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Book section

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INTRODUCTION

Digital technologies are now an integral feature of schools and schooling in ways that would have been hard to imagine even a few years previously.[1] Devices such as tablets, laptops and smartphones support a diversity of learning practices within the schoolhouse, at home and all points in-between. Classrooms and other formal learning environments are awash with digital hardware and software, and a growing amount of pedagogic work is conducted on a 'virtual' basis. In addition, the day-to-day management and administration of schools is underpinned by software systems that support and structure the actions of students, teachers, administrators, leaders and parents in a variety of ways. Notwithstanding the complexity of these socio-technical conditions, 'the digital' is now an expected and largely unremarkable feature of the contemporary school. As such, the proliferation of digital technologies into schools clearly merits renewed and sustained sociological attention. This chapter teases out some of the key ways in which digital sociology can help us make better sense of contemporary school.

THE NEED FOR A DIGITAL SOCIOLOGY OF SCHOOL

This collection of *Digital Sociologies* provides a timely call to arms for anyone interested in the critical study of schools and schooling. While critical social research on schools and technology has been conducted sporadically over the past thirty years, such work has taken place largely in a piecemeal fashion and has lacked a proper 'home'. The sociology of education (the obvious cognate field for such work) has proven to be surprisingly uninterested in technological matters and certainly lacking in technical know-how. Elsewhere, fields such as new media studies, communications studies and internet studies have been receptive to discussions of the technological transformations of education but ultimately lacked critical 'bite' and/or 'edge'. Conversely, STS has often felt (from our own experiences at least) too cliquey and preoccupied as an arena to pay sustained attention to something as 'applied' and prosaic as technology use in schools.

So we write this chapter in the hope that digital sociology could be the start of something better for researchers concerned with the critical study of schools and technology - a flag of convenience that interesting people and provocative ideas might gather around. Obviously, we need to remain mindful of the past two decades of education-related work in and around cyber-studies, internet research, webology and other precursors to the current turn toward digital sociology. Yet there are many reasons to believe that digital sociology has emerged at just the right time to deliver a sharper, more pointed focus on the political, economic, cultural and social aspects of late-modern 'digital society'. This is a moment in the

disciplinary development of sociology that the critical study of schools and technology needs to take full advantage of.

The case for a coordinated and comprehensive sociology of schools and technology is more pressing than ever – particularly given the continued limited scope of mainstream research on schools and technology. The bulk of academic work on this topic over the past thirty years or so has been stymied by an almost pathological focus on technology and learning (more specifically, the potential of technology to 'enable', 'assist', 'enhance' or even 'transform' learning). This is work rooted in the 'learning sciences', 'pedagogic sciences' and 'design sciences'. Of course, these areas are all core elements of 'Education' as an applied academic discipline. Yet the predominance of such concerns in discussions of schools and technology remains highly frustrating for anyone who is more politically-conscious and/or sociologically-minded.

Indeed, it could be argued that the bulk of the most significant issues around technology in school has *little or nothing* to do with 'learning' or 'pedagogy'. For instance, the current ubiquity of 'Learning Management Systems' in elementary, middle and high schools around the world has far less to do with issues of 'learning' than issues of 'management'. So why, then, do we not have a sustained tradition of critical scholarship that addresses schools and technology *beyond* matters of learning and pedagogy? Where is the research and writing that expands our understandings of how these are technologies of domination and control; alienation and exploitation; individualization and privatization? Where are the studies of how digital technologies are used to support and sustain the ongoing hollowing-out of compulsory education – not least trends of what has been termed 'conservative modernization', 'neoliberalisation' and 'corporate reform' of public schooling? Where is research that explores the role of the digital in reshaping schools along individualized, market-driven lines – reinforcing conditions of accountability, performance, efficiency, commodification, competition and so on?

TOWARD A DIGITAL SOCIOLOGY OF SCHOOL

The answers to these questions would surely come from a properly coordinated but appropriately combative 'digital sociology of school'. The remainder of this chapter sketches out some elements of what such a sociology could look like and how it might be pursued. In particular we will attempt to outline at least three specific aspects of digital sociology that can embolden the academic study of contemporary schools, i.e. …

1. Approaching the digital as problematic
2. Describing the everyday realities of schools and technology
3. Expanding the methodological imagination

#1. Approaching the digital as problematic

First and foremost, digital sociology is a means of suitably problematizing ongoing digitizations of schools and schooling – i.e. challenging what is taken for granted and exposing power differentials, injustices and inequalities. In short, a digital sociology of school should be driven by a state of perpetual unease and dis-satisfaction with how things are. Digital sociology does *not* simply involve a cynical and/or apathetic dismissal of the digital. Instead, digital sociology involves an active and committed skepticism. The starting point for any discussion is therefore the suspicion that 'everything is dangerous' … as opposed to the

conviction that 'everything is bad'. As had been argued before, this can be a productive stance to adopt:

> "My point is not that everything is bad, but that everything is dangerous, which is not exactly the same as bad. If everything is dangerous, then we always have something to do" (Michel Foucault, cited in Dreyfus & Rabinow 1982, pp.231-232).

