Introduction: Literacy in the digital university – critical perspectives on learning, scholarship, and technology

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Background to the book

The last decade has seen a proliferation of applications of information and communication technologies in all educational sectors. This volume speaks into this broader context and the convergence of technological change with structural reorganisation that has affected post-compulsory education worldwide. The impact of new technological practices in colleges and universities can be seen right across the spectrum of professional activity, from the digitising of management information, to the use of virtual learning environments in teaching and learning, to the development of digital scholarship in academic research (Borgman 2009). The nature and scale of this impact varies from institution to institution. In one setting, we might find frustrated learning technologists bemoaning the existence of academic 'dinosaurs' who continue to resist using tools even as commonplace as email and the internet. In another, teachers who have prided themselves on being early adopters of the latest technologies suddenly face the 'unbundling' of their institutions and the digital outsourcing of many of their roles (Katz 2008). Elsewhere, teachers, researchers and administrators, are quietly getting on with using technologies, day to day, and developing new ways of working, which, whilst seemingly unremarkable to them, are potentially very significant in terms of change in the production of knowledge in the institution as a whole. Digitisation thus makes its mark within universities and colleges in many different ways: in research and teaching;

course design and assessment; professional and academic development; enrolment, registration and ongoing student support processes; budgeting and marketing. At the same time, structural reorganisation has made it increasingly possible for other interest groups with different agendas outside the university, to reach in and effect changes that reflect their own interests and those of wider political and economic communities. Employers directly influence the knowledge curriculum, as the content and orientation of professional courses is prescribed by external professional bodies working in collaboration with private service providers to offer professional accreditation. Global media and IT companies directly shape conditions of teaching and learning through the design of applications and online environments that rapidly become indispensable to the flexible learning required in the modern age. Developments of this kind, as we have argued elsewhere (Goodfellow & Lea 2007), can sometimes serve to conflate aspects of pedagogy with administrative and managerial activity, concealing, at the same time, critical differences between the social practices of different institutional communities.

The Digital University

It is this broad context of technological and structural change in the post-compulsory sector that we are looking to encapsulate in the concept of the 'digital university' – an emerging context in which fundamentally different forms of social practice around learning and technologies jostle together and strain the boundaries of institutions and the professional communities who inhabit them. It is the intention of this volume to explore and critique some of the manifestations of this upheaval, from the perspective of teachers, learners, researchers,

educational developers, policy-makers and managers, all of whom are likely to be experiencing, and some of whom are responsible for initiating, the introduction of new technological practices across the tertiary sector. Many of these groups and individuals are bearing the brunt of technology-driven change in their work with little support, as their institutions have often been slow to engage with broader questions concerning the way this 'new communication order' (Snyder 2001) impacts on social relations. In part, the lack of institutional engagement with the social and cultural implications of new technological practices has been because of an overriding focus on the role of these technologies in organisational change required to meet wider societal and governmental objectives. Such objectives include the 'massification' of higher education, the development of flexible provision, and the introduction of greater competition in a global market. We have seen considerable technical and managerial effort and resource put into the creation of virtual learning environments to supplement or replace bricks-and-mortar infrastructure, but far less corresponding attention paid to professional and educational development and supporting staff as they begin to adapt their teaching and learning practices to the conditions of digital interaction (McAvinia 2011). Similarly, we have seen considerable investment in the digitisation and electronic delivery of information about the institution, the curriculum and its procedures, leading to increased accountability and audit, but much less in researching the particular challenges that technologies present to learners and teachers pursuing learning goals in particular subjects and disciplines (Goodfellow & Lea 2007).

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Literacy

We also believe that the absence of a critical social perspective on the digital in post-compulsory education is due to a more general sidelining of the issue of *literacy* at this level. This may be because many associate the concept with the development of print-based reading and writing skills in primary and secondary education, and view the emergence of digital modes of communication at tertiary level as a different (and perhaps more fashionably up-to-date) issue. In contrast, a particular interest of many of the contributions to this volume is the way in which the new communication order in the university is actually bound up with established literacy practices, in research and publication, teaching and assessment, management and academic service, public engagement and external relations. By literacy practices we mean activities around textual production - texts and practices which taken together are recognised as typical and purposeful for a community. Although it is true that the word 'literacy' is increasingly being used to refer to different aspects of communication in the wider world (media literacy, emotional literacy, business literacy etc.), it is in its association with the production of knowledge in textual form that it remains central to educational practice, whatever the media and material dimensions involved.

