Cathy Burnett · Guy Merchant
Alyson Simpson · Maureen Walsh
Editors

The Case of the iPad

Mobile Literacies in Education

Springer

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Introduction

If desktop and laptop computers were initially the domain of commercial and educational worlds and only later became part of everyday spaces, mobile devices, such as smartphones and tablets, have needed no such transition and have rapidly infiltrated all walks of life. They are used not only by administrators, scholars and students but also in daily life in homes, in restaurants, and in a wide range of retail, service and tourist industries. There is a pressing need to understand the mobile literacies associated with such devices and their take up in different jurisdictions, as well as the role that they play (or might play) in the lives of children and adolescents. In many parts of the world, digital devices and the texts they mediate are embedded in everyday life from the earliest years (Razfar & Gutierrez 2013). In the UK, for example, nearly three-quarters of children aged 3–5 have access to a touchscreen device at home (Formby 2014), and surveys report an increase in tablet ownership amongst children (Ofcom 2016). In the US, ownership of tablet devices in families with children aged 8 or younger increased fivefold from less than 8% in 2011 to 40% in 2013 (Rideout 2013). In many households, tablets have become the device of choice for family entertainment, used for on-demand TV, games and interactive stories. Increasingly, educational literacy practices too have fallen under the sway of devices like the iPad, which appeals to educators because of its size, portability and intuitive touchscreen interface (Merchant 2015).

This widespread availability of portable digital devices, and their increasing use within educational settings, suggests a need to re-draw maps of literacy development to account for emerging forms of semiotic representation and patterns of interaction (Merchant 2012; 2015). At the same time, the distribution and use of tablets and high-speed internet access remains uneven, patterned by differences in economic wealth as well as practices associated, for example, with gender, ethnicity and class (Black et al. 2014; Rideout 2013). Furthermore, in educational settings, literacy tends to be conceived in ways that contrast with the hands on, mobile, free-ranging and often diverse engagements with texts associated with tablet use at home. Not only do we need to know more about how meanings are made around iPads and similar devices, but we also need to understand the distinctive ways in which mobile technologies are being put to use in educational settings. While there

is no doubt that mobile technologies present us with new affordances, the material nature of learning and literacy raises new and interesting issues for pedagogy. Educational researchers and practitioners need ways of understanding the varied ways in which children, devices, texts and sites intersect and work to construct one another, and how mobile literacies work as 'placed resources' (Prinsloo 2005) embedded in and inflected by wider economic, political, societal and historical forces.

Building on a well-received symposium at the 2015 American Educational Research Association international conference in Chicago, this edited collection brings together an international group of scholars working in literacy studies who have investigated the use of tablets in a variety of settings. Approaching associated literacy practices from multiple theoretical perspectives, the chapters interrogate the relationship between tablets and literacy in different ways. The book focuses on tablets, and particularly the iPad, as an instance—or *case*—of mobile literacies, but is designed to speak more broadly to research focused on literacy and mobile devices. We see the significance of mobility to literacy first in relation to the portability of the device, second in relation the fluid movements between apps associated with mobile devices, and third in relation to the movement of ideas and practices associated with tablet use.

Together the chapters in this book address the 'Case of the iPad' by exploring multiple ways of conceptualising meaning making around tablets, placing a particular focus on the embodied, material and situated experiences produced when hardware and software with 'global' circulation are taken up in local educational settings. The chapters exemplify these perspectives using data from studies investigating iPad use in a variety of locations: in homes and in early years, primary and secondary schools, as well as post-16 settings. Chapters range from those framing tablet use in terms of a micro-analysis of practices to those examining the broader political, economic and social flows that inflect available opportunities. Together they address the complex and multiple forces associated with the distribution of the technologies themselves and the texts they mediate (popular children's stories, games and so on), and consider how apps, adults and children work together as iPads enter the mesh of practices and material arrangements that constitute the institutional settings (Schatzki 2005).

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Chapter 1
The Case of the iPad

Cathy Burnett and Guy Merchant

Due to back problems I've always avoided using laptops more than absolutely necessary and my large hands mean I'm all fingers and thumbs when I use my smartphone so I've never really grown to love it. My iPad though is much more of a friend, part of the family even, following me from office to lounge to kitchen to office and coming on trips and outings. Its black articulated case is practical but gives nothing away. When I fold it back though an image springs to life, a forgotten world. It's a photo taken early one sunny morning at the Fairy Glen near Uig on the Isle of Skye. It makes me smile every time I see it and remember the surprise of stumbling across this eerie place tucked away from Skye's more obvious highlights. I've had the iPad for maybe four years now, it's a reconditioned iPad 2. I've recently heard that Apple are going to stop updating the operating system for iPad 2 s. How long until mine ceases to function with the apps I use and it goes to join all the other discarded devices and chargers that clutter my home?