A digital sociology of school therefore points to the complexity of schools and technology rather than striving to construct over-simplified 'answers' and 'good news'. In contrast to the hubris-driven solutionism that pervades the 'Ed Tech' industry (see Watters 2015), a digital sociology of school offers a space to raise a number of contentions and concerns that are usually *not* part of mainstream conversations about schools and digital technology. First and foremost are the competing agendas and vested interests at play within the push for increased technology use in school. Digital sociology therefore provides a powerful basis from which to problematize digital education as **ideology**. This recognizes that digital technologies in schools are not neutral but political; that they are carriers for assumptions and ideas about the future of society; that their design, promotion and use are all sites in which struggles over power are conducted. Digital sociology allows us to frame the use of digital technology in schools against long-standing and entrenched terms of ideological struggle over the distribution of power.

A second orientation that digital sociology brings to the table is the need to see schools and technology as **human experience.** In these times of augmented reality, the Internet of Things, additive manufacturing and so on, it can be easy to forget that digital technology use is something that is as human as it is technical. When we talk about digital technology we are often referring to the activities and practices that people do in tandem with technology, rather than the technologies themselves. Digital sociology therefore foregrounds discussions in terms of people's feelings and emotions, their (dis)pleasures and (in)sensitivities when encountering digital technologies during the course of their everyday lives. In the context of the school, then, students, teachers, administrators, leaders and parents are not simply neutral variables in any instance of school technology use. Instead, school technology is clearly something experienced within distinct human contexts and with distinct human consequences. Any investigation of the digital school is therefore an investigation of the human experience of digital technology use – i.e. people's everyday practices and perceptions.

This leads on to a third orientation that digital sociology brings to the study of schools – i.e. problematizing the **social structures and contexts** of technology use. Here, our concerns move beyond simply documenting the human thoughts and actions that coalesce around digital technology within a school. Instead, it compels us to consider questions of how these thoughts and actions came to be – how they were socially shaped and socially conditioned. As such, making full sense of individuals' responses to digital technologies in school requires a good understanding of the social contexts of contemporary schooling. Take, for example, the organizational structures of schools – from the timetabling and scheduling to the enactment of various policies such as common core or standardized testing. Broader contextual influences relate to social class, race, ethnicity and gender; the subtle (and not so subtle) ways that neighborhoods bump up against schools; the religious ethos or other philosophies that schools adopt (e.g. as 'sports school' or a 'caring community'). Of course, we should not see these structured social processes *wholly* in restrictive, punitive and dominating terms. Instead, digital sociology allows us "to grasp social processes in their dialectics and dynamics (instead of representing them as a concatenation of

the power pressures currently in the limelight)" (Bauman 2014, p.19).

All these different orientations toward the reconfiguration and reconstitution of schools through digital means foreground important questions. These range well beyond the usual 'What Works?' and 'What If?' questions that dominate mainstream academic work on education and technology. Instead, digital sociology points to the following types of far more significant lines of inquiry ....

- What meanings and understandings of education are being conveyed through digital technologies? How do these technologies disseminate ideas about political and economic structures? What is the language that is being associated with schools and digital technology?

- What forms of educational engagement are being promoted through digital technology use in schools, and what forms are being obscured and silenced? In whose interests does the common consensus about schools and technology work? How persuasive does this manipulation of understandings and meanings appear to be?

- What freedoms and unfreedoms are associated with digital technology use in schools? How are these being experienced by different individuals and social groups? To what extent are technologies in school situated in dominant structures of production and power? To what extent do technologies in schools disrupt dominant structures of production and power?

- How is the increased presence of digital technologies in schools altering the relationship between the individual and the commons, as well as the public and private? Are digital technologies fostering a sense of obligation and communal sense of education? Are all individuals self-responsiblized and empowered by technology use in schools?

- What are the emotional, 'human' outcomes of increased technology use in schools? In what ways are digital technologies enhancing or diminishing a sense of pleasure, engagement and enchantment with schools and schooling?