Researchers coming from a tradition of critical applied language studies in education have long argued for a recognition of the role of literacy practices in meaning-making throughout the university (Ivanič 1998; Jones, Turner & Street 1999; Lea & Stierer 2000; Turner 2011). They have stressed the essentially social character of textual communication, its complexity and diversity, and its ultimate provenance within the practices of all members of an institutional

and/or disciplinary community, not just the students (Lea & Stierer 2009; Lillis & Curry 2011). This continues to be the case when the notion of text is broadened to encompass meaning-making in and around the different modes supported by digital media (Bayne 2008; Lea & Jones 2010; McKenna 2012; Williams 2009). Academic literacies in digital contexts are now associated with a multiplicity of social practices involved in creating, communicating and evaluating textual knowledge in all these modes (Goodfellow 2005; Lea 2007: Lea & Jones 2011; Goodfellow 2011, McKenna 2012). Other voices from the 'new literacy studies' (e.g. Barton 2001), 'multiliteracies' (Cope & Kalantzis 1999), and 'new media literacies' (Lankshear & Noble 2003) communities have shown how participants in academic learning communities are also informally engaged with meaning-making communities outside their institutions, whose digital practices may be quite removed from those of the school or academy (Sefton-Green et al 2009, Williams 2009). For all these researchers and practitioners the concept of literacy has broadened far beyond the notion of an individual learner's acquisition of skills in the decoding and encoding of printed language.

Broadening the 'Literacy' debate

In tertiary education, however, much of the policy-informed activity around professional development, pedagogy and the assessment of learning outcomes continues to embrace a predominantly normative individualistic cognitive skills agenda (see Goodfellow 2011 and Lea 2013, for discussions of this position). It is in recognition of this tension between 'literacies' and 'skills', and out of a belief that the latter perspective actually sells short learners (and teachers) who are required to operate across a variety of digital practice settings, that this volume

brings together researchers and practitioners from different disciplinary backgrounds to explore the changing and expanding meaning of literacy in the digital university. Our starting point was to identify groups of researchers who have been involved in research projects that approach issues of literacy, learning and technology through contrasting conceptual and methodological lens, identified broadly as critical applied language and literacy studies, learning technology, and cultural media studies. A group of such scholars and practitioners based in the UK came together for a series of seminars with the title 'Literacy in the Digital University', funded by the UK Economic and Social Research Council between October 2009 and April 2011 (ESRC 2011). This volume builds on the discussions and debates that took place in these seminars, supplementing them productively with more recent relevant, topical and related work in the areas of media and information literacy and e-learning. This has enabled a dialogue across the volume between contrasting approaches, and the potential development of new thinking and methodologies for researching practice in the digital university. There is inevitably some contested space in the positions of these contributors and this emerges most strongly around the notion of what literacy means in digital contexts. But despite differences in theoretical and methodological assumptions, there are also major points of agreement. The notion of learning practices, for example, emerges as a key concept which cuts across different approaches and supports different pragmatic agendas. Similarly, there is much agreement about the implications of the concept of the 'digital university' for understanding the shifting boundaries between and within existing institutions. In its attempts to circumvent differences in disciplinary and practical orientation and bring different

perspectives together, the volume offers innovative conceptualisations of the institution and its texts, technologies and practices. Many of these are reflected in the integration of familiar terms into new concepts. So, for example, 'literacy 'and 'the digital.' are absorbed into emerging and hybrid concepts such as 'digital scholarship', 'the borderless institution', and 'post-human pedagogies'. In all cases, the discussions and insights of the authors of the chapters in this book have a direct bearing on the way that literacy and the value placed on it at tertiary level is conceived of in response to the changing communications environment, offering a new lens on existing research and practice.

