring fair access to teaching (JISC 2016). Previously, funding shortfalls could be covered by increased recruitment of international students; however, a tightening of visas under the Immigration Act 2014 curtailed this possibility. The Act included international students within the government's 'immigration figures' and sought to create a 'hostile environment' for anyone looking to enter Britain through an abuse of student visas. As international student numbers fell significantly from 2015 as the impact of Act was felt on recruitment, an important revenue source for HEIs was curtailed. This shifting political economy of British HE combined with statutory obligations to students with protected characteristics squeezed university budgets and, in this context, many HEIs positioned LC technology as a (relatively) cost-effective 'solution'. For instance, LC was seen as a technological replacement for notetakers and a tool to review lectures at a pace that suited variable competencies in English (JISC 2016).

The treatment of students as 'consumers' also added impetus to the expansion of LC. Cuts to teaching subsidies and increased tuition fees coincided with government pressure to deliver 'quality' teaching and augment the student experience.[1] Pressure intensified with the publication of the first results of the Teaching Excellence Framework (TEF) in 2017 and a year later, the Government launched the Office for Students to champion the interests of students. These interventions distinctly underscored the treatment of higher education not as a public good but marketized through students as consumers who assessed its value or 'price'. The imposing of a neoliberal agenda on the sector and a 'drive towards a crude market regime' remediates the social contract between the educator and student (Scott 2018). In tandem with this, Universities Minister Sam Gyimah in 2018 outlined plans under the TEF for the ranking of degree courses in a 'price-comparison type system' based on potential earnings (Press Association 2018). The provision of recorded lecture content on demand anywhere, anytime, partly in response to demand from student–consumers, is part of the value-for-money agenda shaping British higher education today and is regarded as 'minimum-service' provision.

The falling costs of LC infrastructure has converged with a shifting educational landscape to create a climate of receptivity to the technology within institutions. HEI senior managements perceive increased technological appropriation as enabling student diversification, innovation in teaching delivery and augmenting pedagogy. However, as LC becomes the 'new norm' in many universities, a scepticism towards the transformative potential of digital technologies for pedagogy has begun to emerge (Draper et al. 2018; Witthaus and Robinson 2015). More recently, attention has been drawn to methodological limitations and overgeneralized conclusions in earlier studies on the pedagogic benefits of the technologies (cf. Buchanan and Palmer 2017; Newton and McCunn 2015; Witthaus and Robinson 2015). LC is seen as presenting a 'mixed picture', a 'Janus-faced reality' where the benefits are juxtaposed against other

[1] Tuition fees of £1000 a year were first introduced by the Labour Government in September 1998. In England, tuition fee caps were increased to a maximum of £3000 a year in 2004 and after 2010 to £9000 a year (Anderson 2016).

unintended consequences. LC 'crushes spontaneity, impairs interaction and breeds wariness through constant surveillance' and may dehumanize and depersonalize classroom interactions (Joseph-Richard et al. 2018: 377). In effect, the technology pledges us to a digital realm and to the specifications of a technical architecture rather than the liveness and immediacy of the classroom.

Methodological doubts have also surfaced around earlier findings that depend on student self-reporting of benefits (Newton and McCunn 2015; Witthaus and Robinson 2015). There is now heightened attention to different student learning approaches, variations in the intensity of student engagement with LC and an over-reliance on samples drawn heavily from hard science programmes. The ability to generalize findings from more information-orientated science subjects to more argument- and interpretative-based programmes in the humanities and social sciences has also been questioned (Draper et al. 2018; Buchanan and Palmer 2017; Witthaus and Robinson 2015).

In providing a critique of some of the policies, the paper builds on the emergent, more cautious strand of research that questions the relative neglect of the possible risks of digital recording devices being incorporated into the classroom and the needs to mitigate these (Ibrahim and Howarth 2014). The aim is to broaden the academic debate on LC beyond pedagogy into an exploration of how governance shapes what technologies are incorporated into the classroom.