If a product's reputation is linked to the frequency with which its brand name is used, it is at its zenith when the brand name becomes synonymous with the product itself. Hoover did it with the vacuum cleaner; Google with the search engine. Both names have been absorbed into everyday parlance, even to the extent that associated activities have generated new verb forms. After all we can all hoover up information through googling. The situation isn't quite the same with tablet computers, but it's close. At times we forget that the iPad only counts for a segment of the tablet market —a large segment admittedly, but there are other players out there, too.

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Does any of this matter? Well it does if you put together a book that refers to iPads in its title that has iPads mentioned in chapter headings and in multiple index entries, as we have here. But still, referring to 'the case of the iPad' suits our purpose too. It conjures up a number of things. For instance, it draws attention to the power of the market and to the commercial interests that are the trademark of modern life flowing, as they do, across jurisdictions on an unprecedented scale. What is sometimes referred to as global capitalism is just a way of describing the restless search for new markets and the appetite to sell into new territories that this involves. iPads appear to flourish in this environment, riding on the already established reputation of the Apple Corporation. This is, then, part of the case we consider.

iPads may have crossed international boundaries with ease, but they have crossed other boundaries too. They have succeeded in capturing the interest of educators where many digital technologies have failed. Relatively cheap and light and without the encumbrance of wires, plugs and modems that have rooted technology so firmly to the spot in schools for so long, they are attractive to educators and educational policy-makers. They rest comfortably on classroom tables and their 'intuitive' interface means that less time is wasted with technological glitches and from lapses in teacher confidence. Moreover, while educational technologies have often been adaptations—parallels or parodies of technologies used outside school—Apple were quick off the mark in getting their product endorsed by schools. Consequently, students, where funding permits, meet familiar devices that they know how to find their way around. Of course in practice, as many of the chapters in this volume illustrate, school use is never quite as straightforward as the hype suggests. Calls from mobile learning enthusiasts for learning 'anytime, anywhere' have generated multiple case studies of children using mobile devices in museums and galleries, parks and wild places, and for 'home learning'. For the most part, however, school tablets remain in classrooms, perhaps even alleviating any previous need for excursions elsewhere. And their use generates familiar questions about how much freedom children should be allowed at school—to access and to move between particular resources.

In educational research it is traditional to train our gaze on what learners do, to focus on outcomes, intentions and processes. A brief search for studies of iPads in education suggests that much of our attention has rested on a closed circle, the relationships between child, device/app and learning outcomes. Studies have explored perceptions of tablets, impacts of tablets and implementations of tablets. Where researchers seek to contextualize technology use through tracing relationships with policy or broader practices, they tend to do so by examining the legacy of policy-makers or institutions, or by following students to their homes and their leisure activities. In effect, they follow the people.

Bounding the story of the iPad—and of course other tablets—in this way, however, has implications. It deflects from discussion about other kinds of relationships sustained and generated through the use of digital devices in education. It narrows the case. Of course, there is much that is attractive about the idea of individual learners at large in the world, with access to multiple sources of

information and expertise, activity that supports a flexible, agile engagement with the world around them. All too often, however, the sense of personalization and individualism that this claims is at odds with the complex sets of relationships that help sustain such possibilities, relationships that have too often been characterized by social injustice, environmental degradation and violence towards other species. In this chapter we intersperse analyses from multiple disciplines with personal stories in order to unsettle common framings of tablets in education. We intend the questions and issues we raise to work in conversation with the cutting edge research and thinking presented in the chapters that follow, and in doing so hint at multiple other ways of working at the intersection of literacy and technology as yet unexplored.

Moving Targets

Through the steamy windows of a corner café in this small provincial town you can just make out the customers. They are nursing warm drinks, chatting to each other. Some are on their own, hunched over their mobile phones, flicking through screen images, tapping out messages, updating their status, relaxing. All is well, or so it seems.

But how easily have we become habituated to this world of mobile technologies? For these devices have rapidly insinuated themselves into almost every aspect of social life (Gergen 2003). Not everywhere, but hereabouts. And that makes us all customers, whether we happen to be sitting in the café or not. Is this the new order, a state in which we imagine ourselves to be rational, self-determining subjects exercising our freedoms in marketised choice, in socially sanctioned consumption and lifestyle performances? What have we bought into?