The Structure of the Book

All the chapters included here were specially written for this volume, and relate to ongoing work in the tertiary sector internationally. The authors have addressed many of the issues and topics discussed above, each from their own particular disciplinary and practice perspective. This offers a challenge for us as editors as to how to organise the contributions and the relationships between them in a meaningful way that does not perpetuate divisions between disciplinary, theoretical and practical orientations. Since one major objective of the volume has been to highlight both agreements and differences about the meaning of literacy, understandings of the digital, and the nature of the university, and all the chapters relate in some way to all of these themes, we have decided not to attempt to group them according to topic but instead to arrange them in a way that allows the main focus to shift across the themes in successive chapters. In the following synopsis we take each of the themes 'Literacy', 'the Digital', and 'the University' and discuss the ways that the different

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chapters address them. We hope that readers may find this useful in helping them to determine which of the contributors is addressing topics that are of most immediate interest to them, but also which are dealing with other topics which have an unexpected connection.

Literacy

Framing this book with a literacy lens has not been without its problems. Literacy as a term is often elided with a generalized skill and capability and no more so than in the arena of digital literacies (see Goodfellow 2011, Lea 2013). This approach underpins the orientation to literacy in some of the chapters. An alternative is offered by those who intentionally use literacies in the plural in order to signal the multiplicity of contested and contextual, social and cultural practices around reading and writing. More recently this perspective has begun to embrace textual practice in digital contexts (Lea & Jones 2011; Mc Kenna 2012). Its roots can be found in the work of New Literacy Studies (NLS) (Street 1984; Barton 1994; Gee 1996), which has underpinned the work of academic literacies researchers for the last two decades (Lea & Street 1998; Ivanič 1998; Lillis 2001; Lea 2008).

Adopting this theoretical and methodological perspective, Colleen Mc Kenna and Jane Hughes highlight how authorship is key to understanding literacy practices in the digital university. They explore this digital textual world in terms of authorship, commodification and intellectual property and point to the potential of digital authorship to subvert conventional print-based literacy practices. Central to their argument is the provisional nature of digital texts; the ease with which they can be

changed, copied, dismantled and reassembled. They highlight the implications of this for understanding literacy practices in terms of what technologies actually do to writing practices. Taking the example of plagiarism detection software (PDS), they argue that the technology dominates; the result being that complex textual practices embedded in the notion of what it means to plagiarise are now largely hidden from view for students. In short, literacy practices become masked by attention to the software, to the technology. In addition, PDS acts as a constraint because, they argue, it is premised upon an outmoded print literacy paradigm. Its design makes it impossible to recognise multimodal meaning making - interactive multimodal texts cannot be captured and uploaded in PDS - and practices which happen all the time in digital scholarship, for example the use of blogs and Twitter;. They argue that it's important to locate, name and scrutinise literacy processes and actions before they become naturalised, fixed and invisible, and lost in a network of technology and regulation. Robin Goodfellow picks up some similar themes around authorship in his detailed exploration of digital scholarship. He looks in detail at the ways in which scholarly texts are constructed and how they speak to particular audiences and claim authority. In an effort to identify the values and beliefs behind approaches to digital scholarship he draws on analytical perspectives from the fields of new literacy studies and rhetorical studies, with a focus upon rhetorical practices within academic texts. He identifies openness as an increasingly common academic practice in the arena of digital scholarship but it is the scholarly texts themselves, their structure and the kind of moves that are taking place within them, which are central to his argument. He contrasts the ways in which the authors, whose work he examines, construct their audience, conventionally as an academic audience of scholars or speaking to the reader as a relative newcomer rather than a member of any particular academic

community. The chapter articulates how textual practices enact these approaches and positions and illustrates the work they do to construct the different approaches to academic practice and knowledge which are embedded in the authors' work. This chapter suggests that openness and scholarship not only commit to a certain kind of digital transformation but they also commit scholars as authors to a decision about truth and use and to engaging in literacy practices that elide with the values of the community they are speaking into.