Materials and Methods

As mentioned, the paper builds on an earlier survey of 121 HEIs undertaken between November 2011 and April 2012 that explored how universities were governing unauthorized recording of lectures by students on their personal mobile devices (Ibrahim and Howarth 2014). In 2011–2012 study, we also collated policies on LC, and overarching analyses of these revealed that HEIs were cautious in adopting LC, wary of the risks of infringing statutory rights and sensitive to staff resistance to being recorded. The policies were also conservative whereby 34 of 108 respondents (31%) had adopted an 'opt-in' approach which required staff to formally request a recording of a lecture before it would take place, rather than an 'opt-out' which subsumes all staff as a default position (Fig. 1).

The follow-up study of LC (November 2015 and June 2016) drew on a larger population than the first survey because several HEIs had secured full degree-awarding powers in the interim, and it included specialist medical and performing arts colleges previously omitted. We first obtained a list of 170 HEIs from the Higher Education Statistics Agency (HESA) website and then excluded 21 distance-only HEIs or private ones that did not have degree-awarding powers or had yet to be granted full university status at the time. The resultant population of 149 HEIs was not only bigger but also more diverse than the earlier study.

A combined search of individual HEI websites and Freedom of Information (FOI) requests generated a sample of 133 universities or 89% of the total population of 149 HEIs and elicited 325 documents comprising a mix of webpages, emails, guidance

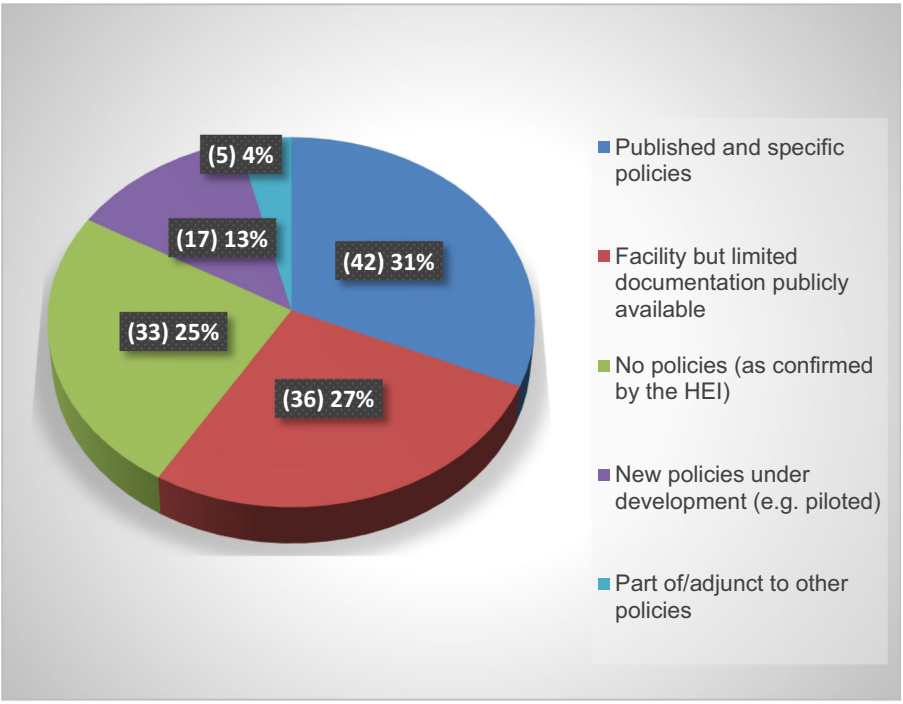

Fig. 1 Overview of Lecture Capture policies

documents and policy documents. We then used a mixed-method approach to analyse the documents with the aim of providing a snapshot in time of LC policies in British HEIs. A quantitative content analysis was used to derive an overview of the sector and to ascertain:

- How many universities had published specific policies on LC.
- How many had or were expanding provision campus-wide through roll-out programmes and/or opt-out policies that set the recording of all lectures as a default position.

A qualitative thematic analysis of policies was then done to establish how HEIs were responding to the structural, legal and ethical challenges posed by LC and what justifications they provided. The themes were derived inductively and included the following:

- 'Opt-in' approaches which required staff to formally request for their lecture to be recorded as opposed to 'opt-out', which required staff to formally request automatic recordings to be turned off.
- The governing of rights, i.e. third-party copyright, data protection, performance rights, etc.
- Accessibility issues pertaining to those with disabilities accessing live or recorded lectures.
- Monitoring of staff performance and student engagement.