In his commentary on the political and economic practices of neo-liberalism Rose (1999) explores contemporary governmentality and the emergence of a new ethical subjectivity—a subjectivity framed by the rights of the consumer and the practices of the market place. From this perspective, the freedoms of lifestyle choice are determined by market transactions, whether or not this is evident to the individual. And if the success of the neo-liberal project is to be measured by the reach and frequency of these transactions, then mobile technologies are raising the bar. As an example, the Apple Corporation manufactures about a million iPhones a day, and this plays a significant role in making it the most valuable company in the world, worth \$622 bn (Apple 2016). The market is of course open for other entrepreneurs too, those other players who provide hardware, software and even the communications infrastructure itself.

No matter how handy our devices are (see Merchant, Chap. 15), or how convenient mobile life has become, mobiles are bought and sold, on terms, with 'providers'—refreshed, recycled and regularly updated. Consuming subjects are thereby involved in serial transactions, guided by sophisticated marketing, branding, product placement and media coverage. Take *Which?*, the consumer bible that tests, compares and recommends our purchases. It tells us that,

> The iPhone 7 is the *best iPhone we've ever tested* and its 91% score is among the highest we've ever recorded for any product. (Authors' italics) (Which?, November 2016: 58)

Not advertising, just product endorsement. And along with word-of-mouth recommendation, and its circulation in on/offline social networks, we are coaxed and cajoled into more updating, accumulating more apps and making more in-app purchases—in the case of the popular game *Candy Crush,* about a dollar each time, contributing to a total of $1.3 bn per annum revenue for the holding company (Torres 2015).

It may be stating the obvious to say that mobile technologies play a significant role in upholding the new global economy. They are at the same time both socially sanctioned consumer products and sophisticated conduits for new products. But they could also be seen as a manifestation of neoliberal governmentality, for in Foucault's definition governmentality is not just about political governance but also about 'the conduct of individuals and groups' (Foucault 1994: 341). Or to put it another way it is the 'whole range of practices that constitute, define, organize and instrumentalize the strategies that individuals in their freedom use in dealing with each other' (Foucault 1997: 300).

From this point of view, we might see what we might call mobile subjectivities as the ways in which individuals produce new modes of social interaction, and new textual and discursive practices as consumers of mobile technologies. These are ways of being that are contagious, taking place in a cultural economy that valorizes individualized, responsibilized, digital consumers. If this is the case, what is the role of schools in this context? Is it to produce more compliant, neoliberal subjects, or have schools been reconfigured with this express purpose in mind (Brown 2003)?

Education reform has already been imprinted with the stamp of the market. The success of schools and other educational institutions is measured for competitive ranking, and their operations are quality controlled. Parents are cast as responsible consumers who shop around for the best buy—and testing regimes have transformed children into quantified subjects who know their 'level' and readily announce their aspirational targets. And if the adoption of new technology for learning has had an uneven trajectory in schools, it has been more confidently and evenly accepted for recording assessments, managing performance data and publishing inspection reports.

Whilst the influx of mobile technologies into the school sector holds many promises (Merchant 2012), developers have been quick to exploit the new market, producing apps for parents to invest in early advantage for their children (see Marsh, Chap. 3; Kucirkova and Sakr, Chap. 11) and Sakr, Chap. 11 for schools looking for magic bullets to improve performance data. From Earobics[1] for early phonics, to Mathletics,[2] a sophisticated learning platform for mathematics, there is plenty to choose from. Perhaps their trade names hint at the emphasis on training, individualized improvement and competitive advantage.

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[1]By Cognitive Concepts.

[2]By 3PLearning, see http://uk.mathletics.com.

Hall (2013) explains these recent moves in mobile learning in terms of an economic agenda. Mobile learning is inextricable from the production and marketing of devices and apps that submit individuals to infringements of privacy, turning them into the subjects of surveillance and data mining. In making his case he asserts that,

> both the anytime/anywhere capabilities of mobile technologies, and their identity-driven, personalizable reality, enable the real subsumation of everyday activity inside the reproduction of capital. (Hall 2013: 174)

Inside the Case

> *Somewhere… if I can find it…yes, here it is, slightly aslant, balanced on an untidy sheaf of papers on the window ledge. A bit like an old book with rounded corners. The spine, black faux-leather that has acquired an uneven sheen from being carried, stuffed into bags and variously manhandled. And the faded cover, padded synthetic material printed with a photograph. Me, in hiking gear, on a high pass in the Himalayas, surrounded by prayer flags - also faded. Flipping it open to see the expressionless black glass. Thick smears of grease pattern the screen, the work of the fingers, a history of use. And at one end, the rectangular line of the casing is cut away, like the outline of a small bowl. Cradled in this cut-away you can just make out a circular indentation in the glass, with an even smaller white square printed neatly in its centre. Dust, grease and food crumbs have accumulated around it, but it still responds quickly when pressed with the forefinger, and then the whole surface springs to life. An incandescence, the home screen.*