- What are the continuities and discontinuities between 'new' forms of digital schooling and the forms of school that preceded? In what ways are existing practices and processes altered? In what ways are existing structures and relations superseded altogether?

#2.   Describing the everyday realities of schools and technology

So where should these questions be directed? What specific school-related topics and concerns does digital sociology point us toward? As is evident throughout this book, one of the key strengths of digital sociology is an ability to properly describe and question the everyday realities of digital society in terms of what C.Wright Mills (1959) identified as private troubles *and* public issues. There are clearly a number of public and private aspects of contemporary schools and schooling that digital sociology alerts us to. Perhaps most obviously, digital technologies impact upon many of the core elements of education – not least the generation and communication of knowledge and, it follows, the ways in which learning and understanding take place. In this sense, digital technologies support

different practices, literacies and 'ways of doing' within schools that previously might not have been valued and/or privileged.

Digital technologies therefore clearly mediate the social relations and hierarchies within a school. As such, digital technologies need to be seen as a key site for varied forms of identity work by young people and adults alike. Digital technologies are also a focus for ongoing struggles between institutions and individuals – replicating and reinforcing tensions between structure and agency, regulation and resistance. In terms of time and space, digital technologies blur boundaries between 'school', 'home' and other social institutions and settings. More prosaically perhaps, digital technologies are associated with ever-changing materialities and 'stuff' of schools – the physical environments, the material objects within them, the spatial arrangements that continue to constitute the school or the classroom as a 'place'.

All of these are obvious but important issues that digital sociology reminds us to foreground in any analysis of schools and the digital. That said, it is perhaps worth spending more time outlining some (perhaps less obvious) areas related to the politics of contemporary schooling that we feel are not often discussed. These are additional areas of concern that the current digital sociology turn does a good job in directing our attention toward. In a little more detail, then, these issues include ...

i. The political economy of schools and technology

Digital technologies have extended the commercialization of schools into new realms. From Microsoft and Google, through to News Corporation and thousands of far smaller 'Ed-Tech' start-ups, digital technologies have positioned for-profit interests at the center of how public schooling is now funded, organized and delivered. This variety of enterprise reflects the fact that schools and technology is now a very big business, with global sales of K-12 instructional technology reaching $13 billion in 2013. There is a clear need here for investigations that seek to simply 'follow the capital' associated with the increased use of digital technology in schools. As the infamous case of the $1.3 billion iPad program in LAUSD continues to illustrate, the use of digital technologies in schools is driven by an 'education-industrial complex' (Picciano and Spring 2013) of IT industry and publishing businesses, foundations and think tanks, and other vested interests.

As such, digital sociology reminds us to constantly challenge the private sector values that underpin much of what is blithely seen as the inevitable digital reform of public schooling. Take, for example, how digital technology and the imagined imperative of 'the digital' is being used as justification to redesign, reform and re-orientate the nature, form and values of public schooling. Philanthropic foundations, transnational corporations, venture capitalists and other 'edu-prenuers' continue to invest substantial amounts of time, finance and spin in attempts to 'fix' and/or 'disrupt' our supposedly 'broken' school systems through technology-based approaches. These include promises of technology-driven 'personalization', games-based-learning, 'flipped classrooms', maker culture, 'twenty-first century skills' and so on. These also include new blueprints for schooling along the lines of Altschool, Quest-to-Learn, P-TECH and even 'Steve Jobs Schools'. Reversions and innovations such as these might well be desirable and beneficial, but surely require sustained scrutiny and critique. Many of the 'new' forms of digital education being promoted by commercial interests are based undoubtedly around different agendas and ideologies than we are used to seeing in public education. These shifts in tone and emphasis may, or may not, be

a 'good thing'. Yet these are issues that require more recognition, debate and scrutiny from within the educational establishment.

ii. The management and governance of schools

Digital technologies are also entwined with the changing governance of schools – particularly as tools through which principles of 'performance', 'effectiveness' and 'accountability' have been enacted. Alongside the proliferation within schools of computerized systems relating to 'management information' and 'business intelligence', are various systems that support externally-facing public scrutiny of schools. This ranking and comparison is illustrated, for example, in the circulation of data from OECD's sixty-five country 'PISA' measurements, or the Australian government's nationwide 'MySchool' website. Schools are also subject to a variety of internal regimes of technology-based governance. For example, school decision-making in a range of domains – from curriculum content to teacher hiring - is increasingly dependent on systems of algorithmic modeling, calculation and recommendation. Much of this has been driven by the increased prominence of digital data – thus raising concerns over the 'datafication' of schooling (Lingard *et al*. 2014). Thus we are warned of "schools and districts becom[ing] data farms, providing an unending supply of harvestable data" (Dean 2014, p.19). Similarly, schools are seen to have been rendered "digitally rendered as a vast surface of machine-readable data traces" (Williamson 2016, n.p).