The presentation and discussion of the findings were mapped through these categories. Since we first collected and analysed the data, some HEIs have changed their policies. As previously mentioned, significant changes in government policies have taken place with the GDPR coming into effect in May 2018 and in tandem the need for HEIs to review their LC policies to ensure compliance with these EU regulations.

Results and Discussion

We found a marked increase in the number of HEIs using some form of LC signalling the coming of age of this technology from the periphery to the mainstream. The main justifications given for increased appropriation included student demand, pedagogic benefits of a revise-and-review tool and the obligation to meet the needs of those with learning or language difficulties. Even though government (i.e. Department for Business Innovation and Skills 2015) has avoided prescribing the use of technology to cover the funding gap in disability support, HEIs have nevertheless identified LC as an obvious 'solution' to the shortfall and an important mechanism in meeting their statutory obligations to make reasonable adjustments for disabilities (JISC 2016).

Content Analysis Findings: A Quantitative Overview of the Sector

Expansion of Lecture Capture across the Sector

In the 2011/2012 study, 31% (34 out of a sample of 108 in 2011/2012) had some form of provision, policy or plan to develop LC. By 2014/5, this had risen to 75% (i.e. 100 out of a sample of 133 in 2014/2015, see Fig. 1 for the 2015/2016 figures).

Notably, there was a sharp divergence in the specialist sector. While all the specialist medical and veterinary HEIs had college-wide recording of most lectures, none of the performing arts ones had provision or published plans to explore LC as a possibility. The data did not suggest a possible explanation for the divergence between the specialist sectors; however, it does underscore cautions in recent studies against

Table 1 HEIs with extensive provision or opt-out approaches

HEI with campus/HEI-wide provision at the time of the research	Aberystwyth, Aston, Bangor, Birkbeck College, Liverpool John Moores, London School of Economics and Political Science, London School of Hygiene and Tropical Medicine, Royal Holloway, St George's, The Royal Veterinary College, Bristol, Chichester, Edinburgh, Essex, Exeter, Lancaster, Leeds, Leicester, Manchester, Oxford, Sheffield, Southampton, Stirling, Durham, University College London, St Mark and St John, Ulster and University of Wales Trinity Saint David
HEIs that had adopted an opt-out approach at the time of the research	Aberystwyth, London School of Hygiene & Tropical Medicine, London School of Economics and Political Science, Queen Mary, St George's, Bristol, Essex, Exeter, Leeds, Manchester, Sheffield, West London and University College London

overgeneralization of findings that do not account for the implications of LC for different pedagogies in different disciplines (cf. Draper et al. 2018).

Scaling-Up Lecture Capture Infrastructure

The data revealed an increase in campus-wide provision of LC. In 2011/2012, all HEIs with LC provision were limited to a small number of designated rooms. By 2014/5, 28 institutions (21% of the sample of 133) had scaled up LC campus-wide (see Table 1 and Figure 2) with detailed policies in tandem to govern it.

Scaling-up LC raised logistic and pedagogic challenges and as such some started with the largest lecture rooms, others delegated decision-making to faculties to account for specific disciplinary needs (University of Keele 2015; Skiadelli 2015). Others combined console-based LC in some rooms with personal capture, where staff downloads the recording software onto mobile devices enabling recording of live delivery to take place anywhere (e.g. University of York 2016).