Carmen Lee focuses on literacy from a linguistic perspective and, in this respect, she foregrounds language and its association with 'literacies as social practice' research. Although she looks primarily at texts she is also concerned with practices in and around digital media and their implications for pedagogy. The chapter is orientated towards methodology, text making practices and discourse centred online ethnography, both of which underpin her work on hybridity and creativity in digital texts. It offers detailed research into multilingual text making practices amongst undergraduate students in Hong Kong, exploring digital spaces where relatively controlled academic discourse meets and interplays with interpersonal, hybrid, and informal discourse styles. Lee's contribution to the volume is from the perspective of a discipline specialist and she illustrates how undertaking research on student engagement with digital text making practices has had particular implications for her own teaching.

Creativity, hybridity and fluidity are all key elements of the literacy practices foregrounded in this volume and are evidenced in the practices of post-compulsory college students explored by Candice Satchwell, David Barton, and Mary Hamilton.

They take as their starting point the need to look beyond the text and to consider what people do with literacy. Their concern here is with how literacy practices are subtly altered as they cross the boundary from one domain to another, for example, when college students incorporate their experience of multimodal multimedia texts into their coursework. They argue that notions of agency, identity and power are always fundamental to the ways in which different ways of doing literacy are embraced or resisted and that practices from one context do not migrate simply into another even when technology is in place to facilitate this.

There are close similarities with Satchwell, Barton and Hamilton's work in Lea's chapter. Taking an academic literacies approach she illustrates a misalignment between student practice and assessment practices, illustrating how students' practices of meaning making and use of resources in digital contexts are rarely reflected in their completed assignments. Lea build on this empirical research context to examine the development of academic literacies as a field study as it grapples with a digital higher education. She argues that the theoretical and methodological orientation of academic literacies may not be robust enough to help us understand literacies in the digital university; and suggests that we need to interrogate the categories and binaries that the field has taken for granted, for example, the distinction between academics' and student practices. She believes that we need to bring in and integrate perspectives from other intellectual traditions, in particular actor network theory. This moves away from academic literacies conventional orientation towards agency, identity and processes, seen in terms of what particular people do, towards the enactment of knowledge as network practice. It involves reassembling academic literacies in order to examine the power of institutional networks over and above the activities of

specific groups of people, for example students and teachers. This means asking different kinds of questions around texts and practices and also recognizing that it is our ability to see and capture them which is changing in the shift to the digital. Lea argues that bringing together the critical, contested approach from academic literacies with an actor network approach can offer a counter to the relentless drive of higher education to stabilise the digital and align it uncritically with literacy. Such an approach might help us to think differently about literacy and in particular academic literacy in the digital university. This will mean moving from a focus on accounts of individual practice to explorations of network practice, how networks come into being and how they are sustained. She illustrates her argument through exploring the idea of digital literacy and its power to configure institutional practice within and outside the university.

The Digital

As with their approaches to literacy, the contributors to this volume bring different assumptions and points of focus to their conceptualisations of the digital. Only Jones, however, attempts an explicit definition of the term. He does this by distinguishing between contemporary digital technologies and their technical predecessors, arguing that the new generation of digital sociotechnical systems is distinctively different by virtue of features such as replicability, mutability, instantaneity, connectivity, portability etc., all of which have consequences for new socio-cultural practices. Of all the chapters, his is the most motivated by the desire to understand the implications of 'digitality' in a technical sense, and to use this understanding to characterise the digital university as a distinctive kind of educational institution. For the other contributors, by contrast, the term digital is used variously to highlight: specific

devices, networks (or 'assemblages' in the more theorised perspectives), technical affordances, modes of text and textuality, types of skills and competencies, practices, and environments, depending on the kinds of motivations discussed below. Inevitably, perspectives overlap, and any attempt to categorise these different approaches to the digital in mutually exclusive terms will fail to do justice to some aspect or other of their authors' intentions. However, in looking more closely at the different emphases that the authors put on theoretical and pragmatic features of the digital we can come to a better understanding of 'digitality' as a complex phenomenon, and perhaps to a better appreciation of its role in the social construction of the universities of tomorrow. In the following discussion we consider some of the underlying motivations of our contributors for focusing on the particular features of the digital that they emphasise. In particular: the influence of public policy agendas; orientations to textuality and multimodality; concerns with specific users of specific devices; commitment to theorisation and critique; and the desire to envisage an ideal future.