Of course, such uses of data can be justified as supporting active and efficient modes of governance and management. Data might well be enhancing organizational preparedness and response, informing cross border planning and/or whole institution management (Kitchin 2014). Nevertheless, a range of questions need to be leveled *against* such possible benefits. These include issues of reductionism and the privileging of an 'instrumental rationality' that presumes the disaggregation of complex social and cultural situations into neatly modeled and calculable problems that can be addressed through computational means (Mattern 2013). Further questions are also raised regarding the exacerbation of unequal social relations between powerful and non-powerful groups through data-based calculations and judgments (Selwyn 2015). In all these terms, data-based governance needs to be subject to close critical scrutiny.

iii. The digital labor of schools and schooling

Schools are connected to work in a number of ways. On one hand, schools play a role in preparing future workers, responding to economic imperatives of employability and so on. Any account of schools and digital technologies must therefore take such issues into account – updating Bowles and Gintis' (1976) account of the relations between capital and education. Indeed, the correspondence between work and school has long been seen to extend beyond knowledge and curricula into all aspects of social relations, interactions and identity formations. One key set of issues relating to the digital school, therefore, is how these conditions and correspondences might be reinforced and/or reconfigured in an age of 'immaterial labor', 'cognitive capitalism' and 'knowledge economies'. These new modalities are likely to influence the way that 'work' now takes place within schools … but in what ways and to what ends?

On the other hand, schools must be seen as sites of work for teachers, students, and administrators alike. What then are the 'digital labor' processes involved in the increased use of digital technologies within schools? For example, with online technologies increasingly used as a means of sharing, re-purposing and out-sourcing pedagogic content, how are digital technologies implicated in the

increased division of labor and alienation of teachers from their teaching? Digital technologies are also implicated in the increased blurring of previously binary distinctions between work and leisure, school and home, productive-work and busy-work. It is also important to explore the role of digital technology as a growing site for the automation of school work – from the development of automating grading systems for tests and essays, to 'teacher proof' personalized learning systems that regulate the individualized instruction of each student. While such 'innovations' are often justified in official terms of increased efficiency and rationalization, digital sociology raises the possibility for alternate accounts of such technologies in sustaining schools as sites of increased exploitation, performativity and alienation.

iv. The surveillance of schools and schooling

A further aspect of digital technologies and schools that demands heightened attention is the surveillance processes and practices that now pervade public schools. Common forms of technology-based school surveillance include the use of CCTV (closed circuit television) throughout school campuses, online monitoring techniques, the use of smart cards, RFID (radio-frequency identification) tags and biometric tracking. Through such technologies, modes of measurement and control of school populations have increased steadily – albeit attracting less controversy and resistance than has been the case with the implementation of surveillance technologies in society more generally.

Indeed, technology-based surveillance is increasingly being justified in terms of enhancing the pedagogic efficiencies of schools and classrooms. For example, self-generation of data by individuals has led to talk of the 'sentient school' where amassed forms of personalized surveillance data can be used to direct teaching and learning on a real-time responsive basis (see Lupton 2014). In contrast, digital sociology offers a means of exploring critically the everyday conditions of surveillance in school. In particular, it guides us to question the range of surveillance practices and processes at work within schools, and consider how these are variously encountered and experienced by students, teachers, administrators and other members of a 'school community'. It also allows us to ask questions about what is occurring within prevailing conditions of watching, sorting, and controlling. One significant concern is how surveillance in schools has shifted from a panoptic to a post-panoptic state, specifically with regards to the flattening out of power hierarchies as a result of the incorporation of vertical and horizontal modes of surveillance. Digital sociology has already spent much time analyzing how the nature and form of surveillance has changed. The key challenge here is to explore how these conditions are in evidence within schools.