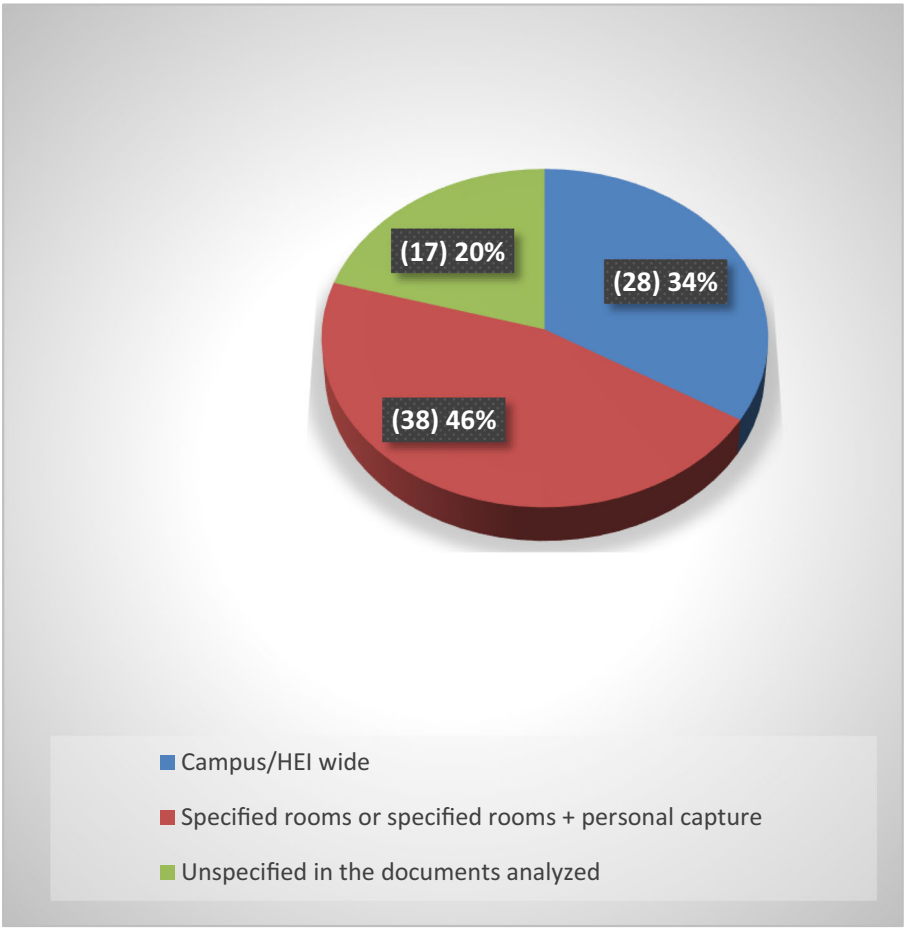

Fig. 2 Scale of Lecture Capture

Opt-In and Opt-Out Strategies

The most significant shift was the adoption of 'opt-out' strategy in a move to integrate LC widely into delivery. The 'opt-in' approach requires staff to request recordings, giving primary agency to the lecturer, whereas the 'opt-out' requires the individual to formally request not to be recorded effectively making LC the default position. 'Opt-out' symbolically positions LC as a constitutive component of the learning platform, mainstreaming it as an intrinsic pedagogic element.

While none of the HEIs in 2011/2012 had opt-out policies, by 2015/2016, 9% of the population surveyed (13 institutions) had shifted to 'opt-out' policies (see Table 1). Though the percentage of 'opt-out' institutions is statistically small, the emergence of recording as a default position significantly shifts the initiative from the educator to the institution, underpinning the emergence of LC as a norm, reinforcing student expectations of recording as a 'minimum service' provision. Default recording not only requires considerable investment in technical infrastructure, its implementation is also mitigated by logistical issues. This is illustrated by the case of London School of Economics and Political Science whose Academic Board approved a motion to move to an opt-out policy; however, at the time of the study, the policy had yet to be implemented due to technical, IP and logistical/timetabling complexities (Maguire 2016).

Lecture Capture and Emergent Challenges

Beyond the marketization of education, there are legal and ethical risks which accrue from the possibility of infringing various laws (i.e. IP, copyright, data protection and performance rights) to issues presented through the possible surveillance and monitoring of labour made feasible by recording and broadcasting technologies. These changes and challenges implicate the classroom as a space for competing rights, demands and expectations which connect it directly to the marketization and drive to increase value in the classroom. As such, the classroom as bounded physical space is being opened up by new technologies, making it amenable to new forms of gaze and metricization where technologies play a vital role in augmenting student experience and evaluations. As more HEIs move towards a default position of 'opt-out', setting out comprehensive policy frameworks the multitude of issues posed by digital technologies will continue to be a challenge for HEIs.