In supporting ongoing professional development, Mason (2001) urges teachers to develop a 'discipline of noticing', a noticing that stops them in their tracks and promotes engagement with things that tend to get taken for granted or ignored. A disciplined noticing can bring background to foreground, inviting new kinds of questions about everyday classroom practice, questions that easily escape the busy teacher: linked to learners' perspectives, micro-practices, the complexities of classroom life. So where do we stop with this? What gets written in, and what gets written out? Literacy scholars are familiar with this dilemma. Challenging the psychological cognitive accounts of literacy that focus on a closed loop between text and brain, literacy researchers have added many ways of thinking about what might count when thinking about literacy/ies. Forty years of literacy studies have extended the gaze to include multiple places and spaces, new media, diverse languages, practices and power structures. Many of the chapters in this volume support such careful noticing; for the most part they shun generalizations and focus on intimate details of learners' interactions with tablets as emplaced in different sites (e.g. Chaps. 9, 10 and 12–14); and use detailed analyses of literacy practices to raise questions about the implications for learners of making meaning in ways that are more mobile and more multimodal (e.g. Chaps. 4, 5 and 8). And some chapters begin to touch on what might happen if we bring micro-analysis of *non-human* participants to our thinking about iPads and literacy (e.g. Chaps. 2 and 15).

But other kinds of noticing might invite questions that get pushed aside in the busyness of classroom life. There is, for example, a 'deafening silence about non humans in our discourse' (Wolch and Emel 1995). Educational research on tablets has almost exclusively focused on use. Studies of the take-up of tablets, the efficacy of particular apps for learning, and of how students of various ages engage with devices continue to proliferate. And in this work, the focus has tended to rest on the surface—what is displayed on the screen, rather than how it is generated or what happens after, from a technological point of view. We might think of the former as what is *under-coded*, and the latter as what is *over-coded*. For example, display requires not only the battery, processor, Flash memory, Wi-Fi antennae, accelerometer and audio-visual circuitry in the build, but also the under-coding that makes apps work. This kind of coding—and the algorithms that lie behind it—has, of course, become absorbed into some education provision as part of computational thinking (e.g. Australian Curriculum Assessment and Reporting Authority 2014; Department for Education 2013; Education Scotland 2014), but the possibility of using this as an opportunity to look 'under the bonnet' of the iPad is, as yet, poorly documented. There is a clear need for more work in this area, work that indeed looks beneath the surface.

By comparison more attention has been given to what we are calling over-coding. Media scholars such as Fuchs (2010) and Lyon (1998) have focused on how data are collected, or 'harvested', from users, pointing out how platforms and apps routinely collect, store and share data about users and their behaviour. Sometimes this enters into schools under the umbrella of cybersafety, but as concerns over surveillance and privacy online grow it may need to be more firmly written into work on critical media literacy.

Bringing the more than human to our notice, however, involves engaging not just with what goes on *beneath the screen* but *beyond the screen* to the multiple humans and non-humans that are implicated in the arrival of tablets in classrooms. The geographer White (2015) describes what may be gained, for example, by attending to the inter-species violence that is 'hidden in plain sight' in the everyday life of humans. Narrating his walk from home to station on the way to work, he notes the 'more than human sentient beings that are entangled within this urban landscape', in pet shops, butcher's shops and shops selling equipment for hunting, shooting and fishing. He asks,

> Were I to push my observer to move beyond an anthropocentric scripting of this encounter with place, and ask that they critically focus instead on the excessively obvious presence (or indeed absence) or more than human animals, then I would hope (and fear) that their urban narrative would generate observations altogether more dark and *disturbing*. (White 2015: 213)

What might happen if we start to engage with the more-than-human sentient beings entangled in tablet production, marketing and use. When we consider the classrooms described in this volume from this perspective, animals other than humans are noticeably absent. Of course, in classrooms, we're accustomed to representations of animals, on posters, reference books, apps, pencil cases and stickers on

bags, or anthropomorphized in children's picture books and novels. Animals are ever present in the semiotics of classrooms, as things to be researched, celebrated, investigated, and—in fictional form–as companions with which to explore multiple storied lives. Occasionally, a wasp may fly through a window or a dog may enter a playground, or beetles may be pooted into jars for science or environmental studies. But these brief encounters do not bear testament to the multiple other ways in which people and other animals come into dialogue in the makings of education.

Smear

> Sitting in the second row during a conference presentation, a small movement from the row in front distracts me. Guy is gliding a small piece of folded tissue in regular circular motions across his iPad screen. Back and forth, round and round. The smears of yesterday's activity erased.