#3. Expanding the methodological imagination

In tandem with these conceptual concerns, we also need to consider the methodological directions of the digital sociology turn. In short, digital sociology offers researchers a range of digitally-attuned methods and methodologies that can be used to address the questions and issues just outlined. Schools and digital technology is an area of research that would certainly benefit from a methodological refresh. Indeed, the fast-moving nature of technology use within schools demands that researchers think expansively and imaginatively about how school research in 'done'. Put bluntly, it is becoming increasingly apparent that any form of social research seeking to capture what could be termed 'the street life' of digital technology use (Hall 2008) needs to look well beyond the survey, interview, observation and field note as its main tools of inquiry. These once innovative and insightful techniques now come across as decidedly tired ways of

engaging with digital contexts and digital issues. If the questions and concerns just raised about schools and the digital are to be properly addressed then we are going to have to do (research) better.

Clearly, there are increasing opportunities in school research to apply the emerging methods and techniques from the **computational social sciences**. Certainly, many of the school-based applications of technology just described result in the generation of large data-sets relating to individuals, institutions and whole school systems. The opportunities for the modeling, simulation and analysis of school-related phenomenon is clear, especially with school districts and cities beginning to release data on public school systems on an 'open data' basis (Stodden 2014). Initial work in this direction is evident, for example, in the data mining and modeling of municipal data-sets derived from annual surveys of parent, student and teacher perceptions of NYC public schools (Wellington 2015).

Such techniques also point to the focusing of empirical research on the coded elements of technology use. Indeed, with much of contemporary schooling taking place online and within systems such as learning management systems, management information systems and so on, there is a clear need to thoroughly **research the digital systems, online environments and coded spaces** that now constitute 'school'. This is a point that has been well made by writers in the fields of software studies and platform studies. As Lev Manovich (2013, p.2) puts it, "software has become our interface to the world, to others, to our memory and our imagination – a universal language through which the world speaks, and a universal engine on which the world runs". The need remains for a digital sociology of school that properly interrogates the code, data and programmed architecture of the virtual aspects of contemporary schooling.

While digital sociology has been enthused by highly quantitative approaches to data analysis, opportunities also exist for more detailed, deliberative qualitative approaches to exploring the lived experiences of individuals within information systems and online environments. As every local school becomes more of a distributed organization, inspiration might also be taken, for example, from the **'trace ethnography'** of digital data (Geiger & Ribes 2011). This is qualitative research that focuses on the detailed trace data generated and collated by online systems, such as transaction logs, version histories, institutional records, conversation transcripts, and source code. Observation of how these various forms of data have been (re)constituted and (re)circulated within various systems can yield rich insights into the online practices, collaborations and coordinations of contemporary schooling – from virtual forms of parental 'engagement' through to the organization of pedagogic work. As Geiger & Ribes (2011, p.1) observe:

> "Analysis of these detailed and heterogeneous data ... can provide rich qualitative insight into the interactions of users, allowing us to retroactively reconstruct specific actions at a fine level of granularity. Once decoded, sets of such documentary traces can then be assembled into rich narratives of interaction, allowing researchers to carefully follow coordination practices, information flows, situated routines, and other social and organizational phenomena across a variety of scales".

Similarly, there is much that the study of schools and technology can take from recent advances in the area of digital ethnography (Pink *et al*. 2015). The participatory and highly mobile nature of digital video and audio creation, for example, offers a ready means of researching the everyday places and practices of digital schooling. In particular, digital recording devices allow school-based research work to be conducted 'on the move'. One means of doing this is to ask

people to purposively walk around their schools – therefore representing their school environments to researchers and collaboratively exploring how digital schooling is experienced in movements. Sarah Pink's (2009) research has made good use of such 'place-making walking tours' and 'collaborative video touring' where participants lead camera-wielding researchers around their intimate environments.

Digital ethnography also points to the empirical study of the sensually rich and varied nature of technology use, i.e. **'multi-sensory' research** that captures the visual, auditory, olfactory, haptic and tactile dimensions of any digital experience. Digital schooling is obviously experienced through all senses – from the bodily movements that take place around digital technologies; the three-dimensional shaping and textures of digital devices; the beeps, clicks, whirrs and other noises of technology use; the heat and smells generated by thirty computers packed into one small room. There are many ways that technology in schools can be investigated in these terms - for example, through the use of decibel meters and light readers, as well as the use of audio editing software to visualize sound. Some studies have employed fine grained 'multimodal' analysis of video and still images to capture the rhythms, moods, and textures existing in schools and classrooms. Opportunities also exist to make use of participatory GIS data to map movements of people and devices, or perhaps software recording traces and trails of touch on touch-responsive technologies. All told, digital sociology reminds us that empirical research should be a multisensory practice.