'Opt-out' as Symbolic of Pandering to Student Demand

The adverse reaction to the adoption of opt-out policies is manifested in concerted attempts by HEIs to neutralize it and to mainstream LC. Existing literature has labelled LC a 'divisive and disruptive technology' as evident in highly fragmented staff attitudes ranging from enthusiastic adopters to the apathetic and those vehemently oppose this 'dangerous technology' (Bond and Grussendorf 2013; Williams et al. 2013). Opt-out strategies often target the apathetic but the approach risks alienating staff who deem it as an erosion of academic freedom and a coercive strategy imposed top-down ignoring legitimate staff concerns, not lending to pedagogy but designed to 'pander' student demands (Karnad 2013).

A range of diverse 'persuasive' strategies have been employed to ameliorate this resistance including the use of hyperbolic rhetoric to impress the 'transformative' potential of LC for the student experience (Reece 2013b). Others premise individual agency by reassuring staff that the opt-out policy is not designed to be coercive or to 'alter' excellent teaching practice but to empower staff to decide whether to opt out based on their assessment of the impact of LC on teaching quality (Reece 2013a). Other HEIs drew on managerialist accounts of efficiency, presenting opt-out as less time-consuming and intrusive than opt-in (London School of Hygiene and Tropical Medicine 2015). Some approaches were more hierarchical and prescriptive where staff were required to secure line management approval to opt out and while pointing to the kinds of objections which may or may not be acceptable to management (e.g. St George's University of London 2016). The sharp contrast in strategies points to a distinction between HEIs keen to accommodate staff concerns within an opt-out policy and those dismissive of them. Locking opt-out policy into hierarchical structures created the potential for intimidation and coercion as well as a curtailment of choice or rendering staff as not compliant with the rest of their cohort.

While scaling-up technological provisions through opt-out, many of the policies also acknowledged that the mass recording of lectures rendered the bounded classroom more exposed to risks such as the 'YouTube fear' where classroom content could end up in public video sharing platforms where recordings intended for a restricted class audience could be downloaded, remixed and circulated on social media. HEIs acknowledged the risk of reputational harm from decontextualized content (University of Leeds 2014) or controversial content and discussions used to discipline staff, where technology could become part of the surveillance apparatus in universities. Nevertheless, the risks are not seen as so overwhelming to weaken management's resolve to expand LC. Such risks or a sense of loss of control is mitigated through a discourse that LC gives staff 'full control' over who got to hear what was recorded and when and what was released (University of Lincoln 2016). Policies also sought to reassure staff that students risked disciplinary action for unauthorized download, use or circulation of content (Reece 2013b). Despite a recognition that there were no fail safe mechanisms for content leaks onto social media platforms (St George's University of London 2016), HEIs in many cases sought to put the onus and responsibility on staff for policing the capture and dissemination of sensitive content.

Governing Rights: Third-Party Copyright, Data Protection and Performance Rights

LC brought to fore a range of legal challenges in recording live lectures from third-party copyright to data protection and performance rights. One of the top risks identified by JISC (2014) was the possible infringement of third-party copyright, a 'legally enforceable' property right in creative work that protects the holder's ability to profit from it by restricting how others may use it for a period. JISC argues that in the UK, copyright arises 'automatically' when the work is created and grants the holder control over how the work is used and whether or how it is made available. Copyright in teaching materials is usually held jointly between staff and employer or solely by the employer and third-party copyright infringement can expose HEIs to financial liability. Under fair use clauses in educational licences, universities are permitted to use live lectures for illustrative and analytical purposes; however, according to JISC, these

usually prohibit the recording, circulation or storage of such material, and as such, LC poses a risk in terms of compliance. HEIs are negotiating the risks by devolving responsibility to the lecturer, who is expected to edit out or source alternative non-copyrighted material to avoid third-party copyright infringements (University of Bath 2016).