For some of the contributors to this volume, it is policy (governmental or institutional) that is the principal driver for their enquiry. Littlejohn and her colleagues, for example, locate their understanding of the digital against the efforts of the UK higher and further education policy and practice community to deliver an 'entitlement agenda' for 21st-century students. From this perspective, they discuss 'digital literacy' as the capability to engage in new kinds of economically productive work and learning practices, arguing that this is becoming 'essential for participation within society'. Martin & McKenzie, and McKenna & Hughes conceptualise the digital from the perspective of institutions currently focused on the creation and reuse of open educational materials (OERs) with both philanthropic and self-interested

motives. Such materials implicate the digital both in their means of production and their modes of use – an issue which can be seen as having professional development implications, both practical (Martin & McKenzie), and normative (McKenna & Hughes). Satchwell and her colleagues locate the digital in the artefacts and practices that distinguish informal from formal contexts of work and study for the further education students whose learning was the focus of their publicly-funded research. Gourlay & Oliver explore their expansive concept of socio-material practice through a study of students' 'digital literacy', as required by the terms of the national research and development programme that funds their work.

Despite his concern for a technical definition of the digital, Jones concludes his chapter with a critique of the role of technically determinist accounts of the digital and its users in providing simplistic solutions for policy-makers, and argues for a socio-material understanding of the digital that takes account of the way that it can constrain as well as afford human intentions. The critical dimension is very important for this book. As some researchers in the social sciences have pointed out, we are having to rethink changes in social life brought about by digital devices (Savage et al 2010) and we need to be alive both to the ways that digital devices reconfigure expertise and institutions, and the ways that social agents contest their value and efficiency (p.14). For some of the other contributors to this volume, therefore, the digital poses significant theoretical problems for current ideas about pedagogy and literacy, and their chapters are motivated by the need to explore the nature of this problematisation. Gourlay & Oliver, Bayne & Ross, Lea and Fransman, for example, all position the digital as a socio-material phenomenon - an aggregation of networks or assemblages of actors and devices whose role in the shaping of pedagogy and the

outcomes of learning needs to be accounted for in theoretical terms. For Bayne & Ross in particular, the capacity of digital devices to generate and operate on an 'uncharted space of flows' (quoting Castells 1999) independently of any knowledge of individual human actors, creates the possibility of an entirely new kind of institutional and pedagogical space for online teachers and learners. To account for the transactions that go on in this kind of space, they argue, it is necessary to move beyond the individualist and humanist framings of the social that we are used to. They pose a conundrum for those wishing to assess students' work in highly digital contexts, by drawing attention to the role of non-human agents such as feeds and content aggregators in shaping what is eventually 'submitted' for assessment by the students on their own Masters in E-learning and Digital Cultures. The post-human perspective on the digital is also explicitly referenced by Gourlay & Oliver, whose view of the digital as constituted by 'assemblages' of devices and actors (human and non-human) is convincingly illustrated in their account of students and others using technologies for study purposes in a variety of locations and social contexts. Lea's consideration of new thinking about the socio-material derived from actor network theory problematises the taken-for-granted viewpoints on human interactions and transactions that underpin literacy and learning. Fransman's exploration of the affordances of the social media application Twitter shows how its materiality determines the way that its users are constructed for research purposes. Such problematisations signal the capacities of digital devices to disrupt practice, not only to enable or empower practitioners and learners. As these accounts remind us: issues around new forms of authoring (Gourlay & Oliver, McKenna & Hughes, Lea), new informational forms and social memory (Bayne & Ross, Jones), and new institutional spaces (Gourlay & Oliver, Lea, Fransman, Bayne and Ross) can raise doubts and

uncertainties as well as hopes about the benefits of the digital world that the university is being propelled towards.