With regards to another of our earlier concerns, more attention also needs to be directed toward the researching of the political economy of digital schooling. Well-established methods such as **critical discourse analysis** offer an ideal means of interrogating the (over)selling of technology to schools, and identifying the component actors and their relationships, as well as exploring underpinning values and agendas. Similarly, **policy network analysis** offers a ready means of investigating the interconnections of vested interests in policymaking, lobbying and agenda setting (see, for example, Hogan and colleagues' [2016] analysis of the education policy activities of Pearson). Increasingly, these forms of research that focus on the analysis of digital texts make good use of digital analytical tools - from semantic analysis and text matching applications through to network modeling software. In all these guises, then, the concerns of digital sociology should translate into a pragmatic, varied and eclectic approach to our understandings of research methods and methodology.

Finally, the attention of schools researchers might also be directed toward so-called **'live methods'** approach – much of which is concerned with the imaginative empirical use of techniques. As Les Back and colleagues' recent writing has explored, the 'Live Methods' manifesto illustrates research approaches that are creative, playful and deliberately provocative (Back & Puwar 2012). Researchers are encouraged to be 'artful and crafty' – developing empirical methods and 'cultural probes' that test and reinvent relations with social settings and environments. Examples of these methods include Mike Michael's (2012) encouragement of 'idiotic' methods, such as the 'speculative design' of provocative objects and probes that might disrupt or misbehave in social settings. Michaels suggests, for example, the programming of nonsensical automated Twitter 'bots' or the mailing of disposable cameras with specific instructions to photograph the 'spiritual center' of one's everyday environments (see also Wilkie *et al*. 2015). Other examples include the technology-supported production of 'literacy design fiction' (see Singh and Maughan in this volume).

So why not make use of similar 'de-sign' methods that allow the people working within schools to speculate implausibly but imaginatively about digital educational futures? Why not explore the research insights that might arise from

using digital technologies to engage in fiction-writing, film-making and other creative artistic pursuits? 'Live methods' highlights the empirical opportunities that can result from engaging more fully with the digital aspects of research settings that are already *in situ*. Thus it makes sense for researchers to make use of the hundreds of smartphone-based recording devices that are present in every school context, exploring the data trails emanating from even the most inconsequential digital encounter. Such devices also offer a counter-methodology to the concerned raised earlier regarding the surveillance of students within schools. Digital sociology reminds us that researching the digital in schools does not *have* to be a sterile exercise in 'assassinating' the life out of social contexts.

CONCLUSIONS

We hope that this brief overview provides some hope and inspiration for further refinements of these ideas and approaches. Digital sociology clearly lends a renewed vigor to thinking about how best to engage with schools and the digital – offering researchers a wealth of critical perspectives, probing questions and eclectic methods of inquiry. We are confident that digital sociology can form the basis for insightful, intelligent and suitably inventive research and writing around the topic of schools and technology. Digital sociology certainly challenges us to broaden our attentiveness to the political, moral and aesthetic conditions of schools and technology. Digital sociology also reminds us that pursuing academic work in this manner requires an imaginative bent – i.e. a creativity, reflexivity, craftiness, awareness and mindfulness that is often lacking from education research. Digital sociology also reminds us that we need to engage fully with all aspects of the digital both as research topic *and* as research resource.

Much of what has been suggested in this chapter relates to a borrowing of concepts, methods and sensibilities from other areas of digital sociology – not least work on divisions of labor, inequalities, critical data studies, surveillance and governance. Perhaps most cognate to the school-specific issues outlined in this chapter is the notably larger literature on digital technology and higher education. Indeed, academic writers and researchers have proven much more keen to a sociological gaze towards the digitizations of university and college settings. It is telling, for example, that our chapter in *Digital Sociologies* sits alongside four chapters on the digital sociologies of higher education. These cover topics as diverse as the datafication of universities (see Jeffrey Johnson in this volume); digitized institutional assumptions of race (Monita Mungo); the entwinement of social media platforms with the cultural complexities of student life (Francesca Tripodi) and the use of digital media to transform the careers of female faculty (Kijana Crawford and colleagues). Similarly all three editors of *Digital Sociologies* have written critically on various problematic aspects of digital higher education (Cottom 2016; Daniels & Feagin 2011, Gregory 2013).

Such work has some resonance with studies of compulsory schooling in the digital age, not least with regard to common concerns over the neoliberal rationalization of educational process and practice; corporate reforms of public education; and the changing nature of academic labor. Yet schools are distinct from higher education in a number of important ways – particularly in terms of compulsion and control; the mandated nature of participation and presence; the structured nature of school knowledge, communication and subjectification. While schools are not *wholly* distinct from post-compulsory education institutions they certainly require separate sociological scrutiny and sense-making. While it might well be easier for digital sociologists to write, research and reflect upon the educational settings which they are most familiar with, widening these concerns to compulsory schools (the only sector of education that touches the lives of the

majority of the world's population) is surely necessary for the mainstreaming of digital sociology within the social sciences.