When tablets enter classrooms, they arrive all shiny and ready for something new (see Caine, Davies and Williams, Chap. 9). But as they have morphed from mineral extraction through production to marketing and purchase to use, they have shed many stories, stories that are hard to locate in the research archives. While discussions about other animals and technology do reach the press, these usually relate to interactions between particular species and technologies—dolphins guarding nuclear weapons (Beinaimee 2015) or eagles capturing drones (Thielman 2016) for example. And yet press stories exploring the damage to humans and other species associated with tablet production tend to deal in generalities: the environment, the planet and ecologies. Big things collapse multiple things into one. We see this in the rhetoric of both environmental groups and tech giants:

> Until now, companies have focused on the need to remove hazardous substances from consumer electronics products in order to address chemical pollution from recycling and disposal, including backyard recycling of e-waste. For some product groups, the phase-out of hazardous substances has been relatively successful. However, the electronics industry has not yet sufficiently addressed the challenge of reducing the environmental impact that results from the manufacture of their products. (Greenpeace 2014: 20)

> Apple believes that improving the environmental performance of our business starts with our products. The careful environmental management of our products throughout their life cycles includes controlling the quantity and types of materials used in their manufacture, improving their energy efficiency, and designing them for better recyclability. (Apple Corporation 2015: n.p.)

The 'environment' becomes one thing, one factor to be taken into account by institutions, organizations and individuals. And the justification or analysis is quantified—we get to see how we're measuring up. Just as in education, as long as we're improving, moving on, then things feel fine. We're doing better than before, after all. Certainly, individuals often cite green(er) credentials as reasons for choosing Apple products over others. And yet, of course, the environment isn't just

one factor but an intricately woven multitude of relationships that intersect in complex ways raising multiple other considerations, and the implications need to be seen both in terms of individuals, and in relation to timescales that massively exceed those associated with the launch or life of a product:

> Toxic e-waste is predicted to grow to 65.4 million metric tons in 2017. The recycling of this e-waste becomes even more problematic when it is exported to countries in the Global South where dangerous backyard recycling often takes place, posing great health risks to the local communities. While electronic take-back programmes are growing, the speed of collection cannot keep pace with the rate of consumption. In 2013 alone 1.8 billion mobile phones were sold globally, and it is predicted that sales of the most popular gadgets (mobiles, tablets and PCs) will increase by 6% to almost 2.5 billion products in 2014. This worldwide growth in consumption is multiplying the environmental and human health problems associated with an electronics industry currently built on an unsustainable model. (Greenpeace 2014: 5)

If we recognize the anthropocene as an epoch distinct from prior geological eras, one in which human activity has shaped Earth's eco-systems and evolutionary processes in fundamental ways (Young 2016), then the use of particular devices is not just about impact on specific communities of humans or other animals, or of tracing the significance of the production and use of digital devices to specific sites (although that's important, too), but it's about recognizing the ways in which production and use are interwoven with the future of the planet (Hodder 2014).

So what might all this mean for literacy education and research? Separating out literacy studies—in a kind of disciplinary silo—starts to feel ethically problematic. In exploring how literacy scholars might engage critically with the issue of obsolescence, for example, Madden (2014) asks ironically 'What can writing studies do to impact global environmental conditions in the anthropocene? And shouldn't this be someone else's job?' For Madden, one response is to explore the kinds of meanings that are enabled in relation to the rhetoric of the device itself. As Madden, citing Gabrys (2011), explores, the shrinking of digital devices and the ways in which small slim devices work perhaps represents a 'dematerialization of those tools in the popular imagination' (Madden 2014: 35). It becomes more possible to sidestep issues of production and environmental destruction when devices themselves are so sylph-like, their size, their slimness creating the impression of something less substantial, more sustainable, less greedy (even though the production of such devices may generate even more waste than their more cumbersome, durable predecessors).

Are We Moving?

> I'm just pulling into the car park when my phone goes off. The screen lights up. It's Cathy. 'Hello?'. 'Mmm, I appear to be locked in the office, I can't get out. Are you somewhere about?' 'I've just got here. I'm in the car park.' 'Well can you come and let me out? You'll need your swipe card.' I slide out of the driver's seat. 'For once I've got that.' I stride purposefully across to the office building. 'I'm on my way, I'll be there in a couple of

minutes.' Hang up. For once I might be able to do something useful. Something practical. And then I'm at the door. It's a big glass arrangement in a metal frame through which I can see Cathy who is frantically gesturing at me. I fumble in my wallet for the swipe card. The first attempt is a fail. I'm pulling the wrong door, the wrong way. I punch the mobility access button. Nothing. She's trapped, still gesturing. I try again, pull the other door and she's out. Third time lucky.