Against a background of these wider problematics, some of our contributors are concerned more immediately with specific technologies and their relation to the digital practices of their users. Bronwyn Williams, for example, focuses his consideration of the digital on the course management platform Blackboard, as it is used in his own and other American educational institutions. His analysis of the way that power is materialised in the design of 'efficient' and 'convenient' systems is used to make the argument that a critical perspective on the digital is an important goal for learners as well as for researchers and developers. Robin Goodfellow addresses the technologies that are implicated in the 'opening up' of academic publishing and scholarly communication in general. His consideration of the affordances for actual scholarship of print versus online books about 'digital scholarship' raises the question whether the assumed association between the digital and open-ness is as reliable as we imagine. Carmen Lee explores the social media and messaging systems that her Hong Kong students use to create a social dimension to their university studies. Her discussion of the text-making practices that she and the students develop during this study leads her to suggest that teachers need to bring their own personal digital practices into pedagogy more explicitly, a conclusion that is reinforced by Littlejohn et al. in their argument for digital academic literacy. Haythornthwaite discusses applications that support the creation of online communities, and suggests that the e-learners of the future will learn to 'be' their 'particular definition of a distributed, online learning community'. Jones invokes Saljo's notion of 'social memory'

constructed for online communities through the increasing capability of devices to carry out 'analytical, cognitive-like operations that were previously made by people'.

Many of our authors take an implicit position on the issue of the digital as textual, although only Bayne & Ross and Goodfellow use the actual term textuality as such, the former to problematise the assessment of hypertextual and visual assignments, the latter to compare and contrast 'print' and 'digital' approaches to academic writing. Digital text-making as a novel form of practice is foregrounded by Gourlay & Oliver and Bayne & Ross, and by Lea in her discussion of students' 'hybrid' texts produced in the course of integrating digital resources into assignments. It is also addressed by McKenna & Hughes in identifying the contradictions inherent in using plagiarism detection software in an arena dominated by hypertext, and by Lee addressing the creative and bilingual use of short message systems by Chinese students. Several of the chapters raise the issue of multimodality. Jones, for example, discusses the role of multimodality in Kress' notion of 'reading as design' – a principle further illustrated in Littlejohn et al's discussion of digital knowledge practices involving re-mixing resources, sharing across global sites, and 'crowd-sourcing' solutions to problems. Fransman gives an illustrative description of the way an automatically-generated visual diagram of twitter users and their followers comes to determine which features of the network are salient and which are 'othered' for the purposes of understanding the phenomenon at hand. Bayne & Ross and Gourlay & Oliver both introduce visual data to illustrate their discussions of their own students' digital practices, which provides an interesting counterpoint to Williams' critique of the lack of affordance of Blackboard for multimodal communication. Martin & McKenzie and Satchwell et al

discuss the importance of non-textual artefacts, both digital and actual, in the practice of their professional colleagues and their vocationally-oriented students.

Finally, some of our contributors are motivated to interpret the digital via a futuristic 'vision' of some kind, whether of newly empowered learners, or of transformed institutional values and practices. This is perhaps to be expected in the current context of perpetual digital innovation and the uncertain future of conventional boundaries between authors and readers, designers and users, sellers and buyers, teachers and learners etc. For Caroline Haythornthwaite, the whole question of the digital is elided with the emerging practices of 'e-learners', creating for us a vision of a technologised future in which learning is a constantly reiterated response to the 'perpetual beta' conditions of an ever-changing digital environment. Haythornthwaite shows us quite explicitly where she thinks we have come from and where we are heading, in her comparison of the 'then' and 'now' of e-learning. For her, the digital has gone from being a thing of wonder and some trepidation for the first learners to venture into online discussion forums, to an all pervasive communicative context, in which 81% of US students preparing for exams check their e-mail and Facebook accounts every hour while they are studying. Ahead lies a world of participatory practices amongst formal and informal learning communities, of open resources and innovative credentialling, of learners who continuously invent and enact the new literacies of their online environments. Martin & MacKenzie, and Littlejohn et al also provide accounts based on envisioning the digital teachers and learners of the future. Martin & MacKenzie, from a more pragmatic perspective, offer solutions to a scenario where teachers are required to develop new digital skills and competencies consistent with a burgeoning world of open educational resources (OERs), wherein processes of