In this spirit, then, it is important to remember that digital sociology is an ideal means of offering insights into **'thinking otherwise'** about schools in the digital age. Lest we have given the impression, digital sociology is certainly not an exercise in defeatism. On the contrary, foundational to any sociological study should be a "yearning for further improvement" (Bauman 2014, p.26). Sociological investigations of the school therefore need to be directed toward the residual hope of change. Given the state of flux of many aspects of contemporary schools and schooling, the need for critical research to involve itself in the question of 'where do we go from here?' is essential. There is little value in *only* pointing out that things are clearly not as good as they should be. A digital sociology of school is not an exercise in defending the *status quo* or denying the need for change. Of course, few sociologists would deny that schools as they currently stand are sites for numerous injustices and replicators of numerous inequalities. Yet this is no reason to give up on the idea of schools altogether, or dismiss them as broken, anachronistic places that require complete replacement. Instead, digital sociology offers a powerful means to work with schools rather than work against them – echoing bell hooks' (1994, p.207) exhortation that "the classroom, with all its limitations, remains a location of possibility".

Thus alongside documenting the patterns of power, politics, inequality and injustice implicated in the use of digital technologies, any digital sociology of school should also be concerned with constructing *alternative* trajectories. If we are at odds with the conditions to be found in the contemporary 'digital school' then what alternatives might there be? How, then, could digital technologies be used to *counter* rather than compound dominant cultures of inequality, competitive individualism, performativity and/or exploitation? What would meaningful, respectful and/or pleasurable forms of digital schooling look like? What forms of digital tools, techniques and practices would be required to possibly empower otherwise sub-ordinated groups? These are all questions that educators and education researchers need to consider as the digitization of schools and schooling continues to gather momentum.

Above all, digital sociology reminds us that the critical study of schools and technology requires new ideas, new sensibilities and new techniques. In a practical sense these are most likely to be led by the introduction of new conferences and publication outlets, as well as a renewal of research training within educational research. Yet it is important to recognize that a digital sociology of school is not simply a summation of [Digital + Sociology of Education]. Instead, this needs to be *more* than the sum of its parts. In short, a digital sociology of school must be entered into as a new set of practices, perspectives and preoccupations. As Alexander Galloway has observed of 'new' media studies in general …

> "[We need] to cease adding 'new media' to existing things. Media are transformative. They affect conditions of possibility in general. Mediation does not merely add something to the existing list of topics that scholars study. **It changes the practice of study itself**" (Galloway *et al.* 2014, p.1).

This chapter has *not* described approaches, questions and methods that can be engaged with simply by 'doing the same old thing' that the sociology of school has always done. On the contrary, our call to arms for a socially-aware, politically-conscious, theoretically-driven digital sociology of school challenges sociologists to think carefully about what it is they are doing when researching the digital. Moreover, it challenges us to strive to be imaginative in our thinking. In all these

ways, then, there is much to be gained from bringing digital sociology to bear on the academic study of schools. As such, it is vital to keep these conservations going.

Acknowledgement

Footnote

[1] In making these arguments we are well aware that we are discussing the concept of 'school' from the privileged position of (over)developed countries such as the US and Australia. At a rudimentary level, it is important to remember that well over 50 million children are still denied the right to basic primary education and therefore classed as 'out of school'. Concurrently, it is important to remember that around half the world's population has no direct experience of using 'the internet' at all. Issues of unequal access to schooling *and* digital technology remain major concerns around the world.

References

Back, L. 2012.   Live sociology: social research and its futures. in Back, L. and Purwar, N. (eds)   *Live methods.* London, Wiley-Blackwell

Bauman, Z. 2014.   *What use is sociology?* [interviews with: Jacobsen, M. and Tester, K.] Cambridge, Polity

Bowles, S. and Gintis, H. 1976. *Schooling in Capitalist America: Educational Reform and the Contradictions of Economic Life.* New York, Routledge

Cottom, T. 2016. *Lower ed: how for-profit colleges deepen inequality in America.* New York NY, New Press

Daniels, J. and Feagin, J. 2011. The (coming) social media revolution in the academy. *Fast Capitalism*, 8(2) www.uta.edu/huma/agger/fastcapitalism/8_2/Daniels8_2.html [retrieved 14th December 2015]