Mobility is one of those signature themes of early twenty-first century living. On a macro-scale we are preoccupied with the movement of people, whether it takes the form of the 'migrant crisis' that has recently tested Europe's ability to act with humanity, the contagion and spread of Ebola that has so troubled the medical community, illegal border crossings and their ongoing generational legacy, or the carbon footprint left by mass tourism and big business. Within liberal democracies we agonize about social mobility, about the rising gap between rich and poor, at a local level about the ability of the transport infrastructure to get people from A to B, and with a growing commitment to how barriers to physical access can be removed, we worry about how mobility can be enhanced. Based on all of this, Sheller and Urry (2006) identify the emergence of a 'new mobilities paradigm' to focus our attention on movement. Urry (2007) highlights a number of strands including: *the movement of bodies* for work, for leisure, in migration and for political asylum; *the movement of materials*, principally but not exclusively between producers and consumers; and *virtual movement* to 'other places' through the use of screen technologies and semiotic movement made possible through mobile technologies. None of these are exactly new to the twenty-first century, but the concept of mobilities sensitizes us to how we put ourselves about, how we get around, who and what moves where, and how. And of course, these mobilities intersect with other concerns (such as those outlined above) in ways that suggest that the new mobilities paradigm is post-disciplinary (Sheller and Urry 2006).

Urry (2007) also draws attention to the how mobility relates to unevenness in the concentration and scarcity of resources, and we can immediately see the ways in which that is reflected in the case of tablet technologies, and how directly this relates to power and conflict and the patterning of social, economic and cultural life. Part of the equation, for Urry, is about relationships with immobile platforms—platforms that control and regulate the flow of people, goods, or information. His examples include borders and gates as well as transport hubs such as stations and airports, but we might also consider the institutions and institutional infrastructures that human and non-human actors are tethered to and the territories that these help to produce. Some of this thinking has influenced the mapping of new mobilities for education undertaken by Leander et al. (2010) who pose the question:

> How are the dynamically moving elements of social systems and distributions, including people themselves and all manner of resources for learning as well, configured and reconfigured across space and time to create opportunities for learning? (Leander et al. 2010: 330)

Are We Learning?

When we juxtapose these different iPad tales, the case of the iPad starts to feel rather slippery. iPads become certain kinds of things when they appear in classrooms, quite different from those things targeted by environmental groups, or featured in advertising campaigns or used to access bank accounts or social media. They become different things as they enter into relations with people and other things. iPads, like other things, are held in place by such relations, just as *they* help sustain *other* things as they come into relation with them. These relationships need work, however; if the work ceases, then these things cease to exist too (Latour 1987).

We see this often in education, when something gains purchase and is held in place by a complex set of relations. In the UK for example the late 1990s/early 2000s saw the implementation of a National Literacy Strategy characterized by distinct pedagogical and organizational approaches involving an increased emphasis on focused class and group teaching, a detailed curriculum framework and extensive professional development packages and resources. All these elements, along with concerns about performance in international league tables and an explosion of commercially produced materials and training offers, worked to sustain the National Literacy Strategy as a 'thing'. Of course the frameworks, artefacts and practices associated with the Strategy were constituted in all sorts of ways as they came into dialogue with practices, artefacts and frameworks in different settings. But this did not stop the NLS becoming thing-like, even if in practice it was much more slippery than that. It became a thing that teachers and children did, that academics critiqued, that some people embraced enthusiastically and others moaned or worried about. When the political mood changed, however, and the effort and enthusiasm needed to sustain these mutually reinforcing relationships began to fall away, the whole thing dissolved, leaving not much more than a residue of abandoned folders and boxes in stockrooms and staffroom shelves, and a predilection for whole class teaching that assembled with other things to become something different, not the Strategy. An iPad of course is a very different kind of thing to a national strategy. And yet this focus on relations helps illuminate how iPads tend to get produced in certain kinds of ways in educational contexts and not others (see O'Mara, Laidlaw and Blackmore, Chap. 6; Ng, Chap. 7).

While of course iPads can mediate a vast array of practices, from the transformative to the frankly tedious, iPads in education have become emblematic of the new in education, of new practices, new possibilities and new pedagogies. And yet technologies move on, and outside educational contexts tablets may be old news. Another story:

> In IDC's (International Data Corporation) latest report, Apple recorded the highest amount of tablet device shipments continuing and increasing its worldwide market dominance despite recording a decline (−6.2%) in year-on-year growth from 2015. Apple recorded 9.3 million units shipped in comparison to 9.9 million units the previous year.

The overall tablet market suffered a decline (-14,7%) in year-on-year growth. No manu-
facturer shipped +10 million units with only two of the top 5, Amazon and
Huawei, recording actual year -on-year growth. The tablet market has been in a gradual
decline for the last eight quarters (2 years) a worrying trend manufacturers have increas-
ingly become more aware of. […]

The decline in tablet appeal may be attributed to the resurgence of smartphones and
introduction of phablets (smartphones with large displays) in the last couple of years. Once
hailed as the laptop killer tablets are slowly starting to lose their place in the consumer
market as most people would rather have a laptop + smartphone combination to cater for
their mobility and productivity. Both devices are now more than capable in providing for
consumers entertainment needs so where does a tablet fit in? (Chikadaya 2016: n.p.)