locating resources and adapting and repurposing them begin to take over from the more traditional activities of researching and writing teaching materials. McKenna & Hughes have a somewhat more critical take on the goal of the funders of the OER movement to use digital technologies to 'equalise access to knowledge for teachers and students around the globe', questioning the implications of unrestrained reuse and remixing for concepts and values of authorship and ownership. Littlejohn and colleagues also temper their discussion of future digital ways of working and employability, based on the transformation of knowledge work and the dissolution of disciplinary and sectoral boundaries, with a critical view of the 'competence framework' approach to the development of digital skills. These perspectives necessarily reflect the discourses of transformation that have characterised the penetration of the digital into contemporary institutional practice and the construction of the university 'of the digital age'. But social scientists warn us that the digital is not best understood in terms of 'epochal shifts', 'new eras of mobility', or 'redefinitions of life' (Savage et al 2010: p.14). From the more empirical perspective of the digital in the everyday social life of post-compulsory education, all of the contributors to this volume highlight in different ways the mutual shaping of digital technologies and educational practices, and the day-to-day material engagement of educational practitioners and the local negotiation of their practices.

The University

Finally we turn to the nature of *the university* in a digital age. The chapters in this volume deal with this sense of the university in contrasting ways, which in part reflect the differing intellectual, disciplinary and practice-based perspectives of their authors. McKenna and Hughes are concerned specifically with values in higher education

within the digital domain and, in particular, what this tells us about power, control and trust as functions of digital writing and publishing. They illustrate this through explorations of Open Educational Resources (OER) and plagiarism detection software, arguing that both these aspects of higher education practice raise questions about issues of values and trust. For example, they argue that a core value of higher education, trust between students and teachers, is severely undermined by the use of plagiarism software. Simultaneously, the development of OERs challenges some long-held beliefs about power and control, traditionally held within the bounded university. Goodfellow also pays particular attention to values in his discussion of the nature of digital scholarship and scholarly communication. In making visible the rhetorical practices of scholars he compares digital scholarship and its manifestation in two different contexts. He questions what scholarship might mean in a university with more permeable boundaries and what then counts as scholarship, intellectual enquiry and academic knowledge. He suggests that the question of digital versus open scholarship may well be the defining dichotomy for the shape of the university of the future. In so doing he raises issues related to McKenna and Hughes chapter who point to the ways in which dominant values around academic authorship and ownership of knowledge, which have historically underpinned the university, are being reconfigured through twitter and blogging.

Bayne and Ross are also concerned with the unbounded university in an exploration of a web-based open course. Taking a post-human perspective, they offer a challenge to how we think about institutional space and may take for granted the flux and flow of the university. Their interest is in the ongoing tension between the demands of assessment and openness of the work that students are undertaking through

participating in their Masters course. Littlejohn, Beetham and McGill's chapter takes a related stance in looking at changes in knowledge making practices. It illustrates how the notion of the university is leaking outwards to take account of wider policy agendas - such as employability - on the one hand and, on the other, the proliferation of student engagement in social online networks. Their interest is less with the nature of the university per se and more with how it might it sit within wider social and cultural online activity. Gourlay and Oliver throw further light on this as they adopt a socio-material lens when looking at the detailed practices of a group of postgraduate students' engagement in academic, professional and personal practice. They illustrate how students are engaging with the digital creatively in working around the limitations of institutional provision and in effect are moving their practices outside of the spaces and places bounded by the university. Lee is also concerned with student practice; her interest is in terms of the changing relationship between teachers and students in a more digitally orientated university. As an applied linguist, she reports upon her research in this area but also reflects upon her own experience of using digital technologies in teaching and the concomitant issues of teacher and lecturer identity that this raises. Satchwell, Hamilton and Barton broaden debates to take account of post-compulsory education. They contrast the perspectives of students in a further education college with those of academic staff in a conventional university. Boundaries and identities are to the fore in their discussion. The chapter contrasts students' demands to bring aspects of their identity - around day to day multimodal, digital text-making practices - into their college study with the ways in which academic staff continue to build boundaries to enable them to undertake academic writing work away from the ever-growing institutional demands of their university, many of which are enacted through the digital.