Dean, J. 2014. *Big data: accumulation and enclosure* - www.academia.edu/7125387/Big_data_accumulation_and_enclosure [retrieved 14th December 2015]

Dreyfus, H. and Rabinow, P. 1982. *Michel Foucault : Beyond Structuralism and Hermeneutics.* Brighton, Harvester,

Galloway, A., Thacker, E. and Wark, M. 2014. *Excommunication: three inquiries in media and mediation.* Chicago, Chicago University Press

Gieger, S. and Ribes, D. 2011. Trace ethnography: following coordination through documentary practices. *Proceedings of the 44th Annual Hawaii International Conference on Systems Science* - www.stuartgeiger.com/trace-ethnography-hicss-geiger-ribes.pdf [retrieved 14th December 2015]

Gregory, K. 2013. The teaching of labor and the labor of teaching: reflections on publicness and professionalism. *Journal of Interactive Pedagogy* 3, 12th November - http://jitp.commons.gc.cuny.edu/the-teaching-of-labor-and-the-labor-of-teaching-reflections-on-publicness-and-professionalism/ [retrieved 14th December 2015]

Hall, G. 2008. *Digitize this book!* Minneapolis MN, University of Minnesota Press

Hogan, A., Sellar, S. and Lingard, R. 2016. Commercialising comparison: Pearson puts the TLC in soft capitalism. *Journal of Education Policy* [forthcoming]

hooks, b. 1994. *Teaching to transgress.* New York, Routledge

Kitchin, R. 2014. *The data revolution.* London, Routledge

Lingard, R., Sellar, S. and Savage, G. 2014. Re-articulating social justice as equity in schooling policy. *British Journal of Sociology of Education*, 35(5):710-730.

Lupton, D. 2015. Data assemblages, sentient schools and digitised health and physical education. *Sport, Education and Society*, 20(1):122-132.

Manovich, L. 2013. *Software takes command*. London, Bloomsbury

Mattern, S. 2013. Methodolatry and the art of measure. *Design Observer: Places*, 5. https://placesjournal.org/article/methodolatry-and-the-art-of-measure/ [retrieved 14th December 2015]

Michael, M. 2012. 'Toward an idiotic methodology: de-signing the object of sociology', *Sociological Review*, 60 (s1):166–183

Mills, C. 1959. *The sociological imagination*. Oxford, Oxford University Press [new edition: 2000]

Picciano, A. and Spring, J. 2013. *'The great American education-industrial complex: ideology, technology and profit'* New York, Routledge

Pink, S. 2009. *Doing sensory ethnography*. London, Sage

Pink, S., Horst, H., Postill, J., Hiorth, L., Lewis, T. and Tacchi, J. 2015. *Digital ethnography principles and practice*. Thousand Oaks CA, Sage

Selwyn, N. 2015. Data entry: towards the critical study of digital data and education. *Learning Media & Technology*, 40(1):64-82

Stodden, V. 2014. Enabling reproducibility in big data research. In Lane, J., Stodden, V., Bender, S. and Nissenbaum, H. (eds) *Privacy, Big Data, and the Public Good*. Cambridge, Cambridge University Press (pp.112-131)

Watters, A. 2015. *The monsters of education technology*. Kindle, Amazon Media

Wellington, B. 2015. Safe hallways, successful tests. *I Quant NY*, 22nd March http://iquantny.tumblr.com [retrieved 14th December 2015]

Wilkie, A., Michael, M. and Plummer-Fernandez, M. 2015. Speculative method and Twitter: Bots, energy and three conceptual characters. *The Sociological Review*, 63: 79–101

Williamson, B. 2016. Digital education governance: data visualization, predictive analytics, and 'real-time' policy instruments, *Journal of Education Policy* [forthcoming]

Further reading

A few previous attempts to rally a sociology of schools and technology during the past thirty years or so …

Hodas, S. 1996. Technology refusal and the organizational culture of schools. In Kling, R. (ed) *Computerization and Controversy. Value Conflicts and Social Choices* San Diego, Academic Press (pp.197-218)

Kerr, S. 2003. Sociology and educational technology. in D. Jonnasen (ed.), *Handbook of research for educational communications and technology*. (2nd ed.). Mahwah NJ, Erlbaum (pp.72-120)

Selwyn, N., and Facer, K. 2014. The sociology of education and digital technology: past, present and future. *Oxford Review of Education*, 40(4):482-496.

Young, M. 1984. Information technology and the sociology of education. *British Journal of the Sociology of Education*, 5(2):205–210