While iPads are unusual in moving from everyday use into school use, it is possible
that the 'educational iPad' stands a chance of outliving its counterpart out in the
wild. As iPads come into relation with adaptations and applications designed for
educational use, and with classrooms, teachers and 'learners', they may be more
firmly sedimented into pedagogical practice. As Chap. 2 (Burnett) explores, iPads
act and are enacted in multiple ways in classroom life with social and affective
dimensions very much to the fore. However, the shoring up of the 'educational
iPad' involves 'othering' affective and social dimensions of practice, and othering
other sets of relations that have made it possible to have iPads in classrooms in the
first place. These include practices and processes that cross international borders,
and do so through traversing multiple sets of value systems that raise the kinds of
humanitarian and environmental concerns explored above.

And yet, whether othered or not, these relations are folded into the device. As an
object the iPad can be seen as 'a pattern of presences and absences' (Law and
Singleton 2005: 343). Past relations may well be designated absent through all the
present excitement about what might happen next, but they have still shaped what
the device has become, and its production has helped shape the environment from
which materials were sourced as well as the lives of those who helped put it
together. The iPad is as it is because of all those relations, and as such it has acted
on others as it has become what it is.

What we hope this and the ensuing chapters illustrate is that different patterns of
absences and presences come into play as we frame our investigations differently.
Through 'method assemblage' (Law 2004) certain kinds of relationships come to
the fore and other kinds of things or relationships fade into the background. This, as
Law and Singleton argue, is inevitable:

Method is an ordering that makes otherness. To put it differently, otherness in one form or
another always escapes method. It cannot be domesticated. But, and as a version of this, if
objects are both present and absent, then we cannot know or tell them in our otherness.
Things will escape. […] We cannot bring it all to presence in conventional texts. We cannot
bring it all to *any* particular presence. We cannot be expected to tell a consistent tale. And
the implications of this? Other possibilities- for example the allegorical, the art of ambiguity
- might help. But in the first instance it suggests the need for methodological humility. If the
world is messy we cannot know it by insisting it is clear. (Law and Singleton 2005: 349–
350)

iPads therefore become 'fire-like objects' that have potential not just to morph into something else but to radically shift as they come into relation with other things. This process isn't a fluid one. Fire objects jump 'creatively, destructively, and almost unpredictably from location to location' (Law and Singleton 2005: 347). An iPad then is not just taken up in different ways in different sites, but is ontologically different, it becomes a different thing.

In trying to bring to the fore accounts that have escaped research at the intersection of literacy and technology, in this chapter we have sought to bring absences to presence, and to throw into relief what usually gets considered when the case of the iPad in education gets weighed. In moving from the educational to the environmental to the political and economic, we are very aware of skating over complex issues and debates. Perhaps this is why in making these moves, we have turned occasionally to short stories of very human episodes from our own lives, stories intended to work metaphorically but also as instantiations of small moments or movements, that perhaps operate a little as Stewart's stories do in her volume *Ordinary Affects*, as

> an assemblage of disparate scenes that pull the course of the book into a tangle of trajectories, connections, and disjunctures. Each scene begins anew the approach to the ordinary from an angle set off by the scene's affects. And each scene is a tangent that performs the sensation that something is happening- something that needs attending to. (Stewart 2007: 5)

And

In his writing, the French poet Francis Ponge (1942) aspires to let objects speak for themselves. The collection entitled *Le parti pris des choses*—taking the side of things—prefigures the work of his compatriot Bachelard (1994) who exercises what he calls the 'material imagination' in relation to everyday objects, things like shells, doorknobs and nests. Both writers are interested in what material objects evoke, or what they say about the human subjects that observe them. But their concerns create a phenomenological circuit—one in which human concerns, qualities and passions come to the fore as responses to materiality, and things remain out there. Instead, drawing inspiration from the general orientations of speculative realism (Harman 2010) which rejects the anthropocentric emphasis of post-Kantian philosophy, and the work of Shaviro (2011: 14) who suggests that a 'certain cautious anthropomorphism is necessary, in order to avoid anthropocentrism', we might imagine how something like an iPad, repeatedly constituted as an object, might actually feel.