Privacy rights and ethical concerns over personal data also emerge with LC in the capture, storage and use of personal data during interactive modes of teaching where class discussions may cover sensitive issues. Some policies negotiated this by extending the principles of ethical research to the governance of lecture capture, i.e. reiterating the principle that content of a personal nature should not be recorded without the prior written consent of participants, as in the case of University of Bristol (2016). Privacy protection though is more than an ethical consideration is also a statutory obligation. The 1998 Data Protection Act defines 'personal' as any information on race or ethnicity, political opinions, religious or other beliefs, membership of political organizations, sexual orientation, etc. of identified or identifiable living individuals (JISC 2015). Legal restrictions on collecting or recording, storing and circulating or disclosing personal data have implications for governance where LC captured classroom interactions (University of Leeds 2014). As such, these considerations have come to bear on the LC economy. Most of the policies analysed negotiated the data protection challenges through the mechanisms of informed consent requiring written permission for an image or contribution to be stored or distributed in a recording, notices on the lecture room door, a PowerPoint slide at the beginning of a lecture, and a red light on the lectern when recording was taking place (University of Exeter 2016; University of Bristol 2016) to alert the students or audience.

Whether such measures will suffice given developments post-survey remains to be seen. In May 2018, the General Data Protection Regulation (GDPR) came into effect, replacing existing data protection laws proscribing how organizations use personal data and tightening control on who has access to it. The legislation includes an expanded definition of personal data that includes 'any information relating to' an identified or identifiable person (Art. 4). The scope of the law has also been broadened to include 'the processing of personal data wholly or partly by automated means' (Art. 2) bringing LC within this ambit. A third change includes stronger consent requirements. As such HEIs come under a higher level of scrutiny and accountability on why information is held, how it is collected, when it will be deleted or anonymized and who may access it (Cormack 2017).

The third broad area of law implicated in LC is performance rights. Unlike the attention paid to third-party copyright and data protection, performance rights were conspicuous through their general absence from the policies analysed. JISC guidance suggests that the live delivery of a lecture falls under the legal definition of performance, and while the HEI may own the copyright to the content of the lecture, the lecturer owns the performance rights in the oral delivery (2015). Such rights are 'unique' to the performance, they cannot be licensed or assigned to someone else; therefore when a recording is made without consent or where a copy is made and circulated to students on Virtual Learning Environment (VLE) without consent, performance rights are infringed (JISC 2015).

In the few policies that did engage with performance rights, we found considerable variation. Some assumed recording would not take place without formal consent from staff who in the process assigned performance rights to the HEI (Newcastle University 2016). Others acknowledged that performance rights belong to the academic delivering the lecture but assumed that the HEI could use such rights as a 'consequence of employment' (Reece 2013a). University College London (2015) assumed that where staff had not opposed a recording by opting out, they would be 'deemed to have consented' to the assigning of a licence to the HEI to use the performance for academic or teaching purposes.

The complex ethical and legal domains implicated in recording lectures complicate strategies to scale up LC because it exponentially magnifies the risk of infringing statutory rights, with added complications from the diversification of modes of teaching and changing law. Moves towards more interactive, less didactic forms of pedagogy equally pose risks of capturing personal information of students potentially infringing data protection laws. One way of negotiating these complexities has been to use a narrow definition of a 'lecture' as a transmission of information from staff to students (Aberystwyth University 2016) or a structured, staff-led activity where discursive interactions with students are incidental rather than central to the pedagogy (St George's University of London 2016). The exclusion of student interaction from the definition of 'lecture' partially uncouples LC from the complexities entailed in data protection and confidentiality rights; however, it also potentially excludes a significant proportion of teaching in the humanities and social sciences where teaching is highly interactive. In HEIs which had not gone down opt-out or scaling-up strategies, instead restricting LC to a few rooms, the perception was that the risks of IP or data protection infringements could be managed by editing out student interactions and sensitive information before release (University of Bath 2016). Where lectures were highly interactive or recorded throughout whole modules or schools, such interventions were seen as disruptive to delivery or too resource-intensive if carried out after the event (University of York 2016).

Accessibility: When Inclusion Becomes Exclusion

The statutory obligation for HEIs to make reasonable adjustments for students with disabilities even after government had cut funding has been a major driver in the expansion of LC. However, it would be misleading to assume LC was a panacea for meeting diverse teaching and learning needs because what is a solution for some could become a new problem for others (JISC 2016). An audio recording of a lecture and a visual capture of the PowerPoint slides may help a student with dyslexia or dyspraxia, and it could impede the hearing impaired or visually impaired. Disability services in HEIs are still needed to provide transcriptions, subtitles or recorded narrations (University of York 2016). However, students who fall outside formal designations of disability could be harder to help. Psychologically inhibited students reluctant to contribute in class could become even more so knowing the teaching session would be recorded. It is unclear from the policy documents analysed how HEIs were addressing this.