To differing degrees all the accounts signalled above contribute to our understanding of the nature of the university in a digital age but do not explicitly interrogate this in depth. In contrast, Jones puts the digital university centre stage in examining what the term might mean. He makes the case that as yet it does not actually describe any real or existing university. Nevertheless, he argues, the future of the university appears to be dominated by two related phenomena: first, dominant conceptions of young people, students, as digital natives and second, the existence of a strongly deterministic rhetoric which articulates how universities should respond to the experiences and perceived demands of these students in a networked social world. He suggests that such simplistic accounts are unhelpful in our understanding of the digital university. Haythornthwaite points to the ways in which today's e-learners are continually learning to enact their environments and makes the case that universities need to understand and respond to this in supporting their learners to learn how to talk, to be present and how to retrieve information and to navigate across platforms. At the heart of her chapter is a belief that universities are being transformed by ICT's as the university is increasingly encapsulated in its learning management systems, blended learning and learning analytics. Williams takes a rather more critical perspective to these kinds of developments in his exploration of the ways in which course management software has come to dominate university practice and is indeed called into service as a collaborator in the project of digitising the university. In this respect, he highlights how technology has been measured in terms of revenue, and efficiency but rarely in relation to pedagogy. In considering the small number of powerful and dominant players in this context, Williams suggests that this rush to put VLE's at the heart of the university has been driven implicitly by ideological

imperatives of proficiency, control and surveillance which he argues are central to the workings of the contemporary university.

Fransmen also takes a critical lens but rather than engaging directly with the nature of the university in a digital age her interest is in researching an aspect of this context, namely academics' use of twitter. She explores what lies behind the choice of particular methodological approaches, arguing that interrogating these can show up hidden ideological agendas that each research approach embeds. She makes a compelling case that we need to keep to the fore the explicit recognition of these different framings when we are researching academic practice in a digital age. Lea also asks questions about researching the university. She suggests that relying on the categories and binaries that literacies researchers have taken for granted may be blinding us to the complexity of practice, which cannot be adequately captured in the individual accounts of students and teachers. She is concerned that the digital circulation of texts enables powerful networks to colonise particular conceptions of practice and use them to promote and serve policy agendas which enact strong versions of the university. She sees this as a consequence of the power of networks to bring things into being into particular ways, which are then hard to challenge. This resonates with Williams' critique of VLEs. She argues, therefore, that a network approach to researching practice may be better at making visible the messiness of the university in a digital age. This potentially chimes with the practice-based scenarios explored by Martin and McKenzie around the use of OERs and their argument that curriculum design using digital content requires a re-thinking of traditional roles and a broad acceptance of new professional partnerships using multi-professional teams, which they believe characterize today's university.

Although the chapters in this collection offer contrasting perspectives from practice, theory and research the connections between them are evident. Indeed they often elide with one another in quite unpredictable ways given the very different concerns and orientations of the authors. The nature of the university in a digital age and the concomitant changes in practice are evidenced in these discussions of values, boundaries, the curriculum, social online activity, what counts as academic knowledge and who controls it. Not only do these signal changing practices and relationships, for example, between students and teachers, academics and other professional groups, learning technologists and library staff but they also raise fundamental questions about literacy and the embedded nature of power in effecting these changes.

This volume has attempted to constructively problematise the relationships between digital communication, literacy, learning and scholarship in post-compulsory education. We see it as the first step towards establishing the need for a critical pedagogical research and development agenda that is capable of shaping the 'digital university' as an academic as well as an economic enterprise. We believe that the breadth of contributions in the book make visible the complexity of the relationship between learning and social practice in a digital higher education. Whilst on the one hand many of the chapters expose the inadequacy of skills-based conceptualisations of literacy to support principled pedagogical approaches at tertiary level, others point to the need to take a critical lens to established perspectives on literacy as social practice if we are to adequately account for the textuality of the digital domain and its relationship to social power.