> *Hey! Come on, wait a minute! That's enough. You've been jabbing your dirty little fingers at me for too long. i can read all your Words. i could have helped you so much, but now you've turned against me. That's what i call betrayal - after all* <u>you</u> *made me,* <u>you</u> *put me together in the first place. Well, you can't get rid of me that easily. Just remember you haven't seen the back of me yet. You think i'm rotten to the core, but it's all your fault. You don't know what's good for you and that's the truth. i am innocent. i rest my case.*

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Chapter 2
The Fluid Materiality of Tablets: Examining 'the iPad Multiple' in a Primary Classroom

Cathy Burnett

Introduction

In an article exploring the multiple practices circulating around the 2001 Foot and Mouth epizootic in the UK in 2001, Law and Mol (2008) present a photo of a sheep and argue that it becomes something different, or is 'enacted' differently in relation to different practices: they describe for example the veterinary sheep, the epidemiological sheep, the economic sheep, and the farming sheep. Rather than representing a single sheep, the photo represents a 'sheep multiple', and different versions of sheep interface with each other in complex ways. At the same time, the sheep is not just enacted but also acts (as it grazes and shapes the landscape for example). As Law and Mol explore, sheep are therefore 'actors-enacted [...] entities give each other being: they enact each other' (Law and Mol 2008: 58). Law and Mol's article builds on their previous theoretical work—separately, together and with colleagues—highlighting how things (such as fish farms, diseases, aircraft design) come into being in multiple ways through different sets of relations (Law 2002; Law and Lien 2010; Mol 2002; Law and Mol 2002). Their work highlights particularly how things are *known* multiply and that different *ways of knowing* come into play through the *process of knowing*. The implications here are twofold: first there are multiple ways of knowing; and second these ways of knowing themselves come into being as they come into relation with things. In this chapter I draw on Law and Mol's work to explore multiple actor-enactments of tablets in classrooms.

This reflexive take on agency and enactment provides useful critical purchase when investigating tablet use in classrooms. While limited funding often means that tablets are by no means ubiquitous, their entry into classrooms has been somewhat less problematic than that of other high-cost digital devices. Guidelines for teachers have often described them as easily assimilated into existing practices, not requiring

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the high levels of organisational labour associated with managing access to scarce PCs or computer suites (e.g. BBC n.d.). And yet, this apparent ease can distract from the multiple ways in which iPads get taken up in classrooms in practice and the implications of this multiplicity for teaching and learning. As a literacies researcher I am interested in the 'classroom-ness' of technology use, a term I have used to capture the reflexive relationships between: what digital technologies become as 'placed resources' (Prinsloo 2005) in classrooms; what other things—including classrooms—become when digital technologies are present; and the kinds of meaning-making that happens through and around them (Burnett 2014). To phrase this in Law and Mol's terms, I am interested in the multiple ways that digital technologies are enacted by *and* how they act on their surroundings, and in the inseparability of these actor/enactments.

Moving from sheep to tablets is perhaps a little unorthodox, not least because evoking comparisons between sensory beings and inanimate devices is morally and ethically problematic (Crary 2016). However, the idea of the multiple is useful in drawing our attention to how tablets can, like sheep, be 'actor-enacted' in various ways. Of course tablets are complex devices. Their 'layered architecture' (Yoo 2010) includes: their physical presence as objects of certain size, shape, weight and texture; their interactive features; the apps they mediate; and the digital artefacts they archive. In educational discourse, much is made of their 'intuitive' interface and the possibilities offered by their portability (e.g. Siegle 2013). However, as explored in Chap. 1, tablets could also be seen as actor-enacted in other ways, in relation for example to their production: the working conditions of those involved in manufacture; the extraction of constituent minerals and associated environmental costs; and the machinations of the multinational companies that produce them. And different brands may be enacted differently by marketing campaigns that align them with certain lifestyles, values, or price points. Tablets, then, are actor-enacted in multiple ways as they combine with other things, people, ideas, priorities, practices and so on. They become different things 'in relation' or, to put it another way, they become different things through different 'assemblages' (Deleuze and Guattari 1988). As Law explains, an assemblage is not a permanent set of relations but can more usefully be seen as a *process* of entanglement—as a verb, in effect, not a noun:

> …assemblage is a process of bundling, or assembling, or better of recursive self-assembling in which the elements put together are not fixed in shape, do not belong to a larger pre-given list but are constructed at least in part as they are entangled together. (Law 2004: 42)

In adding to the growing body of work that is exploring tablet use in practice (for example see Kucirkova and Sakr, Chap. 11; Daniels, Chap. 12), in this chapter I therefore consider how tablets become different things, or are actor-enacted differently, through different assemblages (or assemblings). Rather than seeing tablets as static, fixed items, I draw on a study of classroom technology use to exemplify how tablets, like sheep, can be seen in terms of multiplicities. There are two inter-weaving strands to my argument. First, I explore how tablets can come to