Surveillance: Staff Performance and Student Engagement

The other dimension of the technology underexplored in the policies and submerged under the rhetoric of pedagogic benefits is the surveillance capabilities of LC. Panopto[2], the brand name of one of the most commonly used proprietary systems, evokes the surveillance machinery of the panopticon. At a surface level, we could read as seamless remote access where students can view recorded lectures anywhere, anytime. However, the panopticon associated with surveillance has the potential to be used as a mechanism of control and discipline (Foucault 2012).

The documents analysed presented the monitoring of student usage as benign, if not pedagogically relevant information on LC usage (Gorman 2011; Kadirire 2011). Aggregated data showing patterns of student usage were posted on some websites as 'evidence' of demand for LC and the popularity of recordings leading up to assessment periods (Gracey-McMinn 2015). While this may be a valid use of existing data to support teaching, the technology also enables staff to disaggregate material captured and hosted on password-restricted VLE, eliciting data on individual usage, and from there form conclusions about engagement or categorize students through their engagement levels. While such categorizations may appear value-neutral, some of the studies that have sought to derive taxonomies on student usage have ascribed pejorative labels such as 'one-hit wonders' (Phillips et al. 2010). We found little information in the policies examined that drew student attention to the routine capture of usage data, how it would be used or whether it would be disaggregated. There appeared to be no mechanism that would enable students to access recorded lectures but decline to have their usage data captured. The relevant information might be posted on the VLE site of HEIs, but it was not evident in the policies that we analysed. The subsequent introduction of GDPR may have implications for this form of surveillance.

While the potential for surveillance of individual students was underexplored, the potential to use the technology to monitor teaching performance was a cause of staff concern. Some HEIs sought to allay fears with assertions that recordings would not be used in 'performance management' (Reece 2013a). Others added a caveat to such reassurances with the warning that the recordings could be used as evidence in legal proceedings where alleged incidents are said to have occurred in the classroom or in cases of alleged misconduct (University of Birmingham 2016).

Summary Findings and Conclusion

We found that while digital technologies are unilaterally presented as adding value for students with the increasing consumerization of education, they present policy and governance challenges for institutions from pedagogy to the leaking of information onto public platforms.

The intense marketization of UK education and cost pressures particularly after 2014 has been accompanied by a more assertive appropriation of the technology to augment and record delivery by some HEIs (Jones 2019; Selwyn and Facer 2013). This has been complemented by increased investments in HEI-wide provisions of LC and a slide

[2] See https://www.panopto.com/.

towards 'opt-out' policies setting recording as the default position, mainstreaming LC as a defined element of classroom delivery whether these can be perceived impinging academic freedom and agency by educators. The governance of these technologies and the uncertainties presented (i.e. YouTube fears) are often placed on the shoulders of academics as something they have to manage actively including third-party copyrighted materials and class discussions on controversial issues. The issue of performance rights in the live delivery of content remains a contested issue in HEIs.

The new GDPR legislation which significantly tightens privacy protections in relation to new technologies may complicate the increasing incorporation of technologies into everyday teaching practices and delivery. The data presented here was collected pre-GDPR yet remains highly relevant partly because it provides an important snapshot of the assumptions towards technology, privacy and personal data at a particular moment in time. Some of the more cavalier attitudes towards recording classroom interactions captured in our data will need to be rethought and new policies devised. The comprehensiveness of the sector-wide survey enables subsequent studies to evaluate how HEIs have responded to the changed regulatory environment, before and after GDPR.

At the time of writing, many of the institutions surveyed had yet to come to terms with the full implications of these technologies and to enact comprehensive policies with which to protect staff and students from data infringements and privacy violations. As the full ramifications of lecture capture become clear, universities will need to be more attuned to the complexities of the digital economy and how these might affect academic freedom, increasing demands on intellectual labour and the complexities presented by the wired classroom